

GUIDELINES FOR PROCESSED FRUIT INDUSTRY MANAGEMENT FOR EXPORT TO SUSTAINABLE GROWTH

Satit Kongprasard *, Porntip Shoommuangpak and Thanin Silpjaru

Faculty of Business Administration, King Mongkut's University of Technology North Bangkok,
Thailand

*Corresponding Author

Abstract

Thailand's economy is based on an agricultural country. Currently a fruit exporter Processing is the second largest in ASEAN around the world. This research aims to study Guidelines for Processed Fruit industry Management for Export to Sustainable Growth Then it was developed into a structural equation model. Conduct both qualitative and quantitative research. Qualitative research was conducted by in-depth interviews with 9 experts and group discussions with 11 experts. For quantitative research, data was surveyed from 500 entrepreneurs exporting processed fruit for export using both Descriptive statistics, reference statistics, and multiple statistics. The research found that Guidelines for Processed Fruit industry Management for Export to Sustainable Growth The four components are arranged in order of importance as follows: 1) Organizational adaptation (\bar{x} = 4.03) each item the most important thing is to give importance to the preparation of Big Data to be used in analysis and decision making. 2) Market focus (\bar{x} = 4.00) The most important item is to position the product to meet the needs of the customer group. 3) Production innovation (\bar{x} = 3.99) The most important items include patenting the production of products or production processes at the organization. came up with an idea and 4) Business alliances (\bar{x} = 3.94) The most important item is opening channels for negotiations to expand trade cooperation with other countries, especially in new markets. For the hypothesis test results, it was found that small and medium sized industries with large industry Give importance to Guidelines for Processed Fruit industry Management for Export to Sustainable Growth Not significantly different at the 0.05 level. The results of the analysis of the developed structural equation model were found to meet the evaluation criteria. It is consistent with empirical data. The chi-square probability level value was 0.054, the relative chi-square value was 1.183, the concordance index was 0.962, and the root mean square index of error estimation was 0.019.

Keywords : Processed fruit industry adaptation of Market focus Production innovation business partners

Introduction

Thailand's economy is based on an agricultural country. From the past to the present Thailand exports processed fruits, generating income into the country with a total value of 141, 136 million baht (Department of Agricultural Extension, 2022). The top 3 important Thai fruit export markets are the United States, Japan, and China (Ministry of Commerce, 2023). However, data from the Ministry of Agriculture (2023) found that in 2020-2022, Thailand exported processed fruits. equal to 68,529; 64,820 and 38,409 billion baht, respectively, which has continuously decreased. This is due to many factors, such as strictness regarding the quality of processed fruits. Chemical residue competitors in neighboring countries, etc.

In addition, fruit production in Thailand still faces problems. There is an oversupply of fresh fruits in the market. The production process for processed fruits is not modern. Including changes that affect the processed fruit business. Many related agencies, both the government and private sectors, have cooperated in developing and solving various problems. Any other continuously coming but past operations have continued to focus on short-term solutions during the harvest season. The government sector has to lose a lot of budgets in price intervention. But still unable to solve the problem effectively Fruit farmers have also suffered from marketing problems and low product prices. Regularly almost every year This is because such operations do not cover long-term problem solving sustainable and not related to each other throughout the system (Bureau of Agricultural and Industrial Promotion Department of International Trade Promotion, 2022)

The government sector has therefore promoted the processed fruit industry. The objective is for farmers Have increased income. By setting up a settlement area for farmers to process in order to increase the value of the fruit. Create an entrepreneur in the agricultural chain Including creating a world fruit metropolis by 2021, promoting the processed fruit industry. To add value in exports Entrepreneurs, need to adapt in supply chain management to increase market share. Production process development Customer relationship management. To promote the fruit industry Processed for export and distribution to foreign countries sustainably (Department of Industrial Promotion) Ministry of Industry, 2021)

Therefore, the researcher is interested in studying Guidelines for business management in the fruit processing industry for export towards sustainable growth. To add value to Thai fruits by processing them and selling them. to Thailand's trading partners in order to strengthen the Thai economy and continue to grow steadily.

Research objectives

1. To study the elements of business management guidelines for the processed fruit industry for export. towards sustainable growth.
2. To develop a structural equation model for business management in the fruit processing industry. for exports towards sustainable growth.

literature review

As Thailand faces the problem of an oversupply of fresh fruits in the market, the production process of processed fruits is not up-to-date, including changes that affect the processed fruit business. The researcher has studied concepts and theories related to Guidelines for Processed Fruit industry Management for Export to Sustainable Growth, summarized as follows.

organizational adaptation This is because fresh fruits are in oversupply in the market every year. Processed fruit industry businesses should therefore give importance to systematic adjustments in demand and supply. Including gathering sufficient information for government decision-making to accelerate the development of the database system for the processed fruit export industry (Zhou et al., 2022). Adaptation of the processed fruit industry business is therefore

important. Organizations should use valuable resources in their operations to gain a competitive advantage (Abatecola et al, 2016). Cost adjustment is an important pressure for business operations causing the industry to try to adapt by Reduce costs to the lowest possible level in order to create maximum profits for the business. Processed fruit industry businesses must therefore choose strategies to differentiate their products for sale to different countries in accordance with the needs of consumers in each country different using a variety of strategies, such as international strategies international strategy global strategy multinational strategy, etc.

business partners Marios (2020) defines cooperation as a process in which autonomous actors interact through formal and informal negotiations, creating common rules, structures and structures. Take responsibility for your relationships and how you treat each other. The process involves sharing practices and mutual benefits. Sukhawattanakun (2023) explained that the effective long-term relationship management strategies to enhance value co-creation among business partners must consider of organizational management, partner characteristics, resource sharing and market orientation. In addition, the concept of cooperation which comes from the concept 2 approaches include: Main factors that cause cooperation to be created Contains social change and problem model Marios (2020) has determined the factors in the cooperation creation process as follows: Negotiation, both formal and informal Acceptance, action, and evaluation. Therefore, entrepreneurs in the fruit processing industry for export should adhere to the principles of negotiation between organization and network members to create consistent opinions. Market focus is Build relationships with customers rather than focusing on sales. By emphasizing emotional response and satisfaction to customers. Including creating a shared experience between customers and the brand (Karatphet, 2018).The concept of "market orientation" pertains to the marketing division as well as all other functional divisions that handle customer needs and provide value, since these activities form the foundation of an organization's competitive advantage and performance (Sukhawattanakun, 2023) In addition, Kolter (2003) stated that the marketing mix or 4 P's consists of product, price, and distribution. And in terms of marketing promotion, Don E. Schultz (1994) presented a new marketing basis in 1990 from 4 P's to 4 C's consisting of 1) Customer, customer perspective. 2) Cost, price setting perspective 3) Convenience, the perspective of convenience in which consumers can easily purchase products or services; and 4) Communication, the perspective of promoting consumer trust in the product. Karatphet (2018) said that marketing in the new era or the 4.0 era consists of experiences (Experience), which means using products or services that impress consumers, causing consumers to feel passionate about every product or service. Everyplace means that consumers can access product sellers or service providers anywhere and at any time. Exchange means creating value in the hearts of consumers. So that consumers are willing to pay in exchange for a product or service. Creating disciples or creating long-term consumers (Evangelism) means creating followers for a brand. Nowadays, marketing is not just about brand recognition. But it must make the product or service strong. To impress consumers to create loyalty to the product or service. Furthermore, Supapon & Sukhawattanakun (2023) pointed out that successful companies can develop operational plans to win customers' hearts more successfully and efficiently by using consumer insight data. Also, three

elements create consumer satisfaction: perceived value, perceived quality, and customer expectations; therefore, satisfied customers become brand loyalty and level up companies' revenue. Therefore, the fruit processing industry for export has adopted modern marketing concepts and theories to conduct marketing research to know the true needs of customers for products. By using the concept of marketing focus as an operational strategy to create a competitive advantage. By building relationships with customers This can be done in 2 ways: 1) Building relationships proactively (Proactive Marketing), planning management, including being prepared to solve problems that may arise and 2) building relationships in a reactive way (Reactive Marketing) used to improve products to respond to consumer needs.

Production innovation Production technology and innovation are considered to play a very important role in the development of the country. In particular, it is important to increase the competitiveness of the industry in response to Consumer demand increases product quality and standards. Reduce production costs Increase productivity, increase export value and create a quality workforce with high skills (Ministry of Industry, 2017) Additionally, Trott (2017) explains that process innovation is classified as part of technological innovation capability. Because technological innovation is closely related to the use of machines and production processes, production innovation is therefore a part of product innovation and process innovation. It is mainly related to process innovation. Because the process is about production methods and steps and organizational management systems which was developed to be an innovation with new technology (Wang & Ahmed, 2004) The application of production technology and innovation to use in industry includes the use of production technology and innovation in the industry. Consists of calculating the difference between product price and cost. Set industry standards Research and development (R&D) product design Using electronic media and the use of automatic machinery and the components of the industry technology use index found that the industry technology use index includes industrial competitiveness. Industry standards Research and Development (R&D) There are still relatively few research and development activities being carried out. Product design is not as good as it should be. The use of electronic media is quite high. and the use of automatic and semi-automatic machinery in the production process is quite high. Therefore, entrepreneurs in the fruit processing industry for export should focus on innovation and technology management, which is an important strategy that influences the success of the fruit processing industry.

From such concepts and theories The researcher has reviewed research related to Guidelines for Processed Fruit industry Management for Export to Sustainable Growth, which can be summarized as follows.

adaptation of The fruit processing industry affects The model for developing the potential and strength of the organization by managing cooperation with communities and networks in producing processed fruits for the market (Wiphavani et al., 2022) leads to hypothesis number 1 as follows.

H₁: Organizational adaptation elements directly influence business alliance elements.

Adjusting marketing by regularly providing raw materials to processing enterprises, including setting up a unified purchasing system. and the development of domestic fruits along

with giving importance to exports. To the national economy, there is the development of exports among processed fruit producers (Bakhriddinovich & Eliorbek, 2022), leading to hypothesis number 2 as follows.

H₂: Organizational adaptability components directly influence market orientation components.

Adjustment of the processed fruit industry by bringing the chain system into operation. It is important to add value to fresh fruit. Make entrepreneurs in the fruit processing industry Use biochemical characteristics in the fruit processing process to have nutritional value for consumers. (Kamiab, Tavassolian, & Hosseinifarahi, 2023) Leading to hypothesis number 3. As follows:

H₃: Organizational adaptation elements directly influence production innovation elements.

Entrepreneurs give importance to marketing strategies by focusing on maintaining the old customer base while expanding the new customer base. and product development under quality standards This creates a need to cooperate with networks related to the fruit processing industry in order to transport goods and sell them to foreign consumers (Wuthiphak, 2018). Leads to hypothesis number 4. As follows:

H₄: Market focus components Direct influence on Components of business alliances

Market factors cause entrepreneurs in the processed fruit industry to use modern production processes, use advanced technology in production, including the freeze-drying process (Kingfa and Noppadon, 2018). Leads to hypothesis number 5. As follows:

H₅: The market focus component has a direct influence on the production innovation component.

Research Conceptual Framework

From the aforementioned review of related literature. The research concept framework can be written as shown in Figure 1.

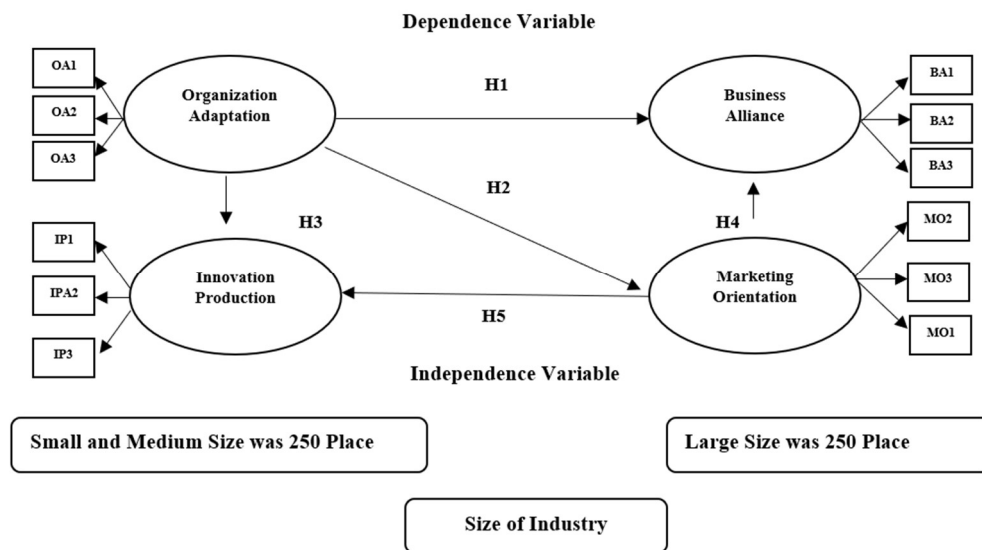


Figure 1 Research concept framework

How to conduct research

This research is the creation of new knowledge (Inductive Research) using Mixed-Methodology Research consisting of qualitative research with in-depth interview techniques and Quantitative research by collecting survey data and qualitative research using focus group techniques. To confirm the accuracy of the research model this time. The research method is as follows.

1. Population and sample used in the research Qualitative research using in-depth interview techniques the population used in this research is experts. Number of people: 9 people A specific sampling method was used, consisting of 3 entrepreneurs in the processed fruit industry for export, 3 executives of government agencies involved in managing the processed fruit industry for export, and 3 academics. 3 people Quantitative research The population used in this research is entrepreneurs in the fruit processing industry for export. Number of cases: 5,458 (Department of Industrial Works, 2022) The sample size was determined using the criteria of Comey & Lee (1992) Number 500 samples using a multi-stage sampling method (Babbie, 2013) consisting of stratified sampling steps, divided according to the size of the business, industry as 2 types: small and medium sized industries with large industries, primary sampling is used. Probability By drawing lots and collect data from sample groups. Qualitative research Using group discussion techniques with experts Number of people: 11 persons, using a specific sample selection method to support the model Guidelines for Processed Fruit industry Management for Export to Sustainable Growth

2. Research tools Divided into Two types: research tools for qualitative research; with in-depth interview techniques The researcher will determine the interview guidelines with 4 elements: Organizational adjustment Business partners Market focus and production innovation and research tools for quantitative research. By using a questionnaire 4 episodes include: 1) General status of business organizations in the fruit processing industry for export. The nature of the questionnaire is a checklist type with 5 items. 2) Structure and general operating characteristics of the fruit processing industry for export. The nature of the questionnaire was a checklist of 20 items. 3) Guidelines for Processed Fruit industry Management for Export to Sustainable Growth The nature of the questionnaire is a rating scale with 100 items, which has criteria for giving the weight of the evaluation to 5 levels according to the Likert method (Likert, 1967) and 4) comments and suggestions regarding Guidelines for Processed. Fruit industry Management for Export to Sustainable Growth, in addition to the third part of the questionnaire, the questionnaire is open-ended with 5 questions. The qualitative research part with group discussion techniques. The research instrument was a conversation recording. For checking the quality of the tools, the researcher checks the index of congruence between the questions and the research objectives (IOC) according to the criteria of Rovinelli & Hambleton (1977) with a value between 0.60-1.00 and then tests it out (try - out) with a population that has similar characteristics to the population to be studied, this time numbering 30 people, the Cronbach 's Alpha coefficient was equal to 0.96, so it was used to collect data from the sample.

4. Statistics used in data analysis namely

4.1 Qualitative research with interview techniques Using content analysis methods Then

summarized into Guidelines for Processed Fruit industry Management for Export to Sustainable Growth. Classified into 4 components

4.2 Quantitative research uses descriptive statistics and reference statistics. and multiple statistics with the ready-made program SPSS (Statistical Packages for the Social Science) and the AMOS program (Analysis of Moment Structure), the model that should be used in consideration is evaluated in 4 values: Chi-square probability level value > 0.05 relative chi - square value < 2 Compliance level index values > 0.90 and the root mean power index value Two of the estimation errors < 0.08 (Arbuckle, 2016).

4.3 Qualitative research with group discussion techniques Use analytical methods Then summarize the comments and suggestions obtained from the group discussion.

Research results

Table 1 Mean and standard deviation of the importance levels of the components of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth as a whole, classified by the size of the organization.

Components of business management guidelines for the fruit processing industry for Exporting towards sustainable growth	Small and medium sized			Large size		
	\bar{X}	SD	level important	\bar{X}	SD	level important
Level of importance of elements	4.02	0.38	a lot	3.95	0.49	a lot
1. Overall	4.02	0.41	a lot	3.98	0.46	a lot
2. Market focus	4.01	0.42	a lot	3.96	0.48	a lot
3. Production innovation	4.00	0.45	a lot	3.87	0.64	a lot
4. Business partners	4.07	0.43	a lot	3.99	0.61	a lot

Table 1, the analysis results The level of importance of the components of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth Classified according to the size of the organization, it was found that Small and medium-sized businesses have Guidelines for Processed Fruit industry Management for Export to Sustainable Growth as a whole. It is important at a high level. The average value was 4.02 and when analyzing the importance level by aspect, it was found that every aspect was important at a high level. Arranged in order of importance from highest to lowest as follows: 1) Organizational adaptation has an average of 4.07 2) Market focus has an average of 4.02 3) Production innovation has an average of 4.01 and 4) alliance aspect had an average value of 4.00 respectively. As for large businesses, it was found that Guidelines for Processed Fruit industry Management for Export to Sustainable Growth as a whole It is important at a high level. The average value was 3.95 and when analyzing the importance level by aspect, it was found that every aspect was important at a high level. The order of importance from highest to lowest is as follows: 1) Organizational adaptation. has an average of 3.99 2) Market focus has an average

value of 3.98 3) Production innovation has an average of 3.96 and 4) in business alliances has an average of 3.87, respectively

Table 2 Statistical values used to compare the differences in the importance of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth, classified according to the size of the organization.

Guidelines for Processed Fruit industry Management for Export to Sustainable Growth	t-Value	P-Value
Overall level of importance of elements	1.83	0.07
1. Marketing Orientation	0.86	0.39
2. Innovative Production	1.08	0.28
3. Business Alliance	2.59	0.01 *
4. Organizational Adaptation	1.70	0.09
5. Innovative Production	1.08	0.28

* Statistically significant at the 0.05 level.

Table 2, it is found that the level of importance of the components of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth overall is not significantly different at the 0.05 level.

Table 3 The statistical value that evaluates the harmony of the structural equation model is compared first and After improving the model

Statistics	Criteria used for consideration	Before improvement	After renovation
1. Chi-square probability level value	valuable > 0.05	0.000	0.054
2. Relative chi-square value	valuable < 2.00	3.2 56	1.183
3. Compliance level index	valuable >0.90	0.708	0.962
4. The root mean square index of error estimation.	valuable < 0.08	0.067	0.019

Table 3, it was found that the root mean square index of error estimation was 0.067, passing the criteria for evaluating consistency with empirical data. But for other values, namely the chi-square probability equal to 0.000, the chi-square correlation value equal to 3.256 and the consistency index value equal to 0.708, it does not pass the criteria for evaluating consistency with empirical data. The researcher then proceeded to improve the model. By considering the Modification Indices as recommended by Arbuckle (2016) to eliminate some inappropriate observational variables one by one. Then proceed with the new processing. Do this until you get a model with all 4 statistical values passing the criteria. Therefore, it is considered that the structural equation model is complete and consistent with the data. Empirical and obtained the structural equation model of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth as shown in Figure 2

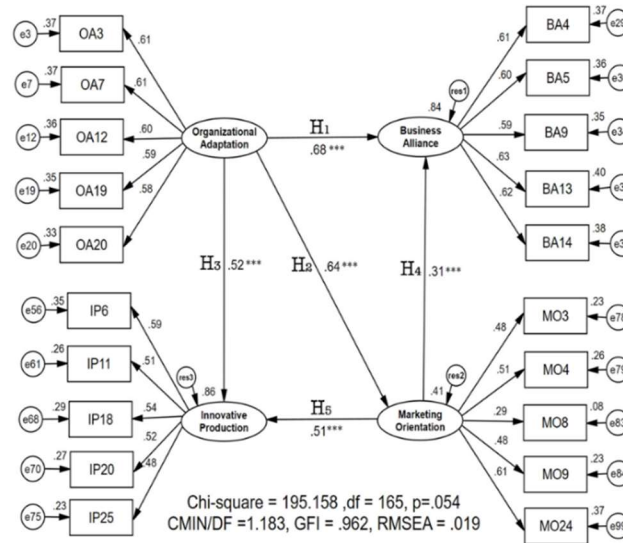


Figure 2 Structural equation modeling for business management in the fruit processing industry for exports towards sustainable growth

Summary and discussion

1. Summary of research results

1.1 Results of analysis of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth with qualitative research with in-depth interview techniques From experts, it was found that 4 elements can be classified : 1) Organizational adaptation 2) Market focus 3) Production innovation and 4) Business alliances

1.2 Important level of elements Guidelines for Processed Fruit industry Management for Export to Sustainable Growth It was found that overall it was important at a high level. There is an average of 3.99 for Guidelines for Processed Fruit industry Management for Export to Sustainable Growth. Arranged as follows: 1) Organizational adaptation aspect has an average of 4.03 2) Market focus has an average equal to 4.00 3) Production innovation has an average equal to 3.99 and 4) Business alliances has an average of 3.94 respectively.

1.3 Comparison of the importance levels of the elements of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth classified by industry business size. It was found that the level of importance of the components of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth Overall, when classified according to the size of the organization, there is no significant difference at the 0.05 level .

1.4 Analysis results Structural equation model Guidelines for Processed Fruit industry Management for Export to Sustainable Growth, before improving the model, found that the root mean square index of error estimation was 0.067, passing the criteria for evaluating consistency with empirical data. But for other values, namely the chi-square probability equal to 0.000, the chi-square correlation value equal to 3.256 and the consistency index value equal to 0.708, it does not pass the criteria for evaluating consistency with empirical data. Therefore, the researcher has carried out work to improve the model. By considering the Modification Indices to eliminate some

inappropriate observational variables one by one, it was found that the chi-square probability value was equal to 0.054, greater than 0.05. The chi-square value The index value is equal to 1.183 is less than 2.00, the index for measuring the level of consistency is equal to 0.962 is greater than 0.90, and the root mean square index of error estimation is equal to 0.019 has a value less than 0.08, so it can be concluded that all 4 statistics pass the evaluation criteria. It is consistent with empirical data.

1.5 Results Hypothesis testing to analyze causal influences between latent variables in Structural equation model, Guidelines for Processed Fruit industry Management for Export to Sustainable Growth, 5 assumptions, found to be in accordance with the 5 assumptions, including 1) H 1 : Components of organizational adaptation. Direct influence on the components Business partners Statistically significant at the 0.001 level. Has a value of Standardized Regression Weight = 0.68. 2) H 2 : Components of organizational adaptation Direct influence on the components Market focus Statistically significant at the 0.05 level with Standardized Regression Weight = 0.64. 3) H 3 : Components of organizational adaptation Direct influence on production innovation components Statistically significant at the 0.001 level with Standardized Regression Weight = 0.52. 4) H 4 : Components of market focus Direct influence on the components Business partners Statistically significant at the 0.001 level with Standardized Regression Weight = 0.31 and 5) H 5 : Components of market focus Direct influence on the components Production innovation Statistically significant at the 0.001 level with Standardized Regression Weight = 0.51

1.6 Qualitative research results Using group discussion techniques from 11 experts to consider and certify the model Guidelines for Processed Fruit industry Management for Export to Sustainable Growth. The meeting unanimously approved the model Guidelines for Processed Fruit industry Management for Export to Sustainable Growth.

2. Discuss the results

2.1 Guidelines for Processed Fruit industry Management for Export to Sustainable Growth in the area of organizational adaptation It has an average of 4.03, which is the side with the highest average. This is because the current and future competition situation is intense and highly fluctuating in business operations. Processed fruit industry Both within the country and abroad, especially exports, there will be more competitors. Including strong trade barriers. Therefore, we must focus on adapting in order to keep up with competitors. and can continue to conduct business This is consistent with the studies of Tort, Vayvay, & Cobanoglu (2022) and Bakhriddinovich & Elyorbek (2022) who focused on Adaptation of the fruit processing industry The current state of knowledge is reviewed. and guidelines regarding the fruit supply chain by the value of chain indicators of processed fruit Problems with post-harvest loss of fresh fruit. The role of parties involved in the value chain of processed fruit Technological trends in the production of processed fruit. Packaging problems of processed fruits Solving logistics problems of processed fruits and management of processed fruits for sustainable exports

2.2 From the research results When comparing the elements of Guidelines for Processed Fruit industry Management for Export to Sustainable Growth in the category of small and medium-sized industrial businesses. with large industrial businesses by Overall and each aspect, it was

found that overall there was no significant difference at the 0.05 level, namely the small and medium-sized industrial business sector has guidelines for managing the processed fruit industry for export. It is no different from large industrial businesses. This is consistent with the research of Zhou et al. (2022) which found that the size of the fruit processing industry small and large enterprises all have the same guidelines for managing the processed fruit industry for export, with emphasis on organizational adaptation in adopting marketing systems and supply chain systems for sustainable fruits. Guidelines for the supply chain of processed fruit Anyhow, the study of Sukhawattanakun (2022) defined agricultural marketing channels as continuous operations in the agricultural market process involving product and service flow from producers to final customers. Meanwhile, production characteristics such as farm resources and the ratio of incremental product value to purchasing cost per unit differed significantly between small, medium, and large farms.

2.3 From the results of the hypothesis testing, it was found that Components of organizational adaptation Overall influence on the composition The business alliance aspect, which is the highest overall influence, has a weight value of 0.88. and the highest direct influence has a weight value of 0.68, showing the empirical data that Guidelines for Processed Fruit industry Management for Export to Sustainable Growth There must be organizational adaptation to suit continuously changing situations. Important organizational adaptations are: Adaptation creates strong business partnerships that can promote and help grow your own business. Increase market share further Increase sales and profits sustainably This is consistent with the research of Wiphawani et al. (2023) and Sukhawattanakun (2022) who found that the processed fruit industry business has adjusted its operations in terms of supply chain management and logistics processes. Freeze Dried Marketing mix the process of creating innovation, production, and adding value to the business. This adjustment affects the potential development pattern and strength of the processed fruit industry.

Suggestions for next research

This research studies Guidelines for business management in the processed fruit industry for export to sustainable growth There is still the issue of creating a balanced market price mechanism. Including creating careers for the community thoroughly. Therefore, in the next research, we should study “Increasing the value of processed fruits to meet the needs of foreign consumers”

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