

Cooperation and Information Sharing Increase Supply Chain Performance Broiler Egg Traders in Regency of Pandeglang Banten

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DOI: <http://dx.doi.org/10.35474/ibarj.v5i1.161>

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Info Articles

History Articles:

Submitted 5 November 2020

Revised 24 December 2020

Accepted 16 January 2021

Keywords:

cooperation, sharing information, supply chain performance

Abstract

This study aimed to analyze the cooperation and sharing of information to improve supply chain performance. This research examine the influence cooperation the performance of the supply chain, the impact of information sharing on the performance of the supply chain. Object of this research is Broiler egg traders in Regency of Pandeglang Banten. This study uses a quantitative method using descriptive research and causal research. Data from all three variables was analyzed using the program Structural Equation Model (SEM) in the Software Smart PLS 3.0. m3 version. The data will be used in this research is primary data, by sending questionnaires to 100 respondents Broiler eggs. Based on the results of data analysis can be concluded that the influence of cooperation and information sharing relationships influence a positive and significant influence on supply chain performance.

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p-ISSN 2550-0368

e-ISSN 2549-0303

INTRODUCTION

According Heizer and Render, supply chain management application that follows a concept that is correct can make an impact by increasing the competitive advantage of the company's products and also in the supply chain system that was built by the company itself. It is important that make the supply chain management to be effective is to make the supplier as a partner in the strategy of a company to meet an uncertain market (Munizu, 2017) In a highly competitive environment today, losing customers is very expensive. Therefore, the company has been working to develop long-term relationships with their customers to create customer loyalty and improve profitability. Relationship quality problems have emerged as a very important thing. When the quality is good then the relationship would arguably be successful and vice versa (Athanasopoulou, 2009), Researchers have mixed views on how the cooperation relations between partners affect the operational performance of companies in the supply chain, which can determine the success of the industry in services, manufacturing and retail (Bandara, Leckie, Lobo, & Hewege, 2017), Nowadays, more and more important for companies to assess and manage partnerships buyers and their suppliers are positioned to provide value to the customer end. If the cooperative relationship that developed with beneficial supply chain partners and the benefits it generates different operating performance when compared with competitors, competitive advantages can be generated. However, it is also important to assess whether the resulting profits to be sustainable or not (Whipple, Lynch, & Nyaga, 2010). According to Schulze et al., The concept of extended supply chain management approach to the relationship and the need for good cooperation between the stages in the supply chain and quality clear that cooperation is increasingly becoming the center of attention at this time (Komunikasi & Suplier, 2013). One production that uses supply chain system that relies on cooperation among partners are traders

of chicken eggs, a food that is often consumed by people in Indonesia, especially in Pandeglang Regency, Banten Province. Not all regions in Banten Province can produce and fulfill the needs of purebred eggs for their respective regions, and one of them is Kubeglang Regency. Therefore, supply of broiler eggs in several regions in Banten Province is still supplied from Tangerang Regency, which is one of the few regions that produce the largest broiler eggs in Banten Province. Based on data from BPS (Statistics Indonesia) of Banten Province, poultry egg production by Regency / City and livestock types in Banten Province in 2019, Tangerang Regency produces the most broiler eggs, Serang City is in second and Serang Regency is in third. In producing broiler eggs there are many factors that can affect production, including starting from limited land, season, disease, regional economy and other factors, so that broiler egg production can be said to rise or decrease and whether it is able to meet market needs or not. Pandeglang Regency is one of the regions in Banten Province whose supply of broiler eggs has not been fulfilled, resulting in an increase in the price of broiler eggs in a number of markets in Pandeglang Regency.

Study of Literatur

Heizer and Render explained that supply chain management is the coordination of the entire supply chain, starting from raw materials and ending with customer satisfaction. Then Martin Christopher said that supply chain management is the management of the relationship from upstream to downstream or from the supplier to the consumer to provide more value to customers and reduce overall supply chain costs (Ilmiyati & Munawaroh, 2016). Another understanding of supply chain management is described in the research Simchi-Levi explains that supply chain management is the overall set of measures to integrate suppliers, manufacturing, warehouse, and the market subsequently leading to produce goods at a cost as possible, in time most appropriate,

Cooperation

Referring to the research conducted by Fynes, the variables of cooperation is divided into four dimensions: trust, commitment, communication and adaptation (Tian, 2018). Within the company, the development of a close relationship with consumers is a key area in the company activities. Close cooperation with consumers have broad benefits for the company. First, the close cooperation can reduce costs. Then close cooperation with partners can lead to improve the company's competitive ability. Companies are advised to take care of the quality of cooperation between firms and all of the entities involved in the business environment, it can lead to the growth of efficiency (Lee et al 2009.pdf, n.d.), (Ratajczak-Mrozek & Małys, 2012). There are several dimensions that can assess the quality of relationships such as trust, honesty establish quality partnerships (Aziz & Dwiyanto, 2017). Cempakasari explained that cooperation with a reliable supplier is expected to generate understanding and a good understanding of the needs and the needs of those involved dalam supply chain (Aziz & Dwiyanto, 2017).

Information Sharing

According Kembro and Selviaridis, information sharing can also improve the responsiveness of the supply chain process, has resulted in a more dynamic supply chain and reduce costs for the storage of raw materials and final products (Aziz & Dwiyanto, 2017). According to Moberg et al., Partners in the supply chain to exchange information on a regular basis can work as a single unit that is able to respond quickly to market changes. Then, the quality of information sharing that is well managed in the company's internal and intercompany have a direct impact on improving the performance of the supply chain. According Sundram et al., The level of information sharing with partners is an essential element of a supply chain that reflects the quality of information shared.

Performance Supply Chain

Performance is an overview of the level of achievement of the implementation of tasks within the organization, in an effort to realize the objectives, goals, mission and vision of the organization (Darmajaya, 2017). 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, which is done very responsive (Mufaqih, Indarti, Ciptono, & Kartikasari, 2017), According Tungjitjatur, et al., Companies that give emphasis on the operational performance of the company will meet all the needs of business, and this is a good knowledge about the performance of the supply chain and is able to improve the Company's overall business (Ronald Alfanto 2015.pdf, n.d.).

HYPOTHESIS DEVELOPMENT

Effect of Cooperation on Performance Supply Chain

Cooperation between the two companies in the supply chain is able to be the best way to communicate matters concerning the business processes do together so that there is in the overall process of the supply chain running (Tian, 2018). According to Anderson and Naurus, basically a form of cooperation willingness of both parties that the company as a supplier to the retailer as a buyer to make a coordinated effort to get better results (Sulistiyono, 2014). By Indrajit and Djokopranoto, cooperation is a best alternative to optimally manage the supply chain. This is due among organizations or companies that are in a supply chain management network in definite need of smoothness and accuracy information systems, as well as the trust between organizations or companies supplying goods and services. All aspects of the above will not be achieved if cooperation is not going well (Aziz & Dwiyanto, 2017). Based on research conducted by (Tian, 2018) which states that the relationship of cooperation in the supply chain

have a positive influence on performance. So based on the above explanation, it can be hypothesized:

H1: Cooperation positive effect on the performance of the supply chain

Influence of Information Sharing on Performance Supply Chain

According to Lee and Mentzer, sharing information is the basis for effective coordination in the supply chain. By sharing information, the availability of the data in a timely manner will be ensured so that the data can be distributed to all actors in the supply chain. Besides, the quality of information is also taken into account as required to increase confidence among the members in the supply chain and will also have an impact on production forecasting (Wahyuniardi, Syarwani, & Anggani, 2017). According to Yu et al., Exchange of information in the supply chain can help companies to improve inventory levels and reduce costs (Aziz & Dwiyanto, 2017). Sharing information between organizations become an important feature as a factor to create value migrating from physical and financial assets to intangible assets. Many studies show that sharing information between members of the supply chain and in the organization significant impact on the effectiveness of the supply chain. In particular, information sharing among supply chain members, can improve the performance of supply chain, by eliminating the potential for variation of the exchange of information. Even facilitating information sharing supply chain members to address concerns about losing the strength to cope with competitors.

H2: Information sharing positive effect on the performance of the supply chain

RESEARCH METHODOLOGY

In this study presents the research that is the causal relationship is the determination of the degree of influence that can also be used to make predictions. Researchers can identify a fact or event as a variable that is affected (the

dependent variable) and conduct research on the variables that influence (independent variable).

Research Variables

The variables in this study consisted of;

- ❖ Variable cooperation dimension measured by reference to, discuss sales planning, cooperation determined based on real yang, improve ongoing relationships (Aziz & Dwiyanto, 2017), and communications (Tian, 2018).
- ❖ Variable share information measured by reference to the dimensions, toinaccuracy of time, the accuracy, adequacy (Pandey, Garg, & Shankar, 2010). and share information in (Ariani & Dwiyanto, 2013).
- ❖ Variable performance supply chain is measured by reference to the dimensions, reliability, flexibility, cost (Munizu, 2017), and responsiveness (Wahyuniardi et al., 2017).

Population and Sample

There are 14 traditional markets in Pandeglang Regency, which is estimated that in each market there are averaged around 36 traders multiplied by the number of markets. The population in this study was 504 traders with an alpha level of 9%. Then the number of samples obtained was 100 respondents.

Hypothesis Testing

The data collection is done with the approach of Structural Equation Model (SEM) by using software Partial Least Square (PLS). PLS is a structural equation modeling (SEM) based component or a variant (variance) and the alternative approach that shifts a covariance-based SEM approaches be based variants. Covariance-based SEM generally test the causality / sedangkan theory is more predictive PLS model. PLS is a powerful analytical method Geisser & stone (Andika & Darmanto, 2020).

DISCUSSION AND ANALYSIS

Validity test used to measure whether a valid or invalid questionnaire. A questionnaire considered valid if the questions on the questionnaire were able to reveal something that will be measured by the questionnaire. Testing the validity of the data in this research is to use a software SmartPLS with Outer Model, namely Convergent validity seen the value of square root of average variance extracted (AVE) of each construct where the value must be greater than 0.5.

Tabel 1. Discriminant Validity

Average Variance Extracted	Validity
Cooperation (x1)	0,801
Sharing Information (x2)	0,792
Supply Chain Performance (Y)	0,707

Sources: Primary data is processed by SmartPLS (2021)

Table 1 describes the value of the AVE and the root of AVE of the constructs cooperation, information sharing, and performance supply chain. It can be seen that each constructs (variables) have a value above 0.5 AVE. This suggests that any such constructs have good validity value of each indicator or the questionnaire used to determine which variables cooperation, information sharing, and performance supply chain can be said to be valid.

Reliability test is intended to measure the internal consistency of a questionnaire which is an indicator of variables or constructs. A questionnaire said to be reliable if someone answers to a statement produce the same answer over time. Reliability testing data in this study using software SmartPLS criteria Composite reliability test. A Composite Data said to be reliable if the reliability is greater than 0.7 (Andika & Darmanto, 2020).

From Table 2 it can be seen every constructs or latent variables that have a composite value reliability above 0.7 indicating that the internal consistency of the independent variable (cooperation, shaing information) with

the dependent variable (performance supply chain) have good reliability.

Table 2. Composite Reliability

Composite	Reliability
Cooperation (X1)	0,923
Sharing Information (X2)	0,904
Supply Chain Performance (Y)	0,918

Sources: Primary data is processed by SmartPLS (2021)

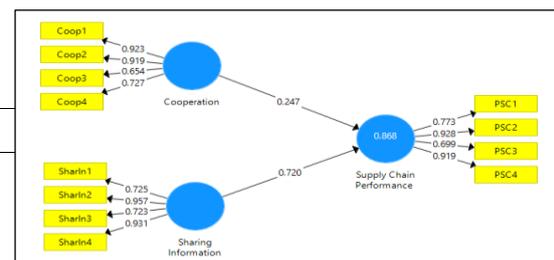


Figure 1. Output PLS (Loading Factor) Output

Data Analysis

Assessing Outer Model (Measurement Model)

Model of measurement conducted to examine the relationship (value loading) between the indicator with the constructs (latent variables). In assessing the outer model in PLS there are three criteria, one of which is viewed convergent validity, whereas for the other two criteria, namely Discriminant validity in the form of square root of average variance extracted (AVE) and the composite reliability been discussed earlier at the time of testing the quality of the data. For convergent validity of the measurement model with a reflexive indicators were assessed based on the correlation between the item score / component score is estimated by software SmartPLS. The size of individual reflexive said to be high if more than 0.7 correlated with constructs (latent variables) were measured to study the early stages of development, the scale of measurement of the value of the loading of 0.5 to 0.6 is considered adequate. Here can be seen the overall correlation of each of the variables in Figure 1, which is a drawing representing influences cooperation, information sharing and performance supply chain.

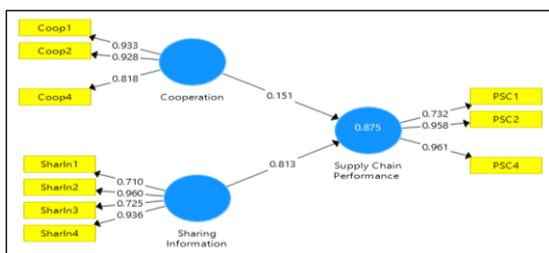


Figure 2. PLS Output (Statistical Test)

Here can be seen the overall correlation of each of the variables in Figure 2 is a drawing representing the influence of the independent variable (cooperation, sharing information) and the dependent variable (performance supply chain).

4.3 Hypothesis Testing via Inner Model

Inner models by (Andika & Darmanto, 2020) is a picture of the relationship between the latent variables are based on a substantive theory Inner models sometimes referred to as the inner relations, structural model and the substantive theory. Testing inner structural model or models made to look at the relationship between constructs, value and R-square significance of the research model. The inner workings of the model in this study are as follows:

Tabel 3. Path Coefficient

Relationship between variables	Original Sample (O)	t-statistics	Ho	Conclusion
Cooperation (X1) on Supply Chain Sharing Information (X2) to Supply	0.151	2.776	Accept	Significance
		16.962	Accept	Significance

Sources: Primary data is processed by SmartPLS (2021)

In assessing models with PLS begins to see R-Square for each dependent ditunjukkan latent variables in Table 4.

Table 4. R-Square

R-Square	R-Square Adjusted
Supply Chain Performance (Y)	0,872

Sources: Primary data is processed by SmartPLS (2021)

Table 4 shows the R-square value supply chain performance 0,872. The higher the R-square, the greater the independent variables can explain the dependent variable, so the better the structural equation.

DISCUSSION

The influence of Cooperation Against Supply Chain Performance

Based on Table 3 shows that the relationship Cooperation (Coop) with performance supply chain (PSC) positive coefficient = 0.151 with $t = 2,776$ and (p value = 0.006) at $t = 1.96$, shows that the cooperation (Coop) positive and significant impact on the performance of supply chain (PSC). Results obtained through data processing, it can be seen that the cooperation made by Broiler egg traders in Pandeglang Regency Banten has a positive effect on the performance of the supply chain. With the cooperation-oriented discussion on sales planning, co-operation determined based on real yang, peenhancing the ongoing relationship and improve communication with suppliers will improve supply chain performance. Based on the phenomenon exists, the good cooperation can reduce the cost of shipping. Secondly, the ongoing cooperation with emphasis kualitaas oriented material will enhance the ability to compete and customer satisfaction. Communication oriented sustainable cooperation will affect the attainment of the objectives of the activity in the supply chain. (Lai, Ngai, & Cheng, n.d.) explains that the purpose of the company can be achieved by improving the effectiveness and efficiency. Then (Banomyong & Supatn, 2011) explains that these activities are able to provide customer satisfaction over any request that

would increase corporate profits and high competitiveness. The results are consistent with research conducted by (Tian, 2018) conducted in several companies engaged in high-tech industries in the Yangtze River Delta, Pearl River Delta Region and the Region of Wuhan. This study concluded that the relationship of cooperation in the supply chain affect the performance of the supply chain. The study concluded that the importance of enhancing cooperation relations with suppliers in an effort to achieve company goals.

The influence of Information Sharing of Supply Chain Performance Against

Based on Table 4.4 shows that the relationship sharing information (SharIn) with performance supply chain (PSC) positive coefficient = 0.813 with $t = 16.962$ and (p value = 0.000) at $t = 1.96$, indicates that the Information sharing (SharIn) positive and significant impact on the performance of supply chain (PSC). The results of data processing, information sharing is done among partners Broiler egg traders in Pandeglang Regency Banten have a significant effect on the performance of the supply chain. By doing the speed, accuracy, openness and sharing of information production. In concept (Moberg, Cutler, Gross, & Speh, 2002) explains that the process of exchanging information regularly conducted in partnership with supply chain will affect the ability to respond to market changes well. By managing both internal and antarmitra information in the supply chain, have a direct impact on improving the performance of the supply chain. The level of information sharing in the supply chain is essential. But the impact on the supply chain depends on what information is shared, when and where information can be shared, and with whom the information is shared (V. P. K. Sundram, Ibrahim, & Govindaraju, 2011). The level of information sharing with partners is an essential element of the supply chain that reflects the quantity of information that was shared (C. J. Sundram, 2011). The more information provided, the more efficient and effective communication is also

built in the supply chain (Li & Lin, 2006). Efforts to share information and make information accessible to all parties in the supply chain, enabling decisions are made more quickly and accurately. This in turn will provide a source of competitive advantage for companies (Moberg et al., 2002). Efforts to share information and make information accessible to all parties in the supply chain, enabling decisions are made more quickly and accurately. This in turn will provide a source of competitive advantage for companies (Moberg et al., 2002). Efforts to share information and make information accessible to all parties in the supply chain, enabling decisions are made more quickly and accurately. This in turn will provide a source of competitive advantage for companies (Moberg et al., 2002).

Conclusion, Limitations and Suggestions

The result of research on cooperation and sharing of information with partners in the supply chain, Broiler egg traders in Regency of Pandeglang Banten needs to be done to consider the establishment of quality in order to build a sustainable partnership. Cooperation is also necessary to pay attention to the quality of communication and help reduce the risk of misunderstandings and conflicts in supply chain activities. These things will be able to improve the effectiveness and efficiency in the supply chain. Likewise antaramitra information sharing, it should be done by considering the speed, accuracy, openness and sharing of information production, it will be able to improve the quality in the production process. The description is evidenced by the results of data processing which stated that cooperation and information sharing significantly affect the performance of the supply chain.

Based on result of processing data derived from questionnaires that reflect real circumstances or conditions on the ground. But this result is not only based on real conditions only, but there are some limitations such as variable-study only examined cooperation, sharing information, and performance of supply chain management, as well as the seriousness of

the respondents in filling out questionnaires that are part of the weakness of data collection using techniques deployment questionnaires that have an impact on the analysis results are less good.

The result of research is expected to improve the quality of among partners cooperation in the supply chain by means of continuous cooperation and maintain communication with good quality, so that Broiler egg traders in Regency of Pandeglang Banten still be able to make use of information sharing and communication tools as a support for the information conveyed properly.

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