

# Analysis of Supply Chain Strategy, Competitiveness, and Business Performance at Passion Fruit Processing Industry in Gowa Regency

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**Abstract.** Passion fruit products are one of the superior products processed by the agribusiness sector industry in Gowa Regency. In order for the passion fruit processing industry to continue to exist and be sustainable in the market, understanding supply chain strategy, competitiveness and business performance is very important for managers/owners. This study aims to explain and analyse the important elements of supply chain strategy, daylight and business performance. This study uses a quantitative approach, where primary data is obtained from 105 managers or owners through questionnaires on April to July in 2023. Research data was processed and analysed using confirmatory factor analysis (CFA). The research results show that the main element forming a supply chain strategy is responsiveness. Product quality is a key element in shaping a company's competitiveness, and business performance is more dominantly determined or shaped by the company's sales growth. The implications of this study provide direction for managers of the passion fruit processing industry regarding the importance of responsiveness aspects in implementing supply chain strategies, product quality in developing competitiveness, and sales growth aspects to produce superior performance.

## 1 Introduction

The contribution made by the agricultural sector, especially horticultural crops, to Indonesian national income is quite large, namely around 12-13% every year. Passion fruit is a horticultural plant that grows in tropical highland areas and subtropical areas at an altitude of 700-2,000 meters above sea level with temperatures of 18 to 25°C. Passion fruit is one of the leading commodities in the agricultural sector. It is hoped that the development of passion fruit plants can become a source of income in the national economy. BPS noted that in 2020-2022 Gowa Regency's economic growth averaged 6.9%, where the agricultural sector contributed 27.5% to this region's income. In the agricultural sector, passion fruit is one of the mainstay horticultural products besides potatoes, carrots, bananas, avocados, mangoes

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and rambutans [1]. Passion fruit agribusiness will provide added economic value and welfare for farmers, collecting traders and the passion fruit processing industry. Processed passion fruit products include syrup, juice, jelly and passion fruit dodol [2]. Therefore, the development of the passion fruit processing industry needs attention, especially with regard to aspects of the supply chain system, competitiveness and business performance so that this industry can be sustainable in the long term.

Supply chain is an important concept in operational management area that can be used to meet consumer needs for company products. The supply chain system usually consists of many actors i.e. suppliers, companies, transportation, warehousing, retailers, and end consumers. In many companies, supply chain strategy can be used to get optimal benefits via collaboration all supply chain system members which is started from consumer demand and ended when customers satisfied [3]. Furthermore, supply chain management is an integrated activity including procurement of raw materials, semi-finished goods and final products, as well as delivery to customers. These activities include purchasing, outsourcing, and building relationships with suppliers and distributors with purposes to create quality and value for supply chain members [4, 5]. The role of members in a supply chain system is urgent, especially to flow material, money, and information along the supply chain system. Therefore, supply chain management involved collaboration among companies in the system. Supply chain management should consider three primary flows i.e.: raw materials, data/information, and money. These three flows move from upstream to downstream or vice versa to produce both effectively and efficiently supply chain system. Some previous studies found that best supply chain management will promote business competitiveness in terms of cost, quality, speed of delivery, flexibility, time to market, and innovation [6].

In the supply chain context, we know strategy and collaboration concept. These two things are needed to create an effective supply chain system. Supply chain strategy usually includes efficiency, responsiveness, risk hedging, and agile. Then, supply chain collaboration occurred when two or more companies work together to plan and execute supply chain activities to achieve common goals, namely shared values and benefits. Conceptually, collaboration consists of two types, namely horizontal collaboration, and vertical collaboration. Horizontal collaboration refers to partnerships among members at the same level, while vertical collaboration refers to partnerships between manufacturer and suppliers. Better supply chain strategy can generate productivity, reduces inventory and production cycles in the short term, while in the long term it will increase market share, sales, and profitability [7, 8].

The precise supply chain strategy will increase competitiveness as well as business performance. Generally, company performance can be measured from financial and non-financial aspects. Financial aspect includes profit, and return on investment, while non-financial aspects comprise sales growth, market share, employee productivity, and customer satisfaction [9, 10]. Based on theoretical and empirical studies, then the purpose of this study is to identify and explain the important elements that affect variable of supply chain strategy, competitiveness, and business performance in the context of passion fruit processing industry.

## 2 Methods

This study was using a quantitative approach, which is a research approach that seeks to test a phenomenon based on empirical data. The unit of analysis is passion fruit processing industry in Gowa Regency, South Sulawesi Province. The number of samples was 105 units, where data is collected by questionnaire on April to July, 2023. Respondents in this study consisted of owners and managers. There are three variables analysed and explained in this research, namely supply chain strategy, competitiveness, and business performance. The

supply chain strategy variable is measured through four indicators, namely efficiency, responsiveness, risk hedging, and agile. Then, competitiveness variable is measured through five indicators i.e.: product quality, price, speed of delivery, flexibility, and product innovation. Then, business performance variable is measured through five indicators, namely market share growth, sales growth, return on investment, productivity, and customer satisfaction. The variables and indicators were measured and perceived by the respondents through a Likert scale of 1-5. The main data collection method is a questionnaire. In addition, this study also used observation, interview, and documentation techniques as data collection instruments. This study uses confirmatory factor analysis (CFA) to solve the research problem. Furthermore, data is processed by using IBM AMOS for windows.

### 3 Results and Discussion

Descriptive statistical analysis is used to explain and describe the respondent's level of perception on supply chain strategy, competitiveness, and business performance. Value of perception level start from low to very high based on mean score. Briefly, the results of descriptive statistic can be presented in the following table.

**Table 1.** Description of research variable

Variable and indicators	Mean	Description
1. Supply chain strategy:	3.74	High
a. Efficiency	3.83	High
b. Responsiveness	4.15	High
c. Risk hedging	3.35	High enough
d. Agile	3.62	High
2. Competitiveness:	4.00	High
a. Product quality	4.28	Very high
b. Price	3.83	High
c. Speed of delivery	4.15	High
d. Flexibility	4.08	High
e. Product innovation	3.66	High
3. Business performance:	3.95	High
a. Market share growth	3.95	High
b. Sales growth	4.33	Very high
c. Return on investment (ROI)	4.01	High
d. Productivity level	4.12	High
e. Customer satisfaction level	3.36	High enough

The results of the analysis in the table above show that in general respondents assess the supply chain strategy implemented by the company is in the high category with a mean value of 3.74. The responsiveness aspect is an important element in implementing a supply chain strategy with an average value of 4.15. Then, the results of the analysis also show that respondents assess the company's competitiveness to be in the high category with a mean value of 4.00. Product quality is an important element in forming competitiveness with a mean value of 4.28. From the table above, it can also be seen that respondents assess the performance of the passion fruit processing industry to be in the high category with a mean value of 3.95. Sales growth was prioritized by respondents as an important element in shaping and explaining business performance with a mean value of 4.33. These results illustrate that aspects of responsiveness, product quality and sales growth are three important elements that must be maintained by managers of the passion fruit processing industry. These findings

consistent with previously studies by [6, 8] that product quality and sales are important indicators that must be improved for gaining best performance.

Confirmatory factor analysis is used to analyse important indicators that affect and form variable supply chain strategy, competitiveness, and business performance. Results of analysis showed that supply chain strategy is formed by 4 indicators, namely: efficiency, responsiveness, risk hedging, and agile. Briefly, the results of confirmatory factor analysis (CFA) of supply chain strategy can be presented in the table below.

**Table 2.** Result of supply chain strategy analysis

Indicators/ items	Estimate	Critical ratio	Prob.	Description
1. Efficiency	0.450	Fix	Fix	Significant
2. Responsiveness	0.830	6.884	0.000	Significant
3. Risk hedging	0.742	5.511	0.000	Significant
4. Agile	0.521	3.290	0.007	Significant

The data in the table above showed that supply chain strategy variable is measured by four indicators i.e.: efficiency, responsiveness, risk hedging, and agile. These four indicators are valid and significant in measuring supply chain strategy variable. This is proven by the probability value  $< \alpha$  standard (prob.  $< 0.05$ ). Based on the loading factor value, it can be seen that responsiveness aspect is an important element in developing and applying supply chain strategies in the passion fruit processing industry with value of 0.830. This finding is consistent with [7] that responsiveness is important indicator that must be considered for producing best supply chain performance.

The table also showed that competitiveness is formed by 5 indicators, namely: product quality, price, speed of delivery, flexibility, and product innovation. Briefly, the results of confirmatory factor analysis (CFA) of competitiveness can be presented in the table below.

**Table 3.** Result of competitiveness analysis

Indicators/ items	Estimate	Critical ratio	Prob.	Description
1. Product quality	0.794	Fix	Fix	Significant
2. Price	0.715	5.489	0.000	Significant
3. Speed of delivery	0.680	4.840	0.000	Significant
4. Flexibility	0.542	4.116	0.005	Significant
5. Product innovation	0.580	4.515	0.001	Significant

The table above showed that competitiveness variable is measured by five indicators i.e.: product quality, price, speed of delivery, flexibility, and product innovation. These five indicators are valid and significant in measuring competitiveness variable. This is proven by the probability value  $< \alpha$  standard (prob.  $< 0.05$ ). Based on the loading factor value, it can be seen that product quality is an important element in explaining and describing competitiveness at passion fruit processing industry with value of 0.794. This finding is in line with [8, 13] that product quality is important indicator that must be considered for producing best competitiveness.

Furthermore, result of analysis showed that business performance is formed by 5 indicators, namely: market share growth, sales growth, return on investment, productivity, and customer satisfaction. Briefly, the results of confirmatory factor analysis (CFA) of business performance can be presented in the table below.

**Table 4.** Result of business performance analysis

Indicators/ items	Estimate	Critical ratio	Prob.	Description
1. Market share growth	0.722	Fix	Fix	Significant
2. Sales growth	0.798	6.276	0.000	Significant
3. Return on investment (ROI)	0.639	5.220	0.006	Significant

Indicators/ items	Estimate	Critical ratio	Prob.	Description
4. Productivity	0.716	5.930	0.000	Significant
5. Customer satisfaction	0.720	5.945	0.000	Significant

The data in the table above showed that business performance variable is measured by five indicators i.e.: market share growth, sales growth, return on investment, productivity, and customer satisfaction. These five indicators are valid and significant in measuring business performance variable. This is proven by the probability value  $< \alpha$  standard (prob.  $< 0.05$ ). Based on the loading factor value, it can be seen that sales growth is an important element in measuring and explaining business performance variable at the passion fruit processing industry with value of 0.798. This finding is in line with [14, 15] that growth of sales is important indicator that must be considered for improving business performance.

The responsiveness strategy is one of the important elements in supply chain strategy. In this context, the company must be responsive to product demand from customers. In addition, the company is also quick to respond in resolving consumer complaints. The results of the study support the findings of [11], [12] that company's ability to respond quickly to customer demand and complaints is urgent to win competition in the global market. Then, this study also found that consistent product quality is an important element in maintaining competitiveness. Fast product delivery and quality are two important elements considered by consumers in buying and using product and service that provided by companies [10, 13]. Furthermore, this study also found that sales growth is an important element in measuring business performance [8, 14]. Therefore, passion fruit processing industry should consistent in increasing product sales for get higher profit as well as customer satisfaction.

## 4 Conclusions

The study proved that responsiveness aspect is an important element in developing and applying supply chain strategies within supply chain system. Product quality is an important element in both explaining and describing competitiveness. Then, sales growth is critical element for either measuring or explaining business performance at passion fruit processing industry in Gowa Regency. The industry ability to quickly respond on product demand and resolve consumer complaints are the important part of the supply chain strategy. Consistently produce the quality product is an important element in maintaining company's competitiveness. In addition, effort to increase and maintain sales growth will generate best performance. The results of this study provide some directions for managers of the passion fruit processing industry to be more responsive to customer, consistent in improving the quality of products, and continuously increase their product sales for getting profit as well sustainability in the long term.

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