CAUSAL FACTORS OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT AFFECTING THE PERFORMANCE OF ORCHID AGRICULTURAL PRODUCTS

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ABSTRACT

This research aimed 1) To study the causal factors affecting logistics and supply chain management and the performance of orchid agricultural product farmers. 2) To study the influence of causal factors in logistics and supply chain management on the performance of orchid agricultural product farmers. This research is quantitative research. The sample is used in the Orchid Agricultural products, consisting of 340 places. The research instrument was a questionnaire. The statistics used for data analysis were frequency, percentage, mean, and standard deviation. For the statistics used to test the hypothesis, the researcher used the harmonic index consisting of chi-square, GFI, RMSEA and CFI. And the results of the verification were consistent with the empirical data. The results of the data analysis showed that the Chi-square was 92.53 with the P-Value of 0.07 and the CFI was 1.00. GFI was 0.96 and RMSEA was 0.02.

The results showed that 1) Resources capability has a direct positive influence on the logistics management and supply chain. 2) value added has a direct positive influence on the logistics management and supply chain. 3) logistics management and supply chain has a direct positive influence on the competitive advantage. 4) logistics management and supply chain has a direct positive influence on the Performance farmers 5) competitive advantage has a direct positive influence on the Performance farmers. And the benefits of this research are a way for the farmers to plan to implement the principles of sustainable performance.

Keywords: logistics and supply chain management, performance

INTRODUCTION

Currently, Thailand's economic growth is slow and at a low level, with the important factor being high dependence on foreign countries in terms of trade, investment, and technology, which causes fluctuations in the world economy. In particular, the economies of important trading partners such as the United States, Europe, and Japan inevitably affect the economic, trade, and investment conditions in Thailand. In addition, the direction of increasing the country's competitiveness in order to move from a middle-income country to a high-income country is Traditional low-cost labor-intensive mass production methods cannot be used. But it must adjust to raising the level of production of goods and services that emphasizes the use of technology and innovation capital. And more human capital. Therefore, the country requires higher investment in innovation and human capital. To create value for products and services from origin to destination. Therefore, Thailand needs to upgrade the country to a higher level of production and services. (National Science and Technology Development Agency, Ministry of Science and Technology, 2023) And part of the driving force of the sector are agricultural product entrepreneurs who grow Orchid Agricultural products as small entrepreneurs in Thailand.

Which is from the development plan of Nakhon Pathom Province the area of orchid cultivation is relatively constant. Because orchids can be exported and sold abroad. Nakhon Pathom Province is therefore one area where orchid farmers are experiencing problems in terms of potential and quality control in efficient production. (Nakhon Pathom Provincial Development Plan, Year 2023-2027, 2023) From the said situation, the problem in this research is the management of logistics and supply chains of agricultural orchid products, their potential, and effective quality control in production. From the upstream, midstream, and downstream levels, farmers must bring in logistics, logistics, and supply chain management to increase their competitive advantage. From procurement, production, and internal management Facilities management Information management Transportation management Product distribution to deliver products to customers at low costs the products are different. Or focusing on specific customer groups. This will result in customer satisfaction. Gain a competitive advantage. It affects the performance of agriculture, which continues to increase. Therefore, farmers can strengthen farmer groups. Community enterprise group by systematically studying this research project from the upstream, midstream, and downstream levels, focusing on achieving mutual benefits among farmers in the same supply chain, this will result in customer satisfaction. Gain a competitive advantage. It affects the performance of agriculture, which continues to increase.

For the reasons mentioned above, the researcher therefore recognizes the importance of study and research. This is to prepare and push agriculture to have the ability to develop complete management, logistics, and supply chains. The results from this research will be used to formulate policies and plans to ensure appropriateness, including guidelines for improving and developing various factors and setting long- term plans to create Gaining competitive advantage in agriculture, stimulating farmers to use their potential to create new creativity with farmers, as well as achieving efficiency and effectiveness in creating advantages at the farmer level in order to drive the economy of Thailand firmly. Continue to be sustainable.

Research objectives

1. To study the causal factors affecting logistics and supply chain management and the performance of orchid agricultural product.

2. To study the influence of causal factors in logistics and supply chain management on the performance of orchid agricultural product.

Research hypothesis

Hypothesis 1: Resource capabilities have a positive direct influence on logistics and supply chain management.

Hypothesis 2: Value added has a direct positive influence on logistics and supply chain management.

Hypothesis 3: Logistics and supply chain management have a direct positive direct influence on competitive advantage.

Hypothesis 4: Logistics and supply chain management have a direct positive direct influence on performance.

Hypothesis 5: Competitive advantage has a direct positive influence on f performance.

CONCEPTS, THEORIES, AND RELATED RESEARCH

2.1 Resources Capability

Organizations that use artificial intelligence technology to exchange information, collaborate, plan, and solve problems that occur with various activities with in logistics and supply chains, such as route analysis and routing choosing a vehicle packing products into

shipping containers Material handling choosing a strategy and action plan it will help build good relationships with customers. Environmentally friendly supplier business partners and all stakeholders in logistics and environmental supply chains. (Dwivedi et al., 2019) Including resource capabilities as the management of an organization's physical resources. It is a system that supports the main objectives of the organization. Which is an important mechanism in planning, managing, and designing systems. Coordinating the use of various resources or facilities and being adequately prepared ready to use and facilitate activities within the environmental supply chain, such as waste management. Security Health and safety management Power management Maintenance that brings maximum benefit to both users and increases competitive advantage (Van der Voordt, 2017)

From the foregoing, the researcher concluded that capabilities resource refer to the linking activities of information flows. Order management process Managing transportation and distribution to meet customer satisfaction promotes increasing business competitiveness.

2.2 Value- added

In order to make the product valuable, it is important to create additional value and develop the quality of the product to meet the needs of customers as much as possible. (Prommaroeng,2018) In addition, increasing the value of community products based on sustainable local wisdom includes: 1) local wisdom is the potential; 2) learning; and 3) conservation. 2) Adding the value of community products is making a difference in image creation. Product packaging design 3) the strength of community enterprises is self-development. Creating a community business by making the community have knowledge can develop their products to add value. Respond to customer needs and still maintain its intellectual identity, combined with product quality development. It also results in the community appreciating their way of life and culture. Believe that it can generate income and strengthen the community's economy. Resulting in generating income in the community. (Suvannin,2020) as well as creating added value in products by designing products that are symbols of the community. And can be used as souvenirs for the community. (Phon-ngam,2019).

From the foregoing, the researcher concluded that creating added value means creating additional value, creating additional value that can be given to products. in product design Product processing Providing a place to sell and promoting products to be accepted by the human market. This will be an important driver for farmers to be successful.

2.3 Logistics Management and Supply chain

The organization's logistics and supply chain management is divided into three parts: upstream, midstream, and downstream, which is management that emphasizes networking and cooperation to control, manage, and improve efficiency. From the procurement of raw materials Production process and transportation to customers To obtain environmentally friendly products and services By using raw materials, energy, labor, and other production resources sustainably to reduce waste in the form of gases, solids, or liquids at every stage of the product life cycle. (Bowersox et al., 2020) including supply chain management, for the environment, it is the efficient use of resources by taking the environment into account throughout the entire supply chain. From upstream to downstream, which involves suppliers, designers, manufacturers, distributors, transporters, and retailers. (Chidchob et al.,2018) including the concept of logistics as the integration of activities necessary to Move products throughout the supply chain with the goal of producing and distributing products sustainably with care for the environment and society (Sunil et al., 2016). Logistics also includes green packaging activities that have a point. Aiming to reduce the size of packaging and use environmentally friendly materials. Promote recycling and reuse. Cooperate with vendors to standardize packaging. Promote the use of circular packaging. Reduce material use and save energy. (Thoo et al., 2015).) Supply chain management, it is what manufacturers of goods and

services are important because the life cycle of supply chain activities covers processes from procurement of raw materials to production of goods and services. Until the last step is to deliver products and services to consumers to be continual and most efficient Along with creating a system to create a flow of information that causes the work process of each department. (Setthachotsombut, 2017)

From the foregoing, the researcher concluded that logistics and supply chain Management refers to planning, purchasing, and controlling operations. product flow Product material storage Including integrated supply chain activities that involve converting raw materials into finished goods and passing those goods on to final consumers. To meet customer needs and reduce costs in the organization by making the most valuable use of resources,

2.4 Competitive advantage

Competitive advantage has 3 factors: 1. Cost: the organization has logistics management and a green supply chain. Developing and improving efficient operations Operating at lower costs Create a competitive advantage. 2) Quality is when the organization produces good-quality, reliable products that meet the specifications and needs of customers. 3) Delivery is the delivery of products on time. The quantity is correct. And in the right place. This results in reliability in delivery. Including responding quickly to customers (Chamsuk et al., 2017) by creating product or service differences that are superior to competitors and responding quickly by using strategies to create an advantage in competition Strategic positioning of the business based on cost competitive advantage Including work that helps stimulate personnel to participate in improving product quality or solving problems that occur within the organization. This can gain a competitive advantage through value creation (Meksuwan, 2017).

From the foregoing, the researcher concluded that competitive advantage means creating value in products and services by differentiating them from competitors in terms of quality, cost, innovation, cost, and speed of response.

2.5 Performance

Farmers' performance creating community products is a way of adding value in terms of building confidence in products or products to be accepted and helping to generate sales. And operating profits. (Rodyoo & Boonmeesrisa-nga, 2019), including the study of organizational performance with a concept creation process on the performance of the organization. Consideration of the organization's stakeholders and responding to the satisfaction of stakeholders. The measurement of the organization's performance in both areas is the measurement of financial performance and measurement of non-financial performance. (Santos & Brito, 2012) For effective measurement of organizational performance, organizations can measure results in two areas: economic measurement with measures such as market share growth, financial ratios, profit generation, and measuring the results of creating satisfaction for the organization's stakeholders (Santos & Brito, 2012)

From the foregoing, the researcher concludes that performance refers to the results of the organization's operations that arise from the process of output from the work of employees in the organization in terms of monetary performance measurement and operational results. that are not monetary in nature as a whole. It has financial performance results that show operating results with the economy as a measure. Including non-financial operating results.

After reviewing concepts, theories, documents, and related research, a research framework was created, as shown in Figure 1.

Research Conceptual Framework

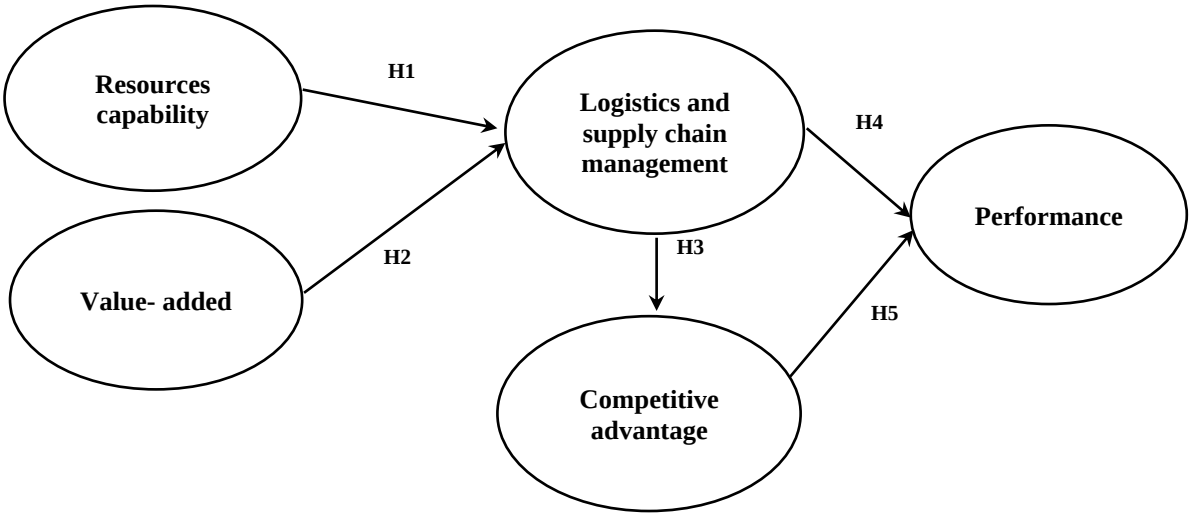


Figure 1: Research concept framework

RESEARCH METHODS

3.1 Population and sample

The population used in this research study is orchid farmers in Nakhon Pathom Province. The unit of analysis in this research is the individual level. A sample group in quantitative research is a group of farmers located in Nakhon Pathom Province. The researcher has considered the nature of the research data, which will require advanced statistics. Therefore, the sample size was determined to be consistent with the use of statistics as a basis. The criteria used to define the sample are 10–20 times per observed variable (Hair et al., 2010). This research has 15 observed variables, resulting in a sample size of 150–300 samples. The sample size was equal to 300 samples. Therefore, the research used a sample size of 300, resulting in an appropriate sample size according to the idea of Hair and colleagues (Hair et al., 2010).

3.2 Research Tools

Tools used to collect data the researcher uses a test. This is a closed-ended question. Part 1 is a multiple-choice question. And for parts 2–4, it was a Likert rating scale (1967), and part 5 was an open-ended question. Part 1 was general information about the respondents in the research. This is a multiple-choice question. Part 2: Causal factors in logistics and supply chain management to create competitive advantage and improve farmers' performance. Part 3: Logistics and supply chain management. Chapter 4: Results from Management Logistics and Supply Chain Part 5 provides additional suggestions.

3.3 Checking the quality of research tools

Testing the quality of the research instruments has the following steps: 1) Testing content validity by giving a questionnaire created to 3 experts to check the consistency of the questions with the objectives and conceptual framework of the research, as well as definitions of specific terms of variables used in research and used to improve the questions. Then find the index of congruence between the questions and the characteristics according to the research objectives using the formula IOC (Index of Item Object Congruence) = Σ R/N, and then compile the experts' opinions on a per-item basis. The consistency index between the questions must be at a value of 0.50 or higher to be considered consistent with the research objectives

and term definitions. And can be used as questions in a questionnaire (Rovinelli & Hambleton, 1976). From testing, it was found that the said value is between 0.67 and 1.00 and can be used as a question. 2) Checking the reliability of the instrument. To test the reliability of the tool from an experiment by testing it with farmers who were not the actual sample, 30 locations, using alpha coefficient analysis according to Cronbach's method (Cronbach, 1984), with the reliability of the entire questionnaire. Must have a value of 0.70 and above to be considered acceptable (Hair et al., 2006). From testing, it was found that the reliability value of the entire questionnaire was equal to 0.901, and from the results of testing the quality of the research instrument by checking confidence Using the alpha coefficient according to Cronbach's method, it was found that the reliability of the questionnaire divided by aspect was between 0.801 and 0.914, which is in line with the requirements. Therefore, the
questionnaire can be used to collect research data.

3.4 Statistics and data analysis

1. The researcher has analyzed the obtained data. Using descriptive statistics and analyzing the obtained data to find statistical values, which include frequency, percentage, and standard deviation, by statistical package and structural equation analysis (Structural Equation Model: SEM)

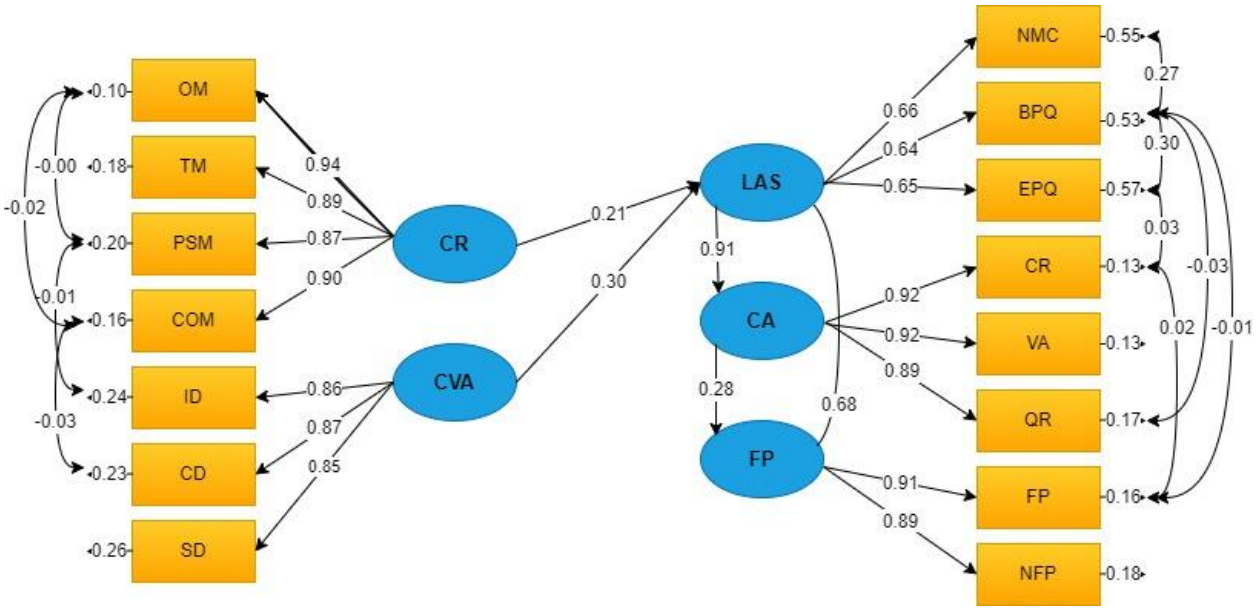
2. Analysis of causal factors using path analysis. Using a statistical package and structural equation analysis (Structural Equation Model: SEM), consider that the $\chi 2$ /df value is less than 2, the CFI index is close to 1, the RMSEA index and RMR index are lower than 0.05, which is within acceptable criteria. Hair et al. (2006) considered the model to be consistent with empirical data.

RESEARCH RESULTS

There were a total of 300 respondents in this research. The results of the study of the general information of the respondents revealed that the majority were male. Accounting for 65.89 percent, most are over 40 years old; accounting for 49.56 percent, most have a high level. Most had less than a bachelor's degree, accounting for 87.29 percent. Most had 6–10 years of experience, accounting for 44.23 percent. And there was a sample group that responded to the questionnaire with a high level of overall opinion. And each of the six areas includes creating added value. Resource capabilities Logistics and supply chain management Competitive advantage In terms of farmers' performance at a high level

The researcher used a multivariate statistical analysis method using path analysis. To test the research hypotheses according to the preliminary agreement of structural equation analysis. To see the relationship between the variables used in the study, whether it is a linear relationship or not. And have a relationship. What is the direction of the relationship between the variables? From the test, it was found that the correlation coefficients of all 15 observed variables, 134 pairs, were related and that the relationship of every pair of variables was in the same direction. The correlation coefficient between the variables indicates a positive relationship. There is a coefficient between 0.439 and 0.787 with statistical significance at the 0.01 level, which is a correlation coefficient. of the variables must have a value not exceeding 0.90, which indicates that the variables studied are not There are problems with excessive correlation (Pallant, 2010; Rubin, 2012), as well as testing for independence of these variables with the KMO (Kaiser- Meyer- Olkin) and Bartlett's tests of sphericity. To check the appropriateness of the group of variables, it was found that the KMO value obtained was 0.965, which is greater than 0.8 and is very suitable for factor analysis. And Bartlett's sphericity test values. Statistically significant (Bartlett's Test = 7831.477, df = 136, Sig = 0.000). These variables do not have multicollinearity problems and are therefore suitable to be used to analyze the measurement model and research model developed (Hair et al., 2006).

The results of the analysis of the causal relationship structure model after adjusting the model. The results of the examination found that the chi-square value of 92.53 was statistically significant at the 0.07 level (p-value = 0.07), the relative harmony index (CFI) was 1.00, and the harmony measurement index (GFI) was 0.96. The Aggregation Index (AGFI) was 0.93, and the Root Mean Square Error of Approximation (RMSEA) was 0.02. All indices passed the criteria, indicating that the model is consistent with the empirical data, as follows: Picture 2



Picture 2. Results of the analysis of the causal relationship model for logistics and supply chain management of orchid farmers.

Results of the analysis of direct influence, indirect influence, and combined influence. It was found that the variables that are components of the cause and outcome variables of logistics and supply chain management of Orchid Agricultural products. Has a direct influence value Indirect influence and total influence are divided according to research hypotheses, as shown in
Table 1.

Table 1: Direct influence (DE), indirect influence (IE), and total influence (TE).

Causal variable	Result variable								
	Logistics and supply chain management (LAS)			Competitive advantage (CA)			Farmer performance (FP)		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
Resource capabilities (CR)	0.21*	-	0.21*	-	0.20*	0.20*	-	0.21*	0.21*

Causal variable	Result variable								
	Logistics and supply chain management (LAS)			Competitive advantage (CA)			Farmer performance (FP)		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
Value added (CVA)	0.30*	-	0.30*	-	0.29*	0.29*	-	0.30*	0.30*
Logistics and supply chain management (LAS)	-	-	-	0.91**	-	0.91**	0.68**	0.26**	0.94**
Competitive advantage (CA)	-	-	-	-	-	-	0.28**	-	0.28**

From Figure 2 and Table 1, the analysis results found that

(1) Resource Capability has a positive direct influence on logistics and supply chain management. It was found that Resource capability (CR) has a direct positive influence on logistics and supply chain management. (LAS) with a direct influence value of 0.21 and a total influence value of 0.21 with statistical significance at the 0.05 level; therefore, research hypothesis 1 is accepted.

(2) Value added has a direct and positive influence on logistics and supply chain management. It was found that Value added (CVA) has a direct and positive influence on logistics and supply chain management. (LAS) with a direct influence value of 0.30 and a total influence value of 0.30 with statistical significance at the 0.05 level; therefore, research hypothesis 2 is accepted.

(3) Logistics and supply chain management It has been found to have a direct positive influence on competitive advantage. Logistics and supply chain management. (LAS) has a positive direct influence on competitiveness (CA), with a direct influence value of 0.91 and a total influence value of 0.91, with statistical significance at the 0.01 level. Therefore, research hypothesis 3 is accepted.

(4) Logistics and supply chain management it was found to have a direct positive influence on performance. Logistics and supply chain management (LAS) has a positive direct influence on performance (OP), with a direct influence value of 0.68, an indirect influence value of 0.26, and a total influence value of 0.94. It is statistically significant at the 0.01 level. Therefore, research hypothesis 4 is accepted.

(5) Competitive advantage It has a direct positive influence on performance. It was found that competitive advantage (CA) has a positive direct influence on performance (FP), with a direct influence value of 0.28 and an influence value of 0.28. The total is equal to 0.28 with statistical significance at the 0.01 level. Therefore, research hypothesis 5 is accepted.

SUMMARY AND DISCUSSION OF RESULTS

1. Resource capability have a direct and positive influence on logistics and supply chain management. Statistically significant at the 0.05 level, therefore, hypothesis 1 is accepted. This is because farmers have made adjustments in terms of adapting to the changing environment from a competitive perspective, in which the change tends to be higher. Therefore, it shows that farmers have potential for financial resources. Among the factors are the provision of financial resources necessary for adequate and appropriate operations, the ability to borrow business, and the ability to increase capital. The findings are consistent with the study of Bahremand and Karimi (2016), which showed that technological capabilities are an important factor for the success of production and services, helping them to grow further. Efficient management responds to customer needs and creates a high competitive advantage, resulting in long-term economic performance and production processes.

2. Value added has a direct and positive influence on logistics and supply chain management. With statistical significance at the 0.05 level; therefore, hypothesis 2 is accepted. This is because farmers have adapted to the competitive environment. In focusing on product processing, it will be processing. Including product processing, it is done according to customer needs and customer standards. Moreover, the focus on product design will be to design products to add value by emphasizing convenience, beauty, modernity, and brand logos for each type of product to be eye-catching and beautiful in order to create awareness of the product. The results of this research are consistent with the study of Susanty, Sari, Rinawati, and Setiawan (2018), in which the influence of integrating organizational capabilities and resources on environmental supply chain management is a new phenomenon. Academics began to focus on studying in the context of the manufacturing industry.

3. Logistics and supply chain management it has a direct positive influence on competitive advantage. With statistical significance at the 0.01 level; therefore, hypothesis 3 is accepted. This is because farmers respond quickly by focusing on improving services based on customer feedback and responding to customer needs, including being able to solve problems in a timely manner. To reduce costs there is support for the efficient use of resources to increase work efficiency. in creating additional value. Product quality has been developed by modifying the production system to add value to the product. And use productivity technology at work. The findings are consistent with a study by Dwivedi, Hughes, Ismagilova, Aarts, Coombs, Crick and Galanos (2019), where organizations used artificial intelligence technology to exchange data. cooperation Planning and problem solving that occur with various activities within the supply chain, such as analysis and routing Choosing a vehicle Packing products into shipping containers Material handling Choosing a strategy and action plan It will help build good relationships with customers. Environmentally friendly suppliers, business partners, and stakeholders in the supply chain

4. Logistics and supply chain management it has a direct and positive influence on performance. With statistical significance at the 0.01 level, hypothesis 4 is accepted. This is because farmers have in-depth relationships with raw material suppliers and have long-term agreements to make purchasing decisions based on quality and price. Together in order to raise the level of logistics and supply chain management. Including production where technology is used in production and employing appropriate numbers of workers. And in inventory management, there is security in storing goods or products. There is clear product information. Complete and easy to understand the results of this research are consistent with Anatan's (2014) study, which found that developing and maintaining relationships between food export businesses and raw material suppliers. And creating good relationships between food export businesses and customers abroad and extending product delivery times while still being able to meet customer needs affects the organization's ability to have a competitive advantage.

5. Competitive advantage it has a direct and positive influence on performance. With statistical significance at the 0.01 level; therefore, hypothesis 5 is accepted. This is because farmers respond quickly by focusing on improving services based on customer feedback and responding to customer needs, including being able to solve problems in a timely manner. To reduce costs there is support for the efficient use of resources to increase work efficiency and create added value. Product quality is developed by modifying the production system to increase the value of the product. And use productivity technology at work. The results of this research are consistent with the study of The results of this research are consistent with the study by Maury (2018), which shows business competitiveness as a concept that involves two important elements: the asset dimension and the process dimension, in order to achieve economic profits in terms of increased sales volume. Business competitiveness plays an important role in sustainable organizational performance.

Suggestions from research

1. Policy benefits

1.1 There is planning and determination of responsibility at the community, village, and sub-district levels by establishing a section responsible for the Pandanus leaf farmer group. To make operations happen in the long term the main responsible person may be the community leader. Community Enterprise President and facilitate action with both internal and external partners. Improve the level of international cooperation and communication. To increase the capacity of communities to achieve sustainable success

1.2. The ability to manage local wisdom has been established for farmer groups within the network of agricultural product entrepreneurs. To create cooperation to act as a center for exchanging information, knowledge, and opinions Establish a central database system. To act as a center for exchanging information, knowledge, and opinions

2. Suggestions for future research

2.1 In this research, the unit of analysis is the individual level. In the next study, additional studies should be conducted at the organizational level. In addition, studies should be conducted at multiple levels (multi-level model), such as individual level, group level, organizational level, etc., in order to see components at many levels.

2.2. In future research the conceptual framework of this research may be used. Let's study a group of control variables that are clearly separated, namely organizational standards. Or even other variables such as the number of employees and industry size. To test whether there are differences or not. Therefore, in the future, the results of this research should be studied in other businesses. Or other industries to compare and confirm the results of the study, including conducting studies separated into business industry groups. To test whether there are differences or not in the development of logistics and supply chain management.

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