Impact of supply chain management and agile supply chain on customer satisfaction and competitive advantage

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Abstract - This research aims to investigate the impact of supply chain management and agile supply chain on customer satisfaction and competitive advantage in two factories of Fars Industrial Town. According to the research topic, the following variables are defined: supply chain management, agile supply chain, competitive advantage, and customer satisfaction. Research in terms of purpose is applied and in terms of nature and methodology is descriptive and correlational. The statistical population includes 110 respondents and the statistical sample includes 86 respondents. At first, the reliability and validity of the research is investigated. Also, using the structural equation modeling technique with partial least squares approach, the research hypotheses are tested. The results of the study indicate confirmation of all of the hypotheses.

Keywords: supply chain management, agile supply chain, competitive advantage, customer satisfaction

1. Introduction

With the expansion of the globalization of markets, the only way for companies and organizations for surviving is to increase competitiveness and to maintain a sustainable competitive advantage. In order to achieve competitiveness, customer service must be the focused on. Today, the competition between individual companies has given its place to competition between chains. Supply chains connect suppliers to a manufacturing company and also connect the companies to their customers. In order to properly manage the supply chain, we need to be sure about customer service, low cost, and short cycle times (Lauden, 2011). Supply chain management has now become a clear path for survival in a competitive world. Organizations benefit from better management of supply chain management for competitive advantage and organizational performance (Singh et al., 2018). Therefore, competitive advantage can be considered as being superior to competitors in terms of customer preferences (Indarji, 2002). In addition, it can be said that the source of competitive advantage is the ability of the company to differentiate it from competitors and how it works at a low cost (Palanding et al., 2018).

In a bid to cope with market instability, companies now look beyond cost advantage. Speed, quality and flexibility are being emphasized as means of responding to the unique needs of customers and markets. A supply chain adapts the changes if it is agile in nature. Agility is all about creating that responsiveness and mastering the uncertainty. The aim of this paper is to represent the effect of agility in supply chains on customer satisfaction. In this article interpretive structural modeling has been used to evolve relationships among variables. The study concludes with a discussion on these variables and the managerial implications (Barve, 2011).

2.   An overview on the research background

In the context of the relationship between the organization's performance, supply chain management and customer satisfaction, there have been number of researches. Palanding et al. (2018) conducted astudy entitled "Analyzing the Impact of Supply Chain Management and Supply Chain Flexibility on Competitive advantages and its Impact on the Performance of Fish Exporting Companies Bitung, Malaysia". This research was conducted on 21 fish export companies. Data were collected by questionnaires and interviews and then the results were analyzed by partial least squares method (PLS). The results of the study have indicated that competitive advantage is strongly dependent on supply chain management and supply chain flexibility.

Wu et al. (2017) conducted a study about achieving competitive advantage through agility of supply chain in unreliability settings, considering a new structure of multi-criteria decision making. The research was conducted in Taiwanese companies and fuzzy ANP method was used for the data analysis. The results of the research show that agile supply chain is effective on competitive advantage.

Lee et al. (2006) conducted a research to examine impact of supply chain management techniques on competitive advantage and organizationalperformance. In this study, data from 196 organizations were collected for study and the suggested relationships were tested using structural equation modeling. The results of this research show that supply chain management has an important impact on creation of competitive advantage, which organization may get the competitive advantage in terms of quality, reliability, flexibility and time-to-market dimensions.

Barrow (2011) examined impact of agile supply chain on customer satisfaction. Their collected data was analyzed using the structural equation model and the results showed the sharing of information and trust leads to flexibility in the system, system flexibility and reduced time leads to cost savings and increases the quality of service, which in turn leads to sensitivity and customer responsiveness and ultimately the sensitivity and customer responsiveness leads to customer satisfaction. Therefore, agile supply chain is affecting on customer satisfaction. Tan (2002) carried out a study on supply chain management: practices, concerns and performance issues. He explains in his research that supply chain goal in the short term is increasing productivity and decreasing inventory and in the long term goal, it aims at increasing customer satisfaction.

Maboodi et al. (2010) examined impact of supply chain management on customer satisfaction in the textile industry. In this research, the quality of supply chain relations with dimensions of communication, cooperation, commitment, dependency, compliance and trust, as one of the main processes of supply chain management and the independent variable is studied. Also, customer satisfaction that is considered as one of the important criteria for measuring quality is considered as the dependent variable of the research. In the following, the relationship between these two variables is examined. In terms of implementation, this research is of the correlation type and it is done as a field study. Statistical population of the research includes suppliers of Mazandaran Textile Companies, with a sample of the size 30. The measurement tool was a questionnaire and using Pearson test, the relationship between the two variables was investigated. Findings of the research indicate that management of supplier relationships in the textile industry has direct relevance to customer satisfaction. The results showed that the most relevant and the least relevant dimensions with customer satisfaction were communication and dependency, respectively. At the end, it was revealed that the management of textile supply chain has a direct relationship with customer satisfaction.

3.   Theoretical foundations and hypotheses

According to previous researches, this section defines the concepts related to the main variables of the research, including supply chain management, agile supply chain, competitive advantage, and job satisfaction. The supply chain consists of all the parts directly or indirectly cooperate to provide customers' requests. These parts can include manufacturer, supplier, transporters, warehouses, retailers and customers. These sectors include activities such as new product development, marketing, executive operations, distribution, financial services, customer service, etc. Supply chain is a dynamic set of information flow, product and capital across its different levels, which the customer is only one of the internal involved component within the supply chain. So you can say that the first goal of the supply chain is to satisfy customer needs in the process of supplying as well as generating profits for the chain itself (Stadler and Kilger, 2002). Therefore, supply chain management means the process of integrating supply chain activities as well as related information flows by improving and coordinating activities in the supply chain of production and supply of the product (Laudon, 2011).

On the other hand agility in SCM has recognized as a capability that embraces logistic processes, information system, and structure of organizations (Christopher, 2000). Supply chain agility often tends to utilize market knowledge in order to obtain profitable possibilities from the uncertain market (Shahin et al., 2017).A researcher has claimed that competitive advantages might be gained with agility integration in supply chain processes (Gligor, 2016). Agile supply chains offer the flexibility required to support customers who require a "quick response" to demand requirements. Coupled with lean process improvements and integrated solutions, cost-effective supply chains can be established that provide the infrastructure needed to support the agility needed

to meet customer demands; ultimately increasing market share and continued growth (Langston, 2017). The agile supply chain has enormous significance in today's business world bearing capability to meet the demand of customers in a superior manner. Since researchers have stated that agility has become a core driver of firms' competitiveness (Rafique, 2018).

About customer satisfaction, all definitions of customer satisfaction have one thing in common that is the truth that customer after purchasing does an evaluation about the goods and services so that this evaluation will lead to a sense of satisfaction. Overall customer satisfaction is the outcome of all the relationships that an entity has during each with the customer. Not only goods, but also services provided along with it are also evaluated. Customer satisfaction is the overall customer attitude toward service provider or it is an emotional reaction to the difference between their expectations and their perceptions, given satisfaction of some needs, goals or desires (Hausen Mark, 2004).

Concerning the competitive advantage, Porter (2004) expresses that competitive advantage is primarily a value that a company can create for its buyers, and this is something more than company's costs. On the other hand, the lean concepts follow Operational performance improvements, which means competitive advantages such as quality, costs, price, delivery speed, delivery compliance, innovation, and flexibility, according to Murgeson et al. (2012), (for example better, cheaper, faster).So according to the above, the following research hypotheses are suggested:

Basic hypothesis:

supply chain management and agile supply chain affect customer satisfaction and competitive advantage.

Subsidiaryhypotheses:

First hypothesis: Supply chain management influences competitive advantage.

Second hypothesis: Agile supply chain influences competitive advantage.

Third hypothesis: Supply chain management influences customer satisfaction.

Fourth hypothesis: Agile supply chain influences customer satisfaction.

To the best of our knowledge, no study so far has considered impact of supply chain management and supply chain agility concurrently on the competitive advantage and customer satisfaction. So according to the above, the conceptual model of the research is designed as follows.
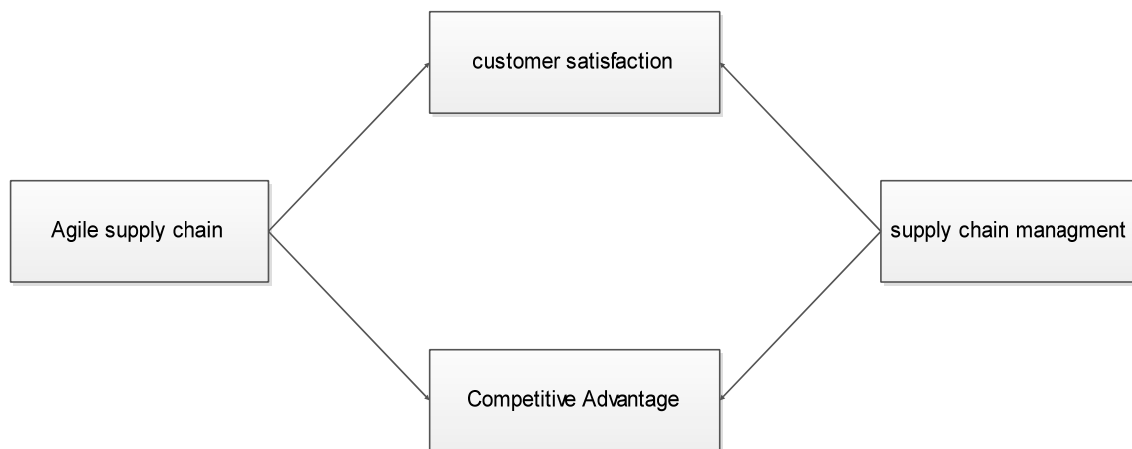
Figure 1. The conceptual model of the research

4. Research methodology

This research in terms of purpose is applied and in terms of the nature and methodology is descriptive and correlational. In this research, the population included 110 people and the sample included 86 respondents. Data were collected using agile supply chain questionnaire by Bidhendi and Golmohamadi (2017), customer satisfaction questionnaire by Yu et al. (2013), supply chain management questionnaire and competitive advantage questionnaire by Lee et al. (2006). In this study, to assess the validity of the questionnaires used in the research, the convergent-constructive validity technique is used and to determine the reliability, composite reliability techniques and Cronbach's alpha are used.

Construct-convergent validity was evaluated using confirmatory factor analysis technique (LISREL software). Also, using the structural equation modeling technique with partial least squares approach, the research hypotheses are tested. Before testing the research hypotheses, we must examine model fitness as well as the structural and the overall models.

Construct-convergent validity was evaluated using confirmatory factor analysis technique (LISREL software). To verify the construct-convergent validity, two criteria should be considered: 1) the factor loadings for each latent variable should be greater than 0.5 and ideally larger than 0.7, 2) average extracted variance for each latent variable should be greater than 0.5 (Raminmehr and Charsetad, 2013). Also, techniques such as composite reliability and Cronbach's alpha were calculated using LISREL and SPSS. Tables 1 to 4 show the results of the validity and reliability of the questionnaires used in the research.

Table 1. Factor loadings, Cronbach's α, SCR and AVE of SCM questionnaire

criteria	Items	Factor loadings	t>1.96	AVE	CR	Cronbach's α
Customer relationship	We frequentlyinteract with customers to set reliability, responsiveness, and other standards for us.	0.92	✓	0.781	0.915	0.881
	We frequently measure and evaluate customer satisfaction.	0.89	✓			
	We frequently determine future customer expectations.	0.84	✓			
Level of information sharing	We inform trading partners in advance of changing needs.	0.80	✓	0.611	0.824	0.802
	Our trading partners share proprietary information with us.	0.83	✓			
	Our trading partners keep us fully informed about issues that affect our business.	0.71	✓			
Quality of information	Information exchange between our trading partners and us is timely.	0.73	✓	0.588	0.811	0.794
	Information exchange between our trading partners and us is accurate.	0.78	✓			
	Information exchange between our trading partners and us is complete.	0.79	✓			
supplier partnership	We consider quality as our number one criterion in selecting suppliers.	0.58	✓	0.513	0.755	0.762
	We regularly solve problems jointly with our suppliers.	0.68	✓			
	We have continuous improvement programs that include our key suppliers.	0.86	✓			
Postponement	We delay final product assembly activities until the last possible position (or nearest to customers) in the supply chain.	0.84	✓	0.685	0.867	0.844
	We delay final product assembly activities until customer orders have actually	0.86	✓			
	Our products are designed for modular assembly.	0.78	✓			

Table 2. Factor loadings, Cronbach's α, SCR and AVE of Competitive advantage questionnaire

criteria	Items	Factor loadings	t>1.96	AVE	CR	Cronbach's α
Price/cost:	We offer competitive prices.	0.82	✓	0.672	0.804	0.812
	We are able to offer prices as low orlower than our competitors.	0.82	✓			
Quality	We offer products that are highly reliable.	0.76	✓	0.598	0.817	0.822
	We offer products that are very durable.	0.78	✓			
	We offer high quality products to our	0.78	✓			
Delivery dependability:	We deliver the kind of products needed.	0.84	✓	0.711	0.881	0.862
	We deliver customer order on time.	0.86	✓			
	We provide dependable delivery.	0.83	✓			
Product innovation:	We provide customized products.	0.86	✓	0.684	0.867	0.855
	We alter our product offerings to meet client needs.	0.83	✓			
	We respond well to customer demand for "new" features.	0.79	✓			
Time to market:	We deliver product to market quickly.	0.94	✓	0.727	0.888	0.860
	We are first in the market in introducing	0.79	✓			
	We have time-to-market lower than industry average.	0.82	✓			

Table 3. Factor loadings, Cronbach's α, SCR and AVE of SCM Agility questionnaire

criteria	Items	Factor loadings	t>1.96	AVE	CR	Cronbach's α
Speed	Speed of new product introductions	0.88	✓	0.755	0.902	0.896
	Speed in deployment of new techniques in manufacturing	0.78	✓			
	Speed of exploring new markets	0.94	✓			
Competence	Initial design of products by adding value to the customer	0.92	✓	0.648	0.844	0.856
	Creation of infrastructure to encourage innovation	0.83	✓			
	Quality beyond the product lifecycle	0.64	✓			
Flexibility	Ability to change delivery policies	0.66	✓	0.504	0.748	0.782
	Ability of being responsive to diverse demands of customers	0.58	✓			
	Ability of supply chain staff to deal with sudden changes	0.86	✓			
Responsiveness	The ability to deliver products for special customers	0.87	✓	0.545	0.782	0.804
	The ability of IT systems to adapt to changes	0.76	✓			
	Maintaining and enhancing relationships with customers	0.67	✓			

Mohammad Mirabi et al. / International Journal of Engineering and Technology (IJET)

Table 4. Factor loadings, Cronbach's α, SCR and AVE of customer satisfaction questionnaire

Items	Factor loadings	t>1.96	AVE	CR	Cronbach's α
Our overall customer satisfaction levels increased	0.90	✓			
Our after-sales service satisfaction levels increased	0.76	✓	0.687	0.867	0.892
Our customers stated expectations are exceeded	0.82	✓			

Tables 1 to 4 indicate the factor loadings of questions/dimensions of construct of the research model. As shown in these tables, all these factor loadings are significant. Since the factor loadings are greater than 0.5 (and so significant) and the average extracted variance is greater than 0.5, convergent validity for each indicator and the main construct is confirmed. Also, all coefficients of Cronbach's alpha and composite reliability are greater than 0.7, which indicates appropriate reliability of the questionnaires used in the research.

5. Research findings

In this study, we used structural equation modeling technique with partial least squares approach to test the research hypotheses. Before examining the research hypotheses, we must examine the fitness of the model, the structural as well as its overall model. Table 5 shows the model measurement indicators, structural model and the overall model of the research hypotheses:

Table 5. Model fitness indicators

The fitness indicators of the measurement model					
Construct	**Correlation with another construct**			CR	AVE	Factor loadings of indicators/question
Competitive Advantage	0.621	0.710	0.709	0.935*	0.743*	0.792* – 0.897*
Customer Satisfaction	0.832	0.726		0.877*	0.705*	0.747* – 0.895*
SCM	0.739			0.872*	0.578*	0.715* – 0.797*
SCM Agility				0.855*	0.598*	0.639* – 0.864*
The fitness indicators of the structural model					
Construct	R^2		Adjusted R^2		Q^2
Competitive Advantage	0.712*		0.706*		0.490
Customer Satisfaction	0.747*		0.741*		0.488
The model overall fitness indicators					
GoF		$\overline{R^2}$		$\overline{Communalities}$	
0.642		0.730		0.565	
*: significance at the confidence level of 0.95					

Fitness of the research measurement model was examined by using the factor loadings, the average extracted variance, hybrid reliability and diagnostic validity. As specified in Table 5, all factor loadings, and all questions/indicators of the main variables of the research are significant at the confidence level of 95% and there is no need to remove none of them. Also, values of the average extracted variance and the combined reliability of the research variables are significant at the confidence level of 95%.

Fitness of the structural model was examined using the following indicators:R^2, adjusted R^2 and Q^2. As shown in Table 1, all values of R^2 and adjusted R^2 are significant. China (1998) introduced three values of 0.19, 0.33 and 0.67 as the criterion value for weak, medium and strong value of R^2, in order. Accordingly, R^2 of competitive advantage and customer satisfaction was 0.712 and 0.774, respectively, which in addition to being significant is in a strong level. IndicatorQ^2 measures the predictive power of the model. Values 0.02, 0.15, and 0.35 show the weak, average and robust predictive power of the model, in order, for the endogenous constructs. Value of this indicator for the competitive advantage and customer satisfaction is equal to 0.490 and 0.448, respectively, which indicates that the indicator is at a strong level.

Mohammad Mirabi et al. / International Journal of Engineering and Technology (IJET)

To check fitness of the overall model, which controls both the measurement and structural model sections, GoF benchmark is used:

$$GoF = \sqrt{\overline{Communalities} \times \overline{R^2}}$$

Where, $\overline{Communalities}$ is the mean of the collective values of the indicators or the research questions. Wotzles et al. (2009, p. 187) introduces three values of 0.01, 0.25 and 0.36 as the criterion value for weak, average and strong values of GoF. So the GoF value of 0.642 indicates strong fitness of the overall model.

Subsequently, the research hypotheses were tested. Figure 2 shows values of the path coefficients of the independent variables on the dependent variable. In this form, values of p can also be seen:
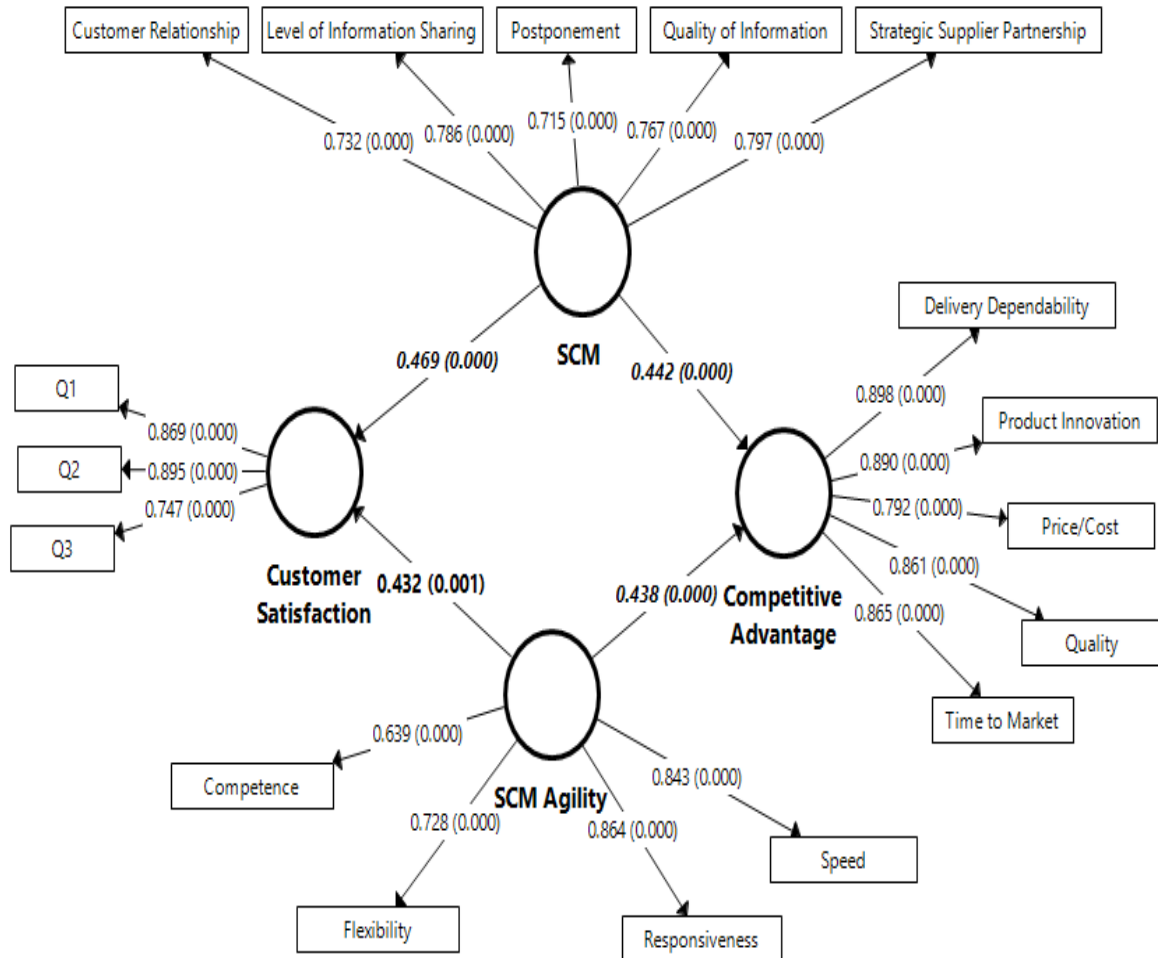

Figure 2. Model of the research hypotheses and statistics p

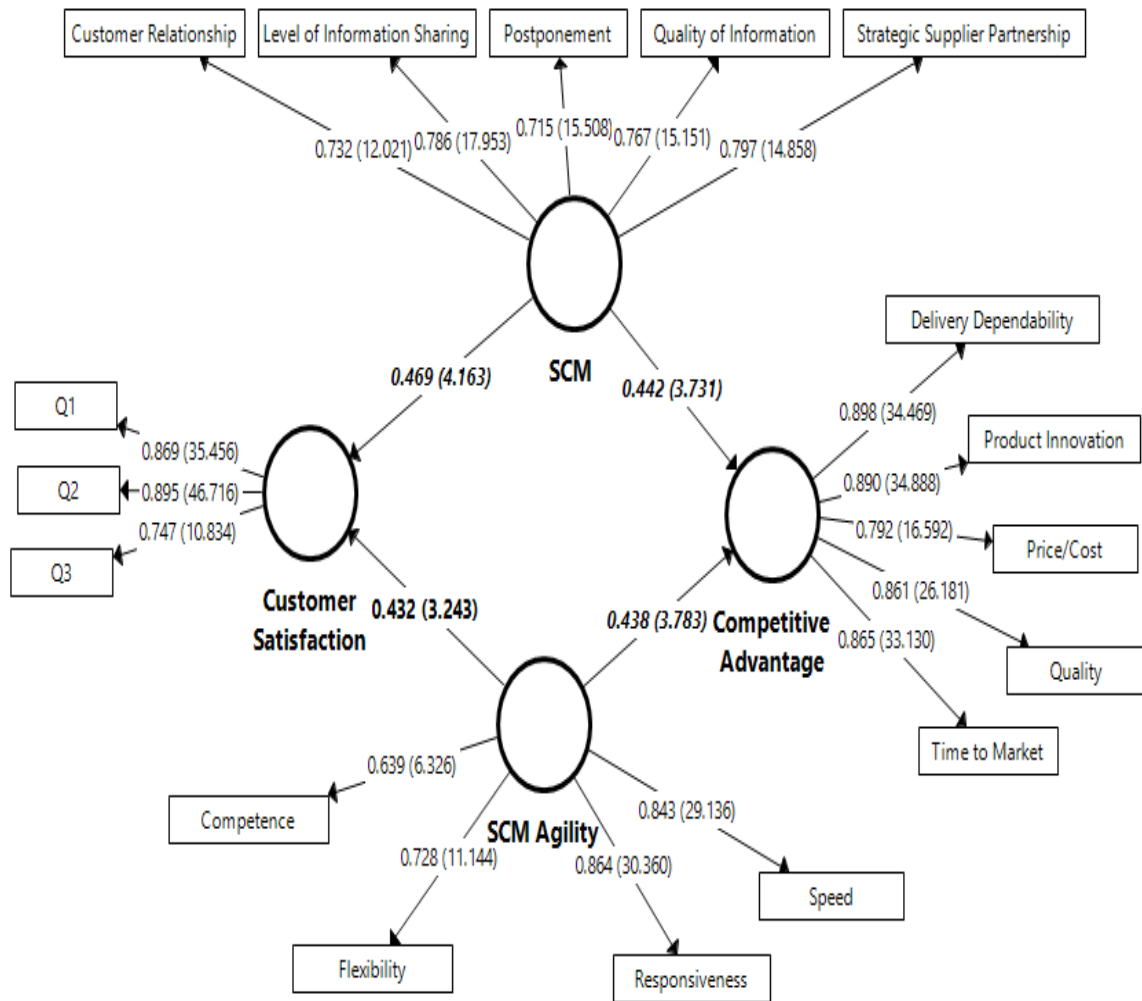Figure 3 shows values of the path coefficients and the t statistic:

Figure 3. Model of the research hypotheses and t statistics

Table 6 includes the test results of the research hypotheses:

Table 6. The test results of the research hypotheses

Hypotheses test	P value	t value	Path coefficient	dependent variable	Independent variable	Hypotheses
supported	0.000	3.73	0.442	Competitive Advantage	SCM	1
supported	0.000	4.16	0.469	Customer Satisfaction	SCM	2
supported	0.000	3.78	0.438	Competitive Advantage	SCM Agility	3
supported	0.001	3.24	0.432	Customer Satisfaction	SCM Agility	4

As shown in Table 6, all the research hypotheses are verified:

1) The test result of the first hypothesis showed that impact of SCM on competitive advantage is 0.442. The values of p and t are less than 0.05 and greater than 1.96, respectively. Based on p value (less than 0.05) and t value (greater than 1.96), with a confidence of 95%, it can be said that the research hypothesis is confirmed; that is, SCM has a positive and significant impact on the competitive advantage.
2) The result of the second hypothesis test showed that effect of SCM on customer satisfaction is 0.496. The values of p and t are less than 0.05 and greater than 1.96, respectively. Based on $p$value (less than 0.05) and t value (greater than 1.96), with a confidence of 95%, it can be said that the research hypothesis is confirmed; that is, SCM has a positive and significant impact on customer satisfaction.
3) The result of the third hypothesis test showed that effect of SCM agility on competitive advantage is 0.438. The values of p and t are less than 0.05 and greater than 1.96, respectively. Based on p value (less than 0.05) and t value (greater than 1.96), with a confidence of 95%, it can be said that the research hypothesis is confirmed; that is, SCM agility has a positive and significant impact on competitive advantage.
4) The result of the fourth hypothesis test showed that effect of SCM agility on customer satisfaction is 0.432. The values of p and t are less than 0.05 and greater than 1.96, respectively. Based on p value (less than 0.05) and t value (greater than 1.96), with a confidence of 95%, it can be said that the research hypothesis is confirmed; that is, SCM has a positive and significant impact on customer satisfaction.

Conclusions

The results of this study confirmed all of the hypotheses. About impact of supply chain management on the competitive advantage, the research results matches with that of Palanding et al. (2018) and Lee et al. (2006), and about impact of supply chain management, the results are in line with Tan (2002) and Maboodi (2010). On the other hand, in connection with the impact of agile supply chain on the competitive advantage, our results are consistent with those of Wu et al. (2017) and in relation to the impact of agile supply chain on customer satisfaction, the research results are consistent with Baro (2019). No research so far has studied impacts of supply chain management and agile supply chain on competitive advantage and customer satisfaction concurrently.

References

[1]   Shahin, A. Khalili, and M. Pourhamidi. 2017. Proposing a new approach for evaluating supply chain agility by data envelopment analysis with a case study in PashminehKavirfactory.International Journal of Services and Operations Management, vol. 26, pp. 277-293, 2017.
[2]   AbdoliBidhandi, R., &Valmohammadi, C. (2017). Effects of supply chain agility on profitability. Business Process Management Journal, 23(5), 1064-1082.
[3]   Barve, A. (2011). Impact of supply chains agility on customer satisfaction. In 2010 international conference on e-business, management and economics, IPEDR (Vol. 3, pp. 325-329). IACSIT Press Hong Kong.
[4]   Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), Modern methods for business research (pp. 295 –336). Mahwah, New Jersey: Lawrence Erlbaum Associates.
[5]   D. M. Gligor. 2016. The role of supply chain agility in achieving supply chain fit. Decision Sciences, vol. 47, pp. 524-553, 2016.
[6]   Hasenmark, O. a. (2004). Customer Satisfaction and Retention: The Experiences of Individual Employees. Managing Service Quality, 14(1), 40-57.
[7]   Indrajit, Ricardus Eko dan Djokopranoto. (2002). Konsep Manajemen Supply Chain: 4. Strategi Mengelola Manajemen Rantai Pasokanbagi Perusahaan Modern di Indonesia. PT. GramediaWidiasarana Ind, Jakarta.
[8]   Langston, J. (2017). Key Performance Indicators in an Agile Supply Chain. Master of Information Systems Capstone Executive.
[9]   laouden, E., (2011). Supply Chain Management: a physical programming approach. Int. J. Production Economics, In Press, Corrected Proof, Available online 22 July 2004.
[10] Li, S., Ragu-Nathan, B., Ragu-Nathan, T. S., & Rao, S. S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. Omega, 34(2), 107-124.
[11] Li, S., Ragu-Nathan, B., Ragu-Nathan, T. S., & Rao, S. S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance Omega, 34(2), 107-124..
[12] M. Christopher. 2000. The agile supply chain: competing in volatile markets. Industrial marketing management, vol. 29, pp. 37-44, 2000.
[13] Maboodi, M.; Javanshir; H.; Rashidi; AS.; and P. Valipoo, (2010), investigating effect of supply chain management on customer satisfaction in the textile industry; Science and Technology Journal of Textile, Year 5, Issue 1.
[14] Murugesan T, Kumar B, Kumar M (2012) Competitive advantage of world class manufacturing system (WCMS)—a study of manufacturing companies in south India. European Journal of Social Sciences 29(2):285–311.
[15] Palandeng, D. I., Kindangen, P., Timbel, A., & Massie, J. (2018). Influence Analysis of Supply Chain Management and Supply Chain Flexibility to Competitive Advantage and Impact on Company Performance of Fish Processing in Bitung City. Journal of Research in Business, Economics and Management,(10), 1, 1783-1802.
[16] Palandeng, D. I., Kindangen, P., Timbel, A., & Massie, J. (2018). Influence Analysis of Supply Chain Management and Supply Chain Flexibility to Competitive Advantage and Impact on Company Performance of Fish Processing in Bitung City. Journal of Research in Business, Economics and Management,(10), 1, 1783-1802.
[17] Porter, M.E,, (2004) Building the microeconomic foundations of prosperity: findings from the business competitiveness index', In Sala-i-Martin, X. (ed.), The Global Competitiveness Report 2003–2004. Oxford University Press: New York.
[18] Rafique, K., Kai, L., &Waheed, A. (2018, January). Understanding the Impact of Agile Supply Chain on Organizational Financial Performance. In Proceedings of the 2018 2nd International Conference on Management Engineering, Software Engineering and Service Sciences (pp. 28-32). ACM.
[19] RaminMehr, H; Chrastad, P. (2008). Quantitative Research Method by applying Structural Equation Modeling (LISREL Software), Tehran, Terme.

[20] Singh, R., Sandhu, H. S., Metri, B. A., & Kaur, R. (2018). Supply Chain Management Practices, Competitive Advantage and Organizational Performance: A Confirmatory Factor Model. In Operations and Service Management: Concepts, Methodologies, Tools, and Applications (pp. 1181-1207). IGI Glob.

[21] Stadtler, H., kilger, c.(2002). supply chain management, enterprise resource palnning(ERP), and advanced planning system(APS).

[22] Tan, K. C. (2002). Supply chain management: practices, concerns, and performance issues. Journal of Supply Chain Management, 38(4), 42-53.

[23] Wetzels, M., Odekerken-Schroder, G., & van Oppen, C. (2009). Using PLS Path Mode ling for Assessing Hierarchical Construct Models:Guidelines and Empirical Illustration. MIS Quarterly 33,1, 177-195.

[24] Wu, K. J., Tseng, M. L., Chiu, A. S., & Lim, M. K. (2017). Achieving competitive advantage through supply chain agility under uncertainty: A novel multi-criteria decision-making structure. International Journal of Production Economics, 190, 96-107.

[25] Yu, W., Jacobs, M. A., Salisbury, W. D., & Enns, H. (2013). The effects of supply chain integration on customer satisfaction and financial performance: An organizational learning perspective. International Journal of Production Economics, 146(1), 346-358.