Model of Cooperative Performance Influence Supply Chain Management in the Field of Food Production Cooperatives in West Bandung Regency

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Abstract. The performance of Indonesian cooperatives is still low as a result of the low contribution of cooperatives to GDP. The poor performance of cooperatives is caused by limited product management capacity. In addition, the problem of cooperatives is the limitations imposed by the technology itself. From suppliers to consumers, product damage. Through strategic cooperative food production operations in West Bandung Regency, this study aims to influence supply chain management on cooperative performance. The purpose of this research is to produce a food cooperative. Cooperative food production in West Bandung Regency is the aim of this study. The partial least squares approach is used in this study. Through operations strategy, Supply Chain Management has a positive impact on cooperative performance. Strong partnerships with suppliers help keep in touch with customers.

Keywords: Performance · cooperative · food production

1 Introduction

Food security is a strategic issue for the Indonesian government to improve people's welfare. Food is a basic need that must be met by every Indonesian family to improve their health and survival. With a population of more than 200 million people, Indonesia needs a large supply of food.

Cooperatives can be used to increase food production as a forum for the community to increase economic resilience. Farmers can manage through cooperatives and transfer their knowledge on the development of agricultural techniques. This is because cooperatives have the potential to improve food security in the community [1].

The performance of cooperatives in West Java is still not good, with the proportion of inactive cooperatives reaching 30% of all cooperatives in West Java. The high number of inactive cooperatives is due to their poor performance and poor ability to manage their business areas. Cooperatives face open competition that is very difficult to compete with, mainly due to the lack of management capacity in managing the cooperative organizations they manage. Thus, it is often not possible to deactivate existing cooperatives [2].

Supply chain networks can improve cooperative performance with the right operational strategy. This is because proper distribution improves the marketing performance of the organization and the supplier network affects the operational efficiency of the cooperative. A cooperative's performance is measured by its marketing and financial performance and is strongly influenced by its supply chain management practices. The smooth implementation of supply chain management is strongly correlated with collaboration performance. In addition, operational strategy is the bridge between supply chain management and collaborative performance [3].

To effectively use supply chain management as a competitive weapon, it is necessary to seamlessly integrate the flow of information and materials throughout the supply chain.[4]for r agricultural products to be delivered to customers in a timely manner, an efficient supply chain requires a smooth flow of information and materials. In West Bandung Province, 4,444 food production cooperatives are involved in agriculture, animal husbandry, plantations, and fishing. There are a total of 157 cooperatives, including 133 agricultural cooperatives, 3 livestock cooperatives, 118 plantations cooperatives, and fisheries cooperatives, according to recorded data. The poor performance of cooperatives is caused by the low use of appropriate technology, farmers traditionally control livestock production, the quality of milk produced is poor, and most of the farmers are small farmers who produce less than 3 cows. Livestock production capacity is very small, so the burden of fixed costs in the production process is high. Another problem with cattle vulnerability is the need for rapid product distribution [5].

Many agricultural cooperatives also experience mismatches between supply and demand for agricultural products. Prices are often low because supplies of agricultural products flood the market, and farmers are disadvantaged by low prices due to a lack of information and an oversupply of products. In addition, farmers are late in planting due to a lack of fertilizer, especially during the growing season.

Low quality and low price of feed and technology. One of them is because of an inefficient supply chain. Many farmers and shippers need to be distributed quickly, which needs to be efficient because price and quality will not be competitive in the market when problems arise [6].

Based on the above background, researchers are interested in researching the impact of supply chain management through operations on the strategic performance of cooperatives in the food production sector of West Bandung Province.

Based on the research background. The formulation of the problem in this study is as follows. How supply chain management affects cooperative performance through cooperative management strategies in the food production sector of West Bandung province.

2   Literature Review

The supply chain has many definitions that describe the process of making a product, from receiving raw materials, through the in-house production process, and to the delivery of ordered products. [7] The supply chain is part of the whole that includes the fulfillment of customer orders directly or indirectly. The supply chain is not only manufacturers and suppliers, but also operators, warehouses, retailers, and other support for the customers themselves to fulfill customer orders.

A supply chain, as described in [8] is a network originating from suppliers, manufacturers, and distributors to deliver products to end users. A supply chain is a network of suppliers, manufacturers, distributors, retailers, and consumers. Supply chain management is the management of enterprise materials and logistics and the integration of enterprises and suppliers in obtaining effective and efficient product delivery to consumers through the supply chain to provide greater value to customers.

Operational strategy is distinguished by content and process [9]. The content presents a strategic problem that management needs to solve. Methods and procedures used to reflect the decision-making process for developing operational strategies. Therefore, operational strategy is a decision-making method related to the development of operational strategies to be able to solve various types of problems related to operational strategies [10].

Management strategy focuses on transformation across the enterprise, not on individuals [11]. In the short term, three general strategies were identified that focused on operating costs, producing quality products, and implementing the latest technologies and processes [12].

An operational strategy that aims to gain a competitive advantage in terms of product quality, price, flexibility, and delivery. To achieve these objectives, operational strategies for these objectives are determined to be adequately achieved. Define operational strategy, including Slack and Lewis (2011): capacity strategy supply network including purchasing and logistics strategy, process technology strategy, development and organization with performance, both employee performance and company performance. Performance shows the results achieved based on the skills sacrificed during the period. As well as the performance results achieved by individuals/companies so far show their performance over a certain period.

Performance is a formal effort by a company to evaluate the effectiveness and efficiency of its activities over a certain period. To determine the extent to which a company achieves the results that have been achieved, proposed in his work that performance measurement can be done through non-financial performance and financial performance. Financial performance can be measured in terms of sales margin, sales growth, increase in labor productivity, and increase in production costs. Non-financial performance, on the other hand, can be measured by product and service quality customer satisfaction, customer growth, employee satisfaction, and company reputation [13].

The final results of the work done by national, private, and civil society institutions demonstrate the significance of performance management and indicate that one of the desired aspects of improving management performance measurement is adaptability and dependability. As a result, issues related to the implementation of cooperative management cannot be separated from those related to the interests of members as owners and customers, such as member promotion, member success, and successful cooperative development [14].

Supply chain management potential (X) serves as the study's independent variable, and operational strategy (Y1) and collaboration performance (Y2) serve as potential dependent variables. The internal and external models that make up the PLS portion of the SEM path analysis are depicted in Fig. 1. The relationship between the independent latent variable (X) and the dependent variables (Y1 and Y2) is depicted by an arrow in

the model. A relationship outside of the model is indicated by the indicators and arrows between the dependent and independent latent variables. The external model is made up of two measurements: the reflection model and the reference model.Enter the Y1 and X latent variables.reflection measurements. An arrow appears on the latent variable associated with the indicator. The variable Y2 has been described as a formative measure of the variable indicator arrow. Errors occur when the potential independent variable affects the potential dependent variable. PLS-SEM trajectory measurement using three SMART PLS program [15].

PLS-SEM describes the relationship between latent variables in the model and the relationship between latent variables in the model and external measures. After estimating the PLS-SEM model, the next step is to evaluate how well the model is performing based on the sample data obtained. Structural model evaluation based on nonparametric bootstrap and blind evaluation. There are two types of PLS-SEM measurement evaluation models: measurement models (outer models) and structural models (internal models).

Reflective External Rating Model External Rating Model used to evaluate indicator variables. There are two models for measuring latent variables in PLS-SEM, namely the reflection model and the formation model. Evaluation of reflex models consists of indicator reliability. Discriminatory validity. Internal Consistency, Combined Reliability, Convergent Validity, and Internal or structural models describe the relationship between latent variables based on entity theory. The design of the latent variable model is based on the research hypothesis.
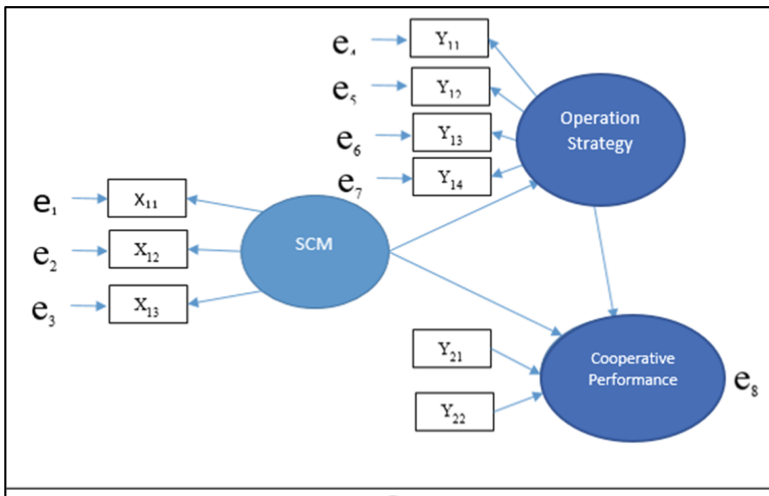

Fig. 1. Model PLS-SEM Analysis

3   Results and Discussion

The primary objective of this research is to determine how cooperative management strategies affect cooperative performance in the food production sector of West Bandung Province through supply chain management. The authors model this issue with SmartPLS.

The PLS, Bootstrap, and Blindfold algorithms are the next step in the modeling process. Using the PLS algorithm and bootstrap, we calculated path coefficients, R values, t-statistical values, and loading factor values for all study sizes to assess the study model's convergence and discriminant validity. The results of the PLS algorithm and bootstrapping process may be seen in Figs. 2 and 3.
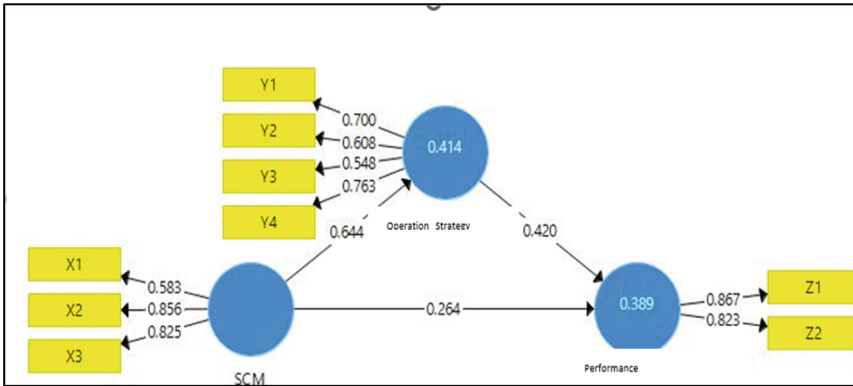
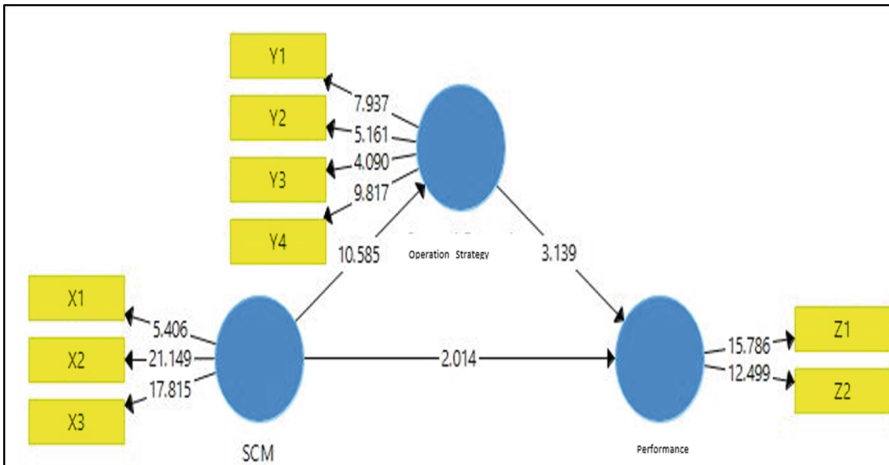**Fig. 2.** PLS Process Alogaritm (Source: Questionnaire, reprocessed 2022)

Fig. 3. Process Bootstrapping (Source: Questionnaire, processed 2022)

Table 1. Loading Outer Value

Dimensions	*Supply Chain Management*	Strategy of Operations	Performance of Cooperation
X1	0.583		
X2	0.856		
X3	0.825		
Y1		0.700	
Y2		0.608	
Y3		0.548	
Y4		0.763	
Z1			0.867
Z4			0.823

Source: Questionnaire, reprocessed 2022

3.1   Evaluation Model

3.1.1   Outer Evaluation Model

Outer evaluation model that aims to evaluate the indicator variables. The outer evaluation model consists of Indicator reliability, discriminant validity, internal consistency, and convergent validity.

3.2   Indicator Reliability

Indicator reliability is based on the outer loading. Measurement of outer loading SmartPLS uses traditional tools. The results are presented in the following Table 1.

based on the value of *outer loading, the* outer loading value of each dimension has a value of more than 0.5 outer loading means all dimensions can be used to form the outer models.

3.3   Validity Discriminant

Evaluation for a discriminate-based variable by looking at the value Fornell Larcker. The result of the calculation using the SmartPLS program is presented in the following Table 2.

Based on the value of Forner Larcker's entirely latent variable value is higher than the other latent variables. So the models were built to qualify for discriminant validity.

3.4   Internal Consistency

To measure the internal consistency reliability using composite values. The following (Table 3) is composite reliability.

Table 2. Forner Value Larcker

	Supply Chain Management	**Operations strategy**	**Cooperative performance**
Supply Chain Management	0.765		
Operations strategy	0.644	.660	
Cooperative performance	0.534	.590	.845

Source: Questionnaire, reprocessed 2022

Table 3. Composite Reliability

	composite Reliability
Supply Chain Management	0.805
Operations strategy	*0.753*
Cooperative performance	*0.833*

Source: Questionnaire, reprocessed 2022

According to the table *composite reliability,* to test the internal consistency, all variables have a value of more than 0.7. That is a model that is built eligible to establish a consistent model.

3.5   Convergent Validity

In measuring convergent validity, we used the average variance validity. The results are presented in the following Table 4.

According to the table, Average Variance Extracted (AVE) AVE showed values above 0.5 means that all outer valid models for this study so no need for removal of the indicator (Table 5).

Based on the path coefficient value Table 1 supply chain management have a positive relationship to the performance of cooperatives by 24.6%. Supply chain management

Table 4. Evaluation of Average Variance Extracted (AVE)

CONSTRUCT	F-SQUARE
Supply Chain Management	0.585
Operations strategy	0.714
Cooperative performance	.536

Source: Questionnaire, reprocessed 2022

Table 5. Coefficient Variable Line Research

Construct	Original Samples	T-Statistic	P Value
Supply Chain Management - > Performance Cooperative	.264	2,019	0,044
Supply Chain Management - > Operations Strategy	0.644	10.186	0,000
Operations Strategy - > Cooperative Performance	.420	3,269	0,001
Supply Chain Management - > SRM	.621	5,880	0,000
Supply Chain Management - > CR	.863	27.106	0,000
Supply Chain Management - > Information Sharing	0.819	13.644	0,000
Operations Strategy - > Process Capacity	0.708	9.006	0,000
Strategy Operations - > Logistics Processes	0.719	9.620	0,000
Operations Strategy - > Process Technology	0.519	4,538	0,000
Operations Strategy - > Organizational Development	0.821	16.596	0,000
Cooperative Performance - > Performance Management	0.895	19.948	0,000
Cooperative Performance - > Business Performance	.784	9.379	0,000

Source: Questionnaire, reprocessed 2022

of the operating strategy has a 64.4% level of relations and operations strategy on the performance of the cooperative relationship by 42%.

3.6 Evaluation of R Square (R2)

After testing the validity of the model further outer structural model testing. Structural model testing was conducted to assess the relationship between the latent variable role in the model, and the view of the value of R Square (Table 6).

Table 6. Evaluation R Square

Construct	R Square
Operations Strategy (Y)	0,375
Cooperative Performance (z)	0.408

Source: Questionnaire, reprocessed 2022

By the criteria as set forth by Chin model measurements (in Ghozali, 2011) about the good, moderate, or weakness of the model, then the value of R square of 0.375 and 0.408 showed that the structure that is built up in this study was moderate.

R Square in the table above, it can be explained that the variability construct cooperative performance value in the field of food production cooperatives in West Bandung regency of 51.4% can be explained by the variable supply chain management and operations strategy of the remaining 48.6% can be explained by other variables outside factors studied.

Here is the influence of the calculated path *of supply chain management on* the performance of the cooperative through cooperative operation strategy in the field of food production in West Bandung regency. In food production cooperatives in West Bandung Province, operational strategies have the greatest influence on cooperative performance. As shown in the table, the supply chain management variable can reach 6.7% of the cooperative's performance. Operational strategy variables can explain as much as 17% of the cooperative performance variables, while other variables explain the rest. Moreover, these factors are believed to have a fundamental impact on presentation.

The fourth hypothesis is to test the effect of supply chain management on the performance of cooperatives through operating strategies. The model is illustrated in the following figure.

Figure 4 shows how supply chain management affects cooperative performance through operational strategies. The following operational strategy is used to test the hypothesis that supply chain management affects cooperative performance.

Ho = 1, 2, = 0: There is a positive influence between supply chain management on the performance of cooperatives through operating strategies.

H1 = 1, 2, ≠ 0: There is a positive influence between supply chain management on the performance of cooperatives through operating strategies.

Hypothesis testing is done through F tet statistics that the provisions reject H0 if the F cunt is larger than the F table or otherwise accept H0 if the F count is less than o equal
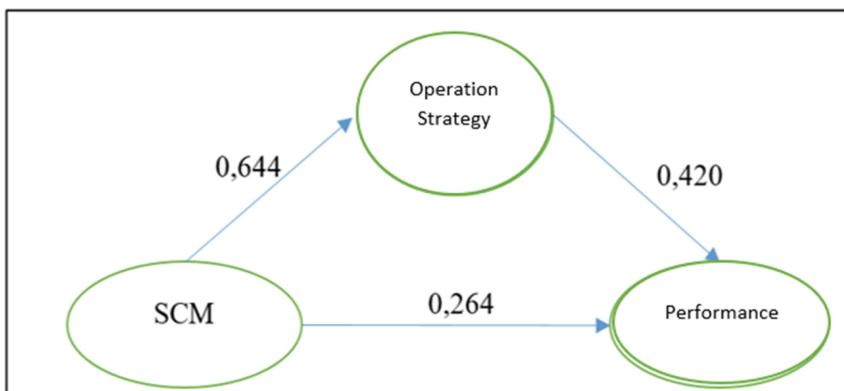

Fig. 4. Model CooperativePerformance of Cooperative Production Operations Strategy in the Field of Food in West Bandung regency (Source: Questionnaire, reprocessed 2022)

to the F table. The codetermination (R2) can be computed value of F with the following formula:

$$\text{count } \frac{(n-k-1)R^2_{Z(X,Y)}}{K(1-R^2_{Z(X,Y)})}.$$

$$\text{F count} = 18.6754 \frac{(92-3-1)0.389}{3(1-0.389)}.$$

Table F the error rate of 0.05 and degrees of freedom (3; 92) obtained a value of 2,673 F table. Because the results obtained F count (18.6754) is greater than the F table (2.673), then the error rate of 5% the decision Ho is rejected and Ha accepted.

This means that there is a simultaneous effect of *supply chain management on* the performance of cooperatives through operating strategies. The results are consistent with the results of the research study by Irma Maysaroh (2010) through the supply chain operations strategy delivers high performance. This means that the performance of the cooperative explains supply chain management through operating strategies. So it looks like the same direction is keterkatian between variables.

Improved performance of cooperatives can be supplemented with coordinated supply chain management to provide a positive impact on performance also by using an effective operations strategy cooperative performance can be improved.

Cooperative food production in West Bandung regency should pay attention to supply chain management to improve the performance of cooperatives. Cooperative performance can be increased if the cooperative can integrate with suppliers through a supplier strategic partnership, as well as keeping the customer demand through the customer relationship. The operation of supply chain management strategies affects not langusung kineraja cooperative.

Facts on the ground show that the cooperative has not been able to coordinate their suppliers, the base of suppliers to provide raw materials based solely on the needs of the cooperative at the time. In addition, the technology used is simple and can be operated manually.

Cooperatives still bear a high cost in the distribution of food products such as those delivered by Mr. CEPI as chairman of cooperative Sukamaju Partners, cooperative currently bears the cost of large transport, and the distribution fleet is still lacking. Therefore, from the dimensions of customer relationship that is still quite causing the performance of the cooperative enough.

4   Conclusion

The following is a summary of research findings regarding the impact of supply chain management on cooperative performance in the food production sector in West Bandung Regency: "Supply chain management has a positive effect on cooperative performance". Performance, both in terms of business performance and performance management. Cooperatives should make the most of their supply chains. Cooperative performance can be positively affected by an efficient supply chain.

Operations strategy is positively influenced by supply chain management. This indicates that the methodology must follow its inventory network in order to have the opportunity to carry out useful activities. Organization with vendors is very important for availability and coordination with customers to ensure the importance of goods. To run

the company more effectively, it is necessary to share relevant information to ensure operational strategy.

Management strategy also plays a role in cooperatives. Therefore, companies must be able to improve the performance of their cooperatives by optimizing their operational strategies. Efficiency in company operations is very important to improve cooperative performance and ensure business continuity.

Supply chain management has a positive impact on cooperative performance through operational strategies. Strong partnerships with suppliers help us stay in touch with our customers. The certainty of raw material suppliers provides a clearer operational strategy. Operational reliability improves cooperative performance.

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