Supply Chain Innovation Performance And Satisfaction With Supply Chain Results: The Moderating Role Of Supply Chain Innovativeness Capability

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Abstract. The existence of uncertainty in technology development encourages organizations to implement innovation. Innovation is a complex process to deal with environmental and technological uncertainty, especially in finding new processes, new ideas, new products, and new technologies. Organizations recognize that innovation in the supply chain is an important part of supporting strategic success, improving supply chain innovation performance, and increasing satisfaction with supply chain results, and the long-term viability of the organization. The role of supply chain innovation performance can support satisfaction with supply chain results with the support of existing supply chain innovativeness capability within the organization to achieve sustainable competitive advantage. This study examines the effect of supply chain innovation performance on satisfaction with supply chain results with supply chain innovativeness capability as moderating. This study uses primary data obtained from owners of Micro, Small, and Medium Enterprises (MSMEs) in the trade sector in the Province of the Special Region of Yogyakarta with a total of 55 respondents. The results of this research analysis show that supply chain innovation performance has a positive effect on satisfaction with supply chain results and when supply chain innovativeness capability is included as a moderating variable, the effect of supply chain innovation performance on supply chain innovation performance is negative.

Keywords: Supply Chain Innovation Performance; Supply Chain Innovativeness Capability; Satisfaction of Supply Chain Results.

1 Introduction

Changing environmental conditions and instability in the economy are challenges for future organizational development [1]. Furthermore, [1] revealed that the phenomenon of global economic instability causes the strategies implemented in organizations to change. The existence of technological changes and the increasing level of competition encourage organizations to find innovative strategies to gain a competitive advantage [6].

[26] said that an organization cannot move alone to run its operations, so the organization must cooperate with suppliers according to their fields [8; 9]. To obtain a supply chain with a high level of flexibility and responsiveness, it is necessary to implement integration with suppliers from the organization [33]. The existence of integration with suppliers is considered to have more potential for improving operational performance than integration with consumers [36].

[34] and [18] in their research prove that an organization can find innovative solutions and can respond to every activity that involves the supply chain, although currently organizations that utilize integration activities with suppliers can still be said to be few [12]. Good integration with suppliers and consumers can have an impact on the speed, and frequency of innovation, and this will improve the innovation performance of an organization's supply chain [30]. Every organization feels the need to implement a supply chain integration strategy of every operational activity in a collaborative and coordinated manner so that supply chain innovation performance can be improved [4; 22; 27; 28; 9].

Supply chain innovation performance can affect satisfaction with supply chain results. [16] argue that good supply chain innovation performance in supplier organizations can encourage organizations to create and implement new processes, methods, products, and technologies [24], increasing responsiveness to consumer needs [2], boosting supplier success rates [23] and ultimately satisfaction with supply chain results can be achieved. Although previous research supports the effect of supply chain innovation performance on satisfaction with supply chain results, researchers suspect that there are important aspects that can strengthen satisfaction with supply chain results in addition to the effect of supply chain performance, namely supply chain innovativeness capability. Supply chain innovativeness capability is seen as important in increasing satisfaction with supply chain results because in supply chain innovativeness capability there is a value that suppliers can provide to buyers such as by offering innovative solutions to consumers as a result of good supply chain work from the organization [2; 31] and can reduce purchasing costs for consumers so that this can increase satisfaction with supply chain results [7]. Empirical research that has been carried out by [16] explains that supply chain innovativeness capability can also be an ideal moderating variable on the effect of supply chain innovation performance on satisfaction with supply chain results. Based on the analysis above, the researcher wants to test

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the consistency of the effect of supply chain innovation performance on satisfaction with supply chain results with supply chain innovativeness capability as moderating.

This study takes research on Micro, Small, and Medium Enterprises (MSMEs) of the trade sector in the Special Region of Yogyakarta for several reasons. First, the owner of the MSME is a person who acts as a business manager so that they play a role in controlling organizational management, supply chain management, and employee development, so this encourages researchers to be able to find out more about the ability of leaders to manage supply chains in the MSMEs they manage. Second, previous studies that examined the effect of supply chain innovation performance, supply chain innovativeness capability, and satisfaction with supply chain results have not examined the context of MSMEs in the trade sector in in the Special Region of Yogyakarta and only focused on research in the context of large organization [16] so that this research is interesting to do.

2 Literature Review

Supply Chain Innovation Performance

[5] revealed that supply chain innovation performance is the optimal result of both quality and quantity that reflects the output achieved and the magnitude of innovation from the supply chain network that exists within the organization. Organizations with high supply chain innovation performance illustrate that the organization has a reputable, productive, and collective track record of innovation results, especially in introducing new products, services, processes, or systems as a result of supply chain activities [16].

Satisfaction with Supply Chain Results

Satisfaction with supply chain results is associated with measures that have been achieved by the organization such as profits, market share, and sales growth that has been achieved by the organization as a result of the existence of a good supply chain from the organization [29]. Satisfaction with supply chain results can be seen in terms of increased operational performance measures for each activity carried out by the organization with organizational partners [29]. Satisfaction with supply chain results can be defined in two economic terms namely economic rewards that arise as a result of supply chain activities such as increased sales volume and profits and non-economic terms namely positive affective responses to psychosocial aspects such as good interactions, respect, and willingness to exchange ideas or ideas related to the supply chain [14]. The idea of satisfaction can be measured from an economic and non-economic perspective [14] through a meta-analysis, but in this study, the researcher did not examine this multidimensionality and only focused on using primary data to measure satisfaction with supply chain results.

Supply Chain Innovativeness Capability

Innovativeness capability is the ability to develop new products or services that meet market needs, apply appropriate process technology to produce new products, and respond to technological changes faced by competitors [32]. While supply chain innovativeness capability refers to the supply chain organization's ability to develop and implement new ideas, new processes, new products, or new services and this is a key dynamic capability that can drive organizational performance [17; 24].

Hypothesis Development

Positive Effect of Supply Chain Innovation Performance on Satisfaction with Supply Chain Result

The results of the innovations that have been carried out by the organization are evidenced by the increase in overall organizational performance [21]. Supply chain innovation performance reflects the result of an organization's supply chain innovation magnitude [19; 5]. Research by [16] proves that supply chain innovation performance has a positive effect on satisfaction with supply chain results. Furthermore, [16] reveal that high supply chain innovation performance describes a good reputation footprint of organizational innovation output. In addition, high supply chain innovation performance tends to be considered productive and collective in introducing new products, services, processes, or systems and can increase satisfaction with organizational supply chain results [16]. Based on the above analysis, the following hypothesis can be formulated:

H1: Supply chain innovation performance has a positive effect on satisfaction with supply chain results.

The Moderating Role of Supply Chain Innovativeness Capability on the Positive Effect of Supply Chain Innovation Performance on Satisfaction of Supply Chain Results

Supply chain innovation activities carried out by organizations can encourage consumer or buyer responses by providing new value that can improve the quality of the organization's supply chain [37]. High supply chain innovativeness capability can enhance satisfaction with supply chain results. Supplier can provide a buyer by offering innovative solutions that can extend the buyer’s capabilities [31], and can lower purchasing costs that the immediate downstream buyer may incur in the supply chain relationship [7], so this can increase satisfaction with supply chain results. [10] said that there is a positive effect on innovation and satisfaction.

The existence of a new response from consumers or buyers can also improve the performance of suppliers from upstream to downstream which in turn can improve the performance of supply chain innovation [38]. The effect of supply chain innovation performance on satisfaction with supply chain results will be stronger if it is supported by supply chain innovativeness capability. The existence of supply chain innovativeness capability

owned by the organization allows organizations to have the ability to adopt new products and bring up new technologies needed in the future this will increase the effect of supply chain innovation performance on satisfaction with supply chain results [25; 31]. Previous research from [16] also supports that supply chain innovativeness capability can strengthen the effect of supply chain innovation performance on satisfaction with supply chain results. Based on the above analysis, the following hypotheses can be formulated:

H2: Supply chain innovativeness capability moderates the positive effect of supply chain innovation performance on satisfaction with supply chain results such that increased supply chain innovativeness capability strengthen the positive effect of supply chain innovation performance on satisfaction with supply chain results.

Research Model

Figure 1 shows a research model to examine the positive effect of supply chain innovation performance on satisfaction with supply chain results with supply chain innovativeness capability as a moderating variable.

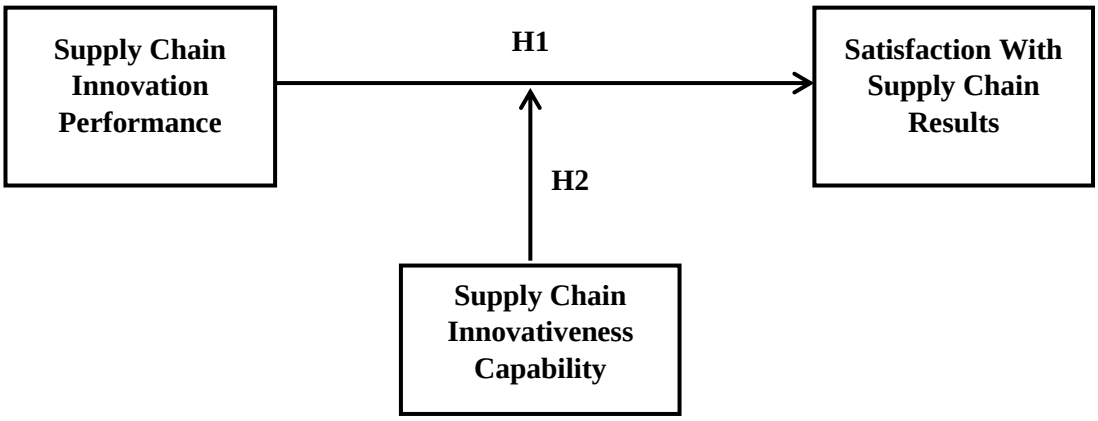

Figure 1. Research Model

3 Research Method

Population, Sample, and Sampling Method

The population used in this study is Micro, Small, and Medium Enterprises (MSMEs) of the trade sector in the Special Region of Yogyakarta. Given a large number of MSMEs of the trade sector in the Special Region of Yogyakarta, the study used sampling to be used as a population representation. The sampling technique was carried out by purposive sampling with the criteria determined in this study: First, MSMEs in the trade sector in the in the Special Region of Yogyakarta registered with the Cooperatives and Small and Medium Enterprises Service in Yogyakarta. Second, MSME leaders in the trade sector have attended training, workshops, or seminars related to supply chain management so that leaders understand the concept of supply chain management well when filling out research questionnaires. MSME leaders were asked to provide answers that describe supply chain innovation performance, supply chain innovativeness capability, and satisfaction with supply chain results. The supply chain innovation performance construct is measured using 3 statement indicators sourced from [5]. The supply chain innovativeness capability construct is measured by 3 statement indicators sourced from [24]. The construct of satisfaction with supply chain results is measured using 4 statement indicators sourced from [29].

Data Types and Sources

The type of data in this study is primary data sourced from questionnaires distributed to respondents, namely SMEs of the trading sector in the Special Region of Yogyakarta. The measurement scale that researchers use in measuring the indicators of each variable is the likert scale with details: strongly disagree score 1, disagree score 2, neutral score 3, agree score 4, and strongly agree score 5.

Data Analysis

Data analysis in this study uses the outer model measurement which consists of convergent validity and composite reliability. Convergent validity describes the relationship between variables and the indicators that are measured as seen from the loading factor value of each variable indicator. According to [20], an indicator can be said to be valid if it has a loading factor value greater than 0,7. Furthermore, composite reliability is used to measure the reliability value contained in each variable. A variable can be said to be reliable if it has a composite reliability value greater than 0,7 and cronbach's alpha value is more than 0,6 [15].

Hypothesis Testing

The data analysis technique uses the outer model measurement with discriminant validity and composite reliability. The method to determine the direct effect is bootstrap resampling. Estimate the indirect effect simultaneously using the Triangle PLS-SEM Model to determine the indirect effect in the presence of moderating

variables. The test is carried out using the t-statistic value to be compared with the t-table value of 1,96. If the t-statistic value is greater than the t-table value, then the hypothesis is declared accepted [14]. Hypothesis testing in this study used the moderating model developed by [3].

4 Result and Discussion

Figure 2 describes the structural model from the results of data analysis using SMART PLS version 3.0 software. Figure 2 shows the results of the variable test used to examine the moderating effect of supply chain innovativeness capability (variable code: SCIC) on the effect of supply chain innovation performance (variable code: SCIP) on the satisfaction of supply chain results (variable code: SSCR).

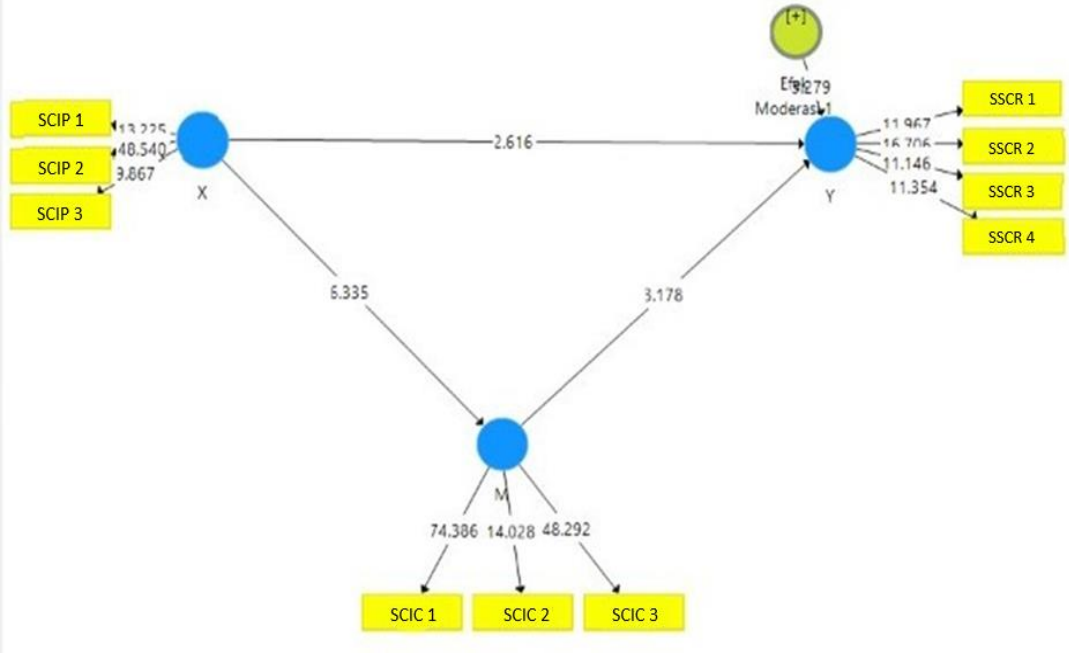

Figure 2. Structural Model Output

Table 1. Discriminant Validity

Variable	Indicator	SCIC	SCIP	SSCR
Satisfaction with Supply Chain Results (SSCR)	SSCR 1			0,861
	SSCR 2			0,833
	SSCR 3			0,861
	SSCR 4			0,855
Supply Chain Innovativeness Capability (SCIC)	SCIC 1	0,933		
	SCIC 2	0,960		
	SCIC 3	0,876		
	SCIP 1		0,912	

Supply Chain Innovation Performance (SCIP)	SCIP 2		0,939	
	SCIP 3		0,796	

Based on the results of table 1 above, it can be concluded that the indicators of each variable are declared valid because they have a loading factor value greater than 0,7. That is, the latent variable used in this study has good discriminant validity.

Table 2. Composite Reliability and Cronbach's Alpha

Variable	Composite Reliability	Cronbach's Alpha
Satisfaction with Supply Chain Results	0,992	0,889
Supply Chain Innovativeness Capability	0,946	0,914
Supply Chain Innovation Performance	0,915	0,860

Table 2 above shows the tabulation of the results of the reliability test. Based on these results, it can be concluded that each of the variables studied in this study is declared reliable because it has a composite reliability value greater than 0,7, and Cronbach's alpha value is greater than 0,6.

Tabel 3. Hypothesis Testing Result

	Original Sample (O)	**Average Sample (M)**	**Standard Deviation (STDEV)**	**T Statistic (|O/STDEV|)**	**P-Value**
Supply Chain Innovation Performance → Satisfaction with Supply Chain Results	0,294	0,296	0,112	2,616	0,009
Supply Chain Innovation Performance → Supply Chain Innovativeness Capability	0,551	0,556	0,087	6,335	0,000
Supply Chain Innovativeness Capability → Satisfaction with Supply Chain Results	0,343	0,360	0,108	3,178	0,002

Supply Chain Innovation Performance → Supply Chain Innovativeness Capability → Satisfaction with Supply Chain Results	-0,249	-0,236	0,076	3,279	0,001

Table 3 above shows the tabulation of the results of hypothesis testing. The first hypothesis says that supply chain innovation performance has a positive effect on satisfaction with supply chain results. The test results show the original sample value of 0,294 with a t-statistic value of 2,616 which is greater than 1,96. That is, there is a positive effect of supply chain innovation performance on satisfaction with supply chain results.

The results of the moderating analysis for supply chain innovativeness capability are described in table 3. Initially, a test of the effect of supply chain innovation performance on supply chain innovativeness capability was conducted. The test results show the original sample value is 0,551 with a t-statistic value of 6,335 which is greater than 1,96. That is, there is a positive effect of supply chain innovation performance on supply chain innovativeness capability. Then proceed with testing the effect of supply chain innovativeness capability on satisfaction with supply chain results. The test results show the original sample value of 0,343 with a t-statistic value of 3,178 which is greater than 1,96. That is, there is a positive influence of supply chain innovativeness capability on satisfaction with supply chain results. Furthermore, testing the supply chain innovativeness capability as a moderator on the effect of supply chain innovation performance on satisfaction with supply chain results shows the original sample value of -0,249 with a t-statistic value of 3,279 which is greater than 1,96. Based on the classification presented by [3], supply chain innovativeness capability does not moderate the positive effect of supply chain innovation performance on satisfaction with supply chain results.

4 Result and Discussion

Positive Effect of Supply Chain Innovation Performance on Satisfaction with Supply Chain Results

The results of testing the first hypothesis indicate that there is a positive influence on supply chain innovation performance on satisfaction with supply chain results. These results also support previous research by [16] which proves that supply chain innovation performance has a positive effect on satisfaction with supply chain results. Innovative supply chain activities such as the introduction of new products, new practices, and new ideas are the beginning for organizations to obtain maximum supply chain innovation performance to gain competitive advantage and provide satisfaction with supply chain results [16]. Furthermore, [16] reveal that high supply chain innovation performance indicates that innovation activities in the organization are running well and this can increase satisfaction with supply chain results.

Positive Effect of Supply Chain Innovation Performance on Satisfaction with Supply Chain Results with Supply Chain Innovativeness Capability as Moderator

The results of this study indicate that supply chain innovation performance has a positive effect on supply chain innovativeness capability and supply chain innovativeness capability has a positive effect on satisfaction with supply chain results. Good supply chain innovation performance proves that suppliers and buyers have value that can be used to improve their capabilities [38] so supply chain innovativeness capability increase. Supply chain innovativeness capability can encourage the innovative ability of organizations to offer combined benefits between suppliers and buyers via satisfying exchange relationships [29] so that this will increase satisfaction with supply chain results

The results of testing the second hypothesis indicate that supply chain innovativeness capability does not moderate the positive effect of supply chain innovation performance on satisfaction with supply chain results, which means that the second hypothesis is rejected. [35] revealed that the activities carried out by organizations in encouraging innovation capabilities depend on the business sector, organizational size, focus, resources, and the business environment in which the organization is located so that it can be concluded that the supply chain innovativeness capability owned by MSMEs in the trade sector cannot always strengthen the positive influence of innovation performance on supply chain innovation performance. In addition, [13] revealed that larger organizations have more innovative capabilities in carrying out supply chain activities compared to small or medium-sized organizations such as MSMEs in the trade sector because larger organizations have easier access to financing, already have fixed costs of innovation at higher sales volume, benefiting from its large economies of scale, and continuously developing research that supports an organization's supply chain innovation. The advantages possessed by these large organizations certainly strengthen supply chain innovativeness capability and this is not owned by the trade sector MSMEs so supply chain innovativeness capability weaken the positive influence of supply chain innovation performance on satisfaction with supply chain results.

5 Conclusion

Based on the results of the analysis and discussion section, it can be concluded that there is a positive effect on supply chain innovation performance on satisfaction with organizational supply chain results. This study proves that a good supply chain innovation performance in the MSME of trade sector in the Special Region of Yogyakarta will increase satisfaction with supply chain results. The results of the analysis show that there is no positive effect of supply chain innovation performance on satisfaction with supply chain results moderated by supply chain innovativeness capability. This proves that the supply chain innovativeness capability of the trade sector MSMEs in the Special Region of Yogyakarta weakens the influence of supply chain innovation performance on satisfaction with supply chain results.

Recommendation

Based on the results and tests that have been carried out, suggestions that can be given include:

1. Further research can use techniques other than purposive sampling, using different periods, taking a larger number of samples, and researching in other organizational contexts that have not been studied by previous researchers.
2. Subsequent research can use or add moderating variables other than those used in this study such as logistics flexibility [11] to produce diverse studies.

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