

Effect on the Performance of Supply Chain Integration

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Abstract—This study Aimed to analyze the effect of integration to improve supply chain performance. This research examine the influence supplier integration, the performance of the supply chain, integration of internal influence on the performance of the supply chain, customer integration influence on the performance of the supply chain. Object of this research is on SMEs Performers Production and Distribution of bran in Banten respondents about Integration Effect to improve supply chain performance. This study uses a quantitative method using descriptive research and causal research. Data from all three variables the program analyzes using Structural Equation Model (SEM) in the Software SmartPLS 2.0.m3 version. The population in this study is the owner or managers of SMEs Actor Production and Distribution of Bran in Banten Province. The Data will be used in this research is primary data by sending questionnaires to 100 owners or managers of SMEs Actor Production and Distribution Bran located in Banten Province. Based on the analysis of the data showing the effect of supplier integration, internal integration effect, and the effect of the integration of customer relationship positive and significant impact on supply chain performance.

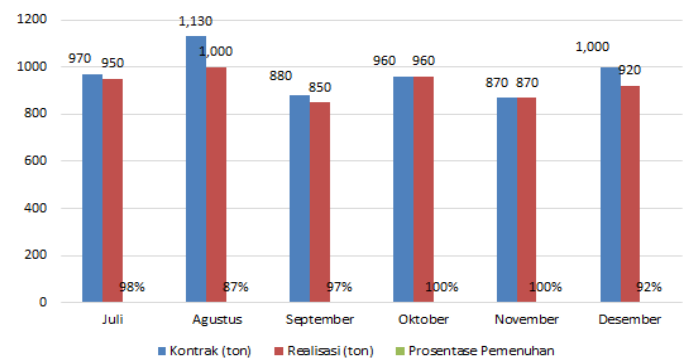
Keywords: *supplier integration, internal, customer, supply chain performance*

I. INTRODUCTION

Based on the data from the Ministry of Industry in 2013, the growth of the creative economy Reached 5.76%, higher than the national economic growth of around 5.74%, with the added value of Rp 641.8 trillion, or 7% from Gross Domestic Product (GDP) national, In terms of employment, this sector is Able to absorb the 11.8 million workers or 10.7% of the national labor force, Followed by a number of business units Reached 5.4 million units or 9.7% of total business units. The government aims to increase of the contribution of the creative economy to GDP from 7.1% in 2014 to 12% in 2019 with the terms of the GDP growth of at least 5-6% of the creative industries. In addition, the labor force participation rate of creative industry is also expected to reach 10.5 -11% of the total national workforce, and increase of state revenues reached 6.5% - 8% (Ministry of Industry of the Republic of Indonesia, 2015). Seeing the large number of units of economic actors and the ability to absorb labor, SMEs deserve attention.

But in reality during Reviews These SMEs received less attention, but in a variety of seminars and journal stated that the Small and Medium Enterprises (SMEs) is an important pillar in the development of the nation's economy. It can be understandable by the large number of Indonesian population with high levels of economy yet, so do economic enterprises in small and medium sized a realistic option.

Supply chain plot is PD Simple as a manufacturing company, can be Described where the raw materials from the suppliers of small items, namely the SMEs delivered to suppliers large then the raw material is delivered to the PD simple to be processed and then output in the form of fine bran and brewers will be distributed to the company big-company, as PT Cargill Indonesia, PT Agrico International, PT Cheil Jedang Superfeed, PT Sierad Produce, PT. Bintang Jaya protein, and others. The following PD Data supply contract fulfillment Raw Materials Simple in July to December 2018 can be seen in chart 1 below.



Source: Manufacturing Company (PD. Simplified) 2018.

Fig. 1. Data on fulfillment of raw material supply contracts.

From the above the data can be seen in the overall fulfillment of the contract of supply of raw materials in manufacturing companies (PD Simple) for the months of July to December 2018, in the which the fulfillment of the contract 100% only occurred in October and November, while in July, August, September, and December the supplier does not fulfill the contract. Here the management needs to be done. There was an error in the distribution of goods and services will make

the quality of goods and services Decreased, and this resulted in weakened competitiveness. To improve the distribution of goods and services, and sharing of information from upstream to downstream in the company, it would require a comprehensive, management.

The purpose of this study to Determine what variables has a significant influence on the performance of the supply chain by means of exploring the integration of network members to the principles of supply chain management by providing a model of the supply chain of successful performance improvement plan.

II. STUDIES THEORY

A. Integration

According to Rajagopal, supply chain management is the integration of key processes of a business from the end user through the suppliers who provide products, services and information that entering a value to consumers and other stakeholders [1]. Supply chain management aims to create value from a product through collaboration and business process integration in the supply chain [2].

1) *Supplier integration*: Gimenez and Ventura [3] defines integration as a supplier of unity and coherence of logistics activities across the boundaries of the company or organization that includes among suppliers to the manufacturer. Flynn et al. [4] mentions that the integration of suppliers is one important factor that Allows members to act in an integrated supply chain. This is done to maximize the value of the supply chain.

2) *Internal integration*: Internal integration is a supply chain practice Refers to the extent to the which companies reorganize strategies and processes within the organization to satisfy customer demand [5]. Likewise Disclosed by Wong, Boon-itt, and Wong [6] states that an internal roomates integration is a system of strategic cross-functional and the shared responsibility of all functions. in the internal integration, occurred collaboration across functions namely: product design, procurement, production, sales, and distribution that aims to meet customer needs [6].

3) *Integration of customer*: Customer integration is an integral part and an important component in the supply chain (eg Tan, Kannan, and Handheld [7]). According to Wong et al. [6], the integration of the customer is the unity and cohesion that involves collaboration and sharing of information between companies and their customers to improve customer satisfaction. In addition to collaborate and share information, According to Flynn et al. [4] unity and cohesion made between manufactures and customers include coordination on building strategies, practices, and inter-organizational processes.

4) *Supply chain performance*: The study of supply chain performance in the last decade it has developed quite rapidly. Much research has been conducted to identify the factors that

Affect the performance of the supply chain (such as Beamon [8]; Gunasekaran, Patel, and McGaughey [9]; Sundram et al. [10]; Ibrahim and Ogunyemi [11]; Abdallah, Obeidat, and Aqqad [12]; Seo, Dinwoodie, and Louie [13]). According to Hausman, the performance of the supply chain are the activities of the supply chain to meet the needs of the end consumer, Including the availability of goods, on time delivery, and supply capacity of the supply chain, the which is done very responsive [14].

III. RESEARCH METHODOLOGY

A. Population and Sample

The population in this study is owner / manager / owner and managerof Performers Production and Distribution Bran SMEs in Banten province by 100 respondents.

B. Data Source

The Data will be used in this research is primary data by sending questionnaires to owner / manager / owner and managerof Performers Production and Distribution Bran SMEs in Banten Province.

IV. RESULTS

A. Validity and reliability

1) *Validity test*: Test the construct validity in general can be measured using a score of loading parameter in the model of study (Rule of Thumbs> 0.7) and using the parameters AVE (Average Variance Extracted) with a score of> 0.5, Commuality> 0.5, and R²and redundancy. If the score of loading <0.5, These indicators can be removed from construct for this indicator is not contained to construct representative. However, if the loading scores were between 0.5 to 0.7, then you should not need to be removed if the indicator has a score of such loading along the AVE and the indicator Commuality> 0.5 [15]. Here is the output of the which Showed a score of loading.

Average Variance Extracted (AVE)					
	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (O...	P Values
Integrasi Internal	0.760	0.761	0.043	17.841	0.000
Integrasi Pelanggan	0.703	0.704	0.036	19.744	0.000
Integrasi Pemasok	0.575	0.575	0.044	12.938	0.000
Kinerja Rantai Pasok	0.754	0.756	0.039	19.499	0.000

Fig. 2. Discriminant validity.

Figure above shows that the construct has a validity value is good to know supplier integration, internal integration, customer integration And Supply Chain Performance, is said to be valid.

2) *Test reliability*: Reliability test can be seen from the value of Cronbach's alpha and composite reliability is a statistical technique used to measure the internal consistency

reliability test psychometric instrument or data. But the reliability of composite measure the true value of a variable reliability, while Cronbach's alpha reliability cancel measures the value of a variable so that the reliability of composite value is always higher than the value of Cronbach's alpha.

Composite Reliability					
	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (JO...	P Values
Integrasi Internal	0.941	0.940	0.013	71.115	0.000
Integrasi Pelanggan	0.922	0.922	0.013	73.728	0.000
Integrasi Pemasok	0.802	0.800	0.030	26.840	0.000
Kinerja Rantai Pasok	0.925	0.925	0.015	62.247	0.000

Fig. 3. Composite reliability.

Figure 3 can be seen every constructs or latent variables that have a composite value reliability above 0.7 indicating that the internal consistency of the exogenous variables with the endogenous variable has a good reliability.

B. Data Analysis

1) *Assessing outer model (measurement model):* Assessing outer models in PLS there are three criteria, one of the which is Viewed Convergent validity, whereas for the other two criteria items, namely Discriminant validity in the form of the square root of average variance extracted (AVE) and the Composite Reliability been Discussed Earlier at the time of testing the quality of the data.

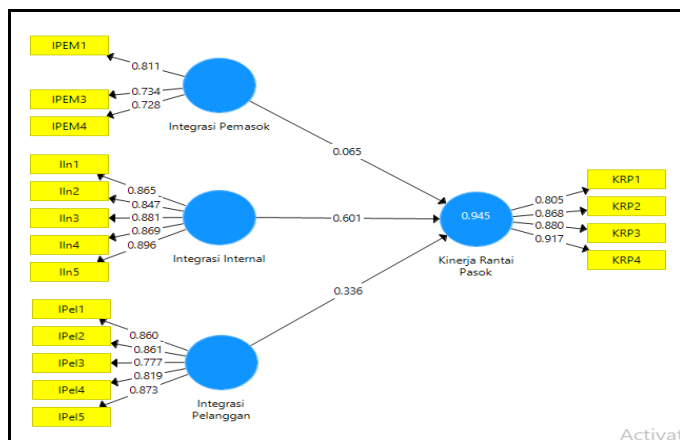


Fig. 4. Model structural partial least square.

2) *Outer model research variable:* Results of processing by using the Smart PLS models shows the outer value or correlation with the overall variable already meet Convergent validity. It can also be seen in the image above, where the value of t-statistic of all the indicators are qualified on the adequacy of the models or Discriminant validity.

C. Hypothesis Testing via Inner Model

Tests on the structural models was conducted to see the relationship between the constructs, R-square value and significance of the research models.

Path Coefficients					
	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (JO...	P Values
Integrasi Internal -> Kinerja Rantai Pasok	0.601	0.598	0.074	8.079	0.000
Integrasi Pelanggan -> Kinerja Rantai Pasok	0.336	0.340	0.071	4.755	0.000
Integrasi Pemasok -> Kinerja Rantai Pasok	0.065	0.064	0.097	1.737	0.083

Fig. 5. Result for inner weight.

Based on Figure 5 shows the relationship of internal integration with supply chain performance on a positive and significant coefficient = 0601 with t = 8079 and (p value = 0.000) at t = 1.96, Customer integration with supply chain performance on a positive and significant coefficient = 0336 with t = 4,755 and (p value; = 0.000) at t = 1.96. Supplier integration with supply chain performance with positive coefficient = 0.062 and t = 1.737 (p value; = 0.083) at t = 1.29, Shows that the integration of suppliers positive and significant effect on the level of commitment probability 10%.

R Square					
	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (JO...	P Values
Kinerja Rantai ...	0.945	0.948	0.013	74.214	0.000

Fig. 6. R-Square.

The figure above shows the R-square value of supply chain performance 0945 yang means that 94.5% of the variation changes in Supply Chain performance is explained by the variable supplier integration, internal integration, integration of customers and 6:55% is explained by other variables.

D. Discussion

1) *The effect of supplier integration of supply chain performance:* Results of analysis shows the relationship of internal integration with supply chain performance positively and Significantly, This means that the better integration between suppliers will increase of the performance of the supply chain. The results of the research Sesuai by Lee et al. [16] found that the integration of suppliers have a positive influence on the performance of the company. Ibrahim and Ogunyemi [11] in research conducted in the textile and clothing industry Also found that the positive effect on supplier integration of supply chain performance. Seo et al. [13] in research conducted in Korea was Also found that the positive effect on supplier integration of supply chain performance.

2) *The effect of integration of internal supply chain performance against:* Results of analysis shows the relationship of internal integration with supply chain performance positively and Significantly This means that the better the internal integration of suppliers will improve supply chain performance. The results of the research consistent Huo [17] the company will have difficulty collaborating with members of the supply chain if there is no cooperation and

integration in various internal functions of the company. Narasimhan and Kim [18], Gimenez and Ventura [3], Droge et al. [19] and Abdallah et al. [12] found that the positive effect on the internal integration of supply chain performance.

3) *The effect of customer integration supply chain performance against:* Results of analysis shows the relationship of internal integration with supply chain performance is positive and significant. This means that the better customer integration will Enhance the performance of the supply chain. Reviews These results are consistent with research Wong et al. [6] companies are implementing integration with good customer will be Able to understand the expectations and market opportunities. Narasimhan and Kim [17] found that the integration of the customer is Able to improve the performance of the company. Besides being-able to improve the performance of the company, customer integration is also able to improve the performance of the supply chain [3,19]. The third addition to the study, other studies (such as Lee et al. [16]; Pamela and Pietro [20]).

V. CONCLUSION

Based on the test results of the analysis indicate that the integration of suppliers, internal integration and customer integration as an exogenous variables and significant positive effect on the performance of the supply chain as the endogenous variable. that is to say the higher integration among members of the supply chain can be pushed to give better performance of the supply chain, the higher integration among members of the supply chain Also could lead to a growing supply chain performance.

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