Critical Success Factors and Processed Fruit Export Supply Chain Improvement of Thai SME to India

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***Abstract*— This paper aims to explore business key success factors and readiness of Thai small to medium-sized enterprises (SMEs) manufacturing processed fruits to enhance processed fruit export supply chain from Thailand to India market. Business success factors were measured based on three dimensions; organization, technology, and environment. Then the correlation of factors was tested with an attentiveness to India market by using Paired-Sample t-test approach. Questionnaires were gathered totally from 111 processed-fruit SMEs in Thailand, especially tamarind, longan, and coconut enterprises. The findings reveal that governmental support, CEO's experience, and quality of product are considered as critical success factors. However, to improve an export supply chain of processed fruit, the suggestions in context of 3Ps (Private, Public, and Partnership) has been applied.**

***Keywords*—** *success factor; export supply chain; processed fruit; sme; Thailand*

1. Introduction

Terms of SMEs or small to medium-sized enterprises has become noticeable in Thailand since 1997 after an economy crisis. One of economy measures launched by the government was promoting small to medium-sized business in many aspects. Motivating SMEs in appropriate way leads to income distribution as SMEs consist of three main sectors involving the main economic sectors of the country; manufacturing, trading, and service. Hence, such sectors can support unemployment condition and create value-added comparing to Large-sized business which rely on high technology and imported resources. There are nearly three million SMEs existing in Thailand nowadays, which equal to ninety-nine percent of entire Thai enterprises.

Thai Processed food industry is a high capability industry in an export-competition viewpoint since Thailand is in the world top-ten rank of processed food exporter measuring by value. In 2015, the total export value of Thai processed food was 17,322.36 million USD which around 43.2 percent came from an exporting of SMEs sector [1]. One of the noticeable processed food of Thailand is processed fruits which have been also export globally in high proportion with a figure of 57 percent of Thai total fruit export (both fresh and processed fruit).

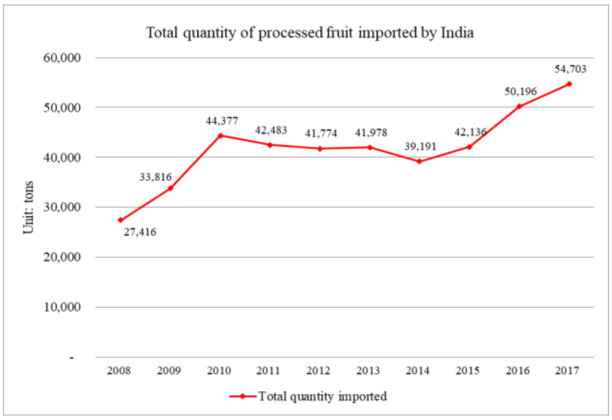

Figure 1. Total quantity of processed fruit imported by India

Turning to a destination market, India, imported figure of processed fruits has rose eminently over the last ten years from 27.4 thousand tons (US$40.1 million) in 2008, then doubled to 54.7 thousand tons (US$96.6 million) in 2017, as Figure 1 [2]. This reflects an interest of processed fruit and purchasing potential of Indian consumers. The information conforms to a study of [3] which indicates that Indian consumers tend to spend higher amount of money buying processed food due to their increased income. Furthermore, [4] also indicates that Indian middle-incomed consumers currently open their mind to new types of food such as instant food and ready-to-eat food more than those in the past.

To take a closer look into specific products, although India has been importing various processed fruits from Thailand, it imported just tiny amount of processed longan, tamarind, and coconut even though those products

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are the noticeable export goods of Thailand, as Table 1. This situation is questioned that are SMEs' performance and business success factors play an important role in this situation or not? Are Thai SMEs have potential and readiness to export? Therefore, this paper will investigate three dimensions on key success factors along with an attentiveness of export to India market to explore the business performance and readiness of processed fruit SMEs, especially processed tamarind, longan, and coconut, toward India market.

Table 1. Total quantity of processed tamarind, coconut, and longan imported by India

Unit: tons

Product	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016
Processed tamarind	389	407	356	529	325
Processed coconut	7	34	33	65	0
Processed longan	0	0	0	32	41
Total	**396**	**441**	**389**	**626**	**366**

2. Literature Review

This topic provides reviews of literature which relate to success factors and processed fruit export supply chain improvement of Thai SMEs to India market in terms of both theoretical idea and related research.

2.1 TOE framework

Ref. [5] had been adjusted the TOE framework (technology, organization, and environment) to be suite with Thai context. First, organizational context was defined in terms of such as business size, firm culture, organizational structure, management style, innovation capability, and quality of human resource. Technological dimension concerns about both internal and external technology aspects for example, machine efficiency, capacity of machine, information quality, and compatibility. The last factor, environmental context, is a field in which an organization conducts its business with external tasks such as competitors, suppliers, customer requirement, accessing to resource, stakeholders, and government influence, as Figure 2.

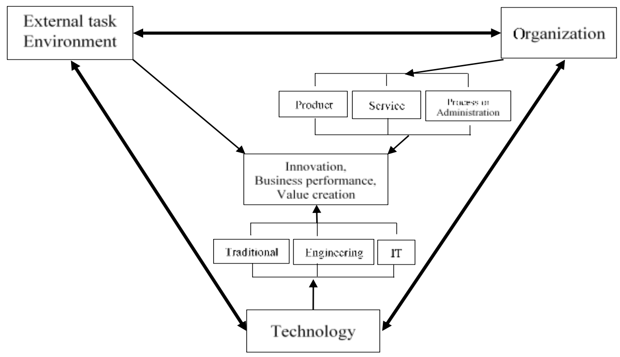

Figure 2. TOE framework modified by [5]

2.2 Business success factor

Ref. [6] studied that three-dimensional concurrent engineering (3-DCE) framework, consists of product, process, and supply chain design, is a good framework for firms in analysing and prolonging the success factors and allow them to concentrate on performance of operation and result in success. However, the framework lacks of the consideration for hidden components such as culture, leadership and governance, knowledge, image and relationship. Whereas a study of [7] showed that from 25 critical success factors retrieved from 26 supply chain management papers, nine critical success factors were selected using Pareto analysis namely, (1) use of information technology (2) top management commitment, (3) partnership/integration (4) service quality (5) processes (6) resource capability (7) government intervention (8) skilled employee and (9) trust. These are called vital CSFs as those nine success factors can give better outcome to the industry than the rest. The study is accordant with ref [8] who report that there are many key success factors for supply chain of coffee, dried fruit and fresh vegetables sectors. However, the most distinguish success factors selected by the entrepreneurs are high value market penetration, robust vertical relationship in supply chain, and partners' engagement and trustworthiness.

As for SME success factors, a study of [9] use exploratory and confirmatory factor analysis to construct critical success factors model for SMEs in food processing industry in Malaysia, resulted in the reliable and valid model, with the satisfied fitness, consists of eight latent with 22 observe variables. The latent variables are quality assurance, leadership, information management, customer focus, human resource management, process management, supplier focus and corporate planning. As for Thai SMEs perspective, ref. [10] use partial least square (PLS) method to analyse key success factors influencing SMEs business performance in Thailand by using a model consists of three latent constructs which are proactive personality – affirmative leadership (10 observe variables), market orientation (19 observe variables), and market intelligence (12 observe variables) from literature review and one dependent construct which is firm performance (8 observe variables). The overall findings indicated that the important of proactive personality – affirmative leadership is the success factor that indirectly impact the firm's performance and directly impact the market orientation and intelligence.

2.3 Business performance

Business performance can be measured in several ways. In traditionally, the measurement of business or company performance will focus on financial terms. However, many scholars have suggested that to comprehensively analyse business performance, the use of both financial and non-financial dimensions can measure business performance in terms of both operational and marketing performance [11]. To start a business, firm or company will face some obstacles due to financial problem or technology in production. Ref. [12] studied about business performance of SMEs in Indonesia by identifying obstacle factors faced by SMEs which are competition barriers, financial access, price of energy; technology, inefficient production cost, economic factors, management skill, process, limitation of sales, and raw material.

Building identity and reputation are also noteworthy for starters like SMEs. As for small-sized business, three themes that business owners have to concern to create identity are consistency, internal training, and human capital. Moreover, three themes to build reputation are credibility, transparency, and legitimacy [13].

3. Data Collection

In order to conduct this study, the population of the research are Thai small to medium-sized enterprise (SMEs) who produce processed fruit within the scope of processed longan, processed tamarind, and processed coconut. There are total 111 SMEs manufacturing such products in Thailand, according to Department of Business Development [14], a Thai governmental source. Due to few population studying in the research, the researcher can gather data from entire population so that the sample size is equals to the number of population.

Questionnaires were used to gather the data from respondents. Each questionnaire consists of three main parts in order to completely collect its business success factors and export readiness information. The first part is general information of a company such as business-running age, number of employees, and type of production. The questions will be asked with choice-answer type. Next part is an export experience information and a level of attention for exporting products to India market. The third part is a firm's success factors in context of organizational, technological, and environmental questions.

4. Methodology

The analysis of this paper is based on a conceptual framework, as Figure 3.

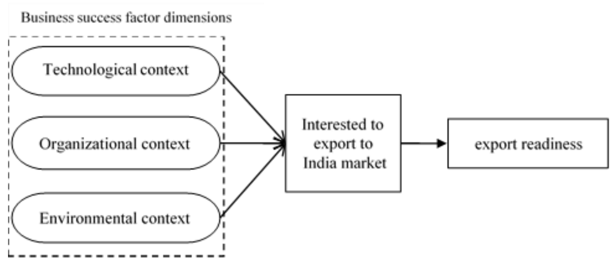

Figure 3. Conceptual framework

This paper uses these three contexts, technological, organizational, and environmental, as perspectives of business success factors based on an adoption from [6] who adjusted an TOE framework (Technology, Organization and Environment framework) with the business performance to Thai context. Each context comprises of three factors so that there are totally nine business success factors tested in this study. In this part, the respondents will be asked how they agree with each factor that firm has been used in doing business with 5-point Likert scale.

In the same way, a level of attention (or interest) for exporting products to India market will be ask with a level of 5-point Likert scale as well.

Then, a Paired-Samples t-test approach will be used to test each business success factor with a level of attention for exporting products to India market. As a result of methodology, this study aims to get a correlation coefficient of each success factor. In other words, which factors are important driving SMEs to be success in business when they export their products to India market.

5. Results

After the questionnaires were sent to 111 SMEs, there is 76.6 percent of response rate (or 85 questionnaires returned). 7 questionnaires (6.3 percent) were returned since firms went out of business, while there is no response from the rest 19 SMEs, which is equal to 17.1 percent.

5.1 Demographic characteristics

Most of respondents are small-sized enterprises, following by medium-sized enterprises with a figure of 79 percent and 21 percent, respectively. 38 percent of respondents have been running business for more than 10 years, following by 6-10 years (29 percent). Most of the enterprises get 10,000,000 – 50,000,000 THB as their annual revenue with a figure of 34 percent, following by 28 percent of 50,000,000 – 100,000,000 THB. Most of respondents have their own product's brand (41 percent), while having own brand with OEM (Original Equipment Manufacturer) production took place at 35 percent, as Table 2.

Table 2. Descriptive statistics of demographic characteristics

Items	N	%
Year of running business		
More than 10 years	32	38
6-10 years	25	29
3-5 years	14	16
1-2 year(s)	10	12
Less than 1 year	4	5
Number of employee		
10-50	54	64
Less than 10	13	15
51-100	11	13
101-200	7	8
Annual business revenue (THB)		
10,000,000 – 50,000,000	29	34
50,000,000 – 100,000,000	24	28
1,000,000 – 10,000,000	16	19
100,000,000 – 200,000,000	11	13
500,000 – 1,000,000	4	5
Less than 500,000	1	1
Production type(s)		
Own brand	35	41
Own brand and OEM	30	35
Brand, no brand, and OEM	10	12
No brand	5	6

5.2 Export experience and attentiveness toward India market

65 percent of respondents are still exporting their products abroad yet 29 percent has never export before. Meanwhile 6 percent used to export in the past.

As for attention of India market, there are 76 enterprises (or 89 percent) who are interested in export their products to India market by both types; their brand and OEM, as Table 3. The rest 11 percent of respondents who are not interested explains that they have faced with insufficient quantity of production and presently aims to focus just only domestic market.

Table 3. Export experience and attentiveness to India market

Items	N	%
Export experience		
Export up to present	55	65
Never export before	25	29
Used to export	5	6
Interest to India market		
Interested	76	89
Not interested	9	11

5.3 Correlation analysis

Overall, the significant level of all three main pair tested are lower than 0.1 so that significant level of those pairs were accepted with a degree of confident 90 percent (reject if significant level > 0.1).

Environmental dimension has the highest correlation when tested with a level of attention to export goods to India market with a figure of correlation 0.692, following by organizational context, and technological context, respectively, as Table 4.

Table 4. Correlations of three main context tested

	Variables	Correlation	Sig.
Pair 1	Attention to India market & Technological context	0.502	0.048
Pair 2	Attention to India market & Organizational context	0.558	0.062
Pair 3	Attention to India market & Environmental context	0.692	0.086

After total nine success factors were tested, the results can be illustrated as in Table 5. However, a significant level of some factors were reject because their significant level is over 0.1 (Sig. > 0.1 hence, reject). Thereby, variables with accepted significant level remain three factors which are leader's experience, quality of products, and assistances from government (with star marks).

Table 5. Correlations of Factors Tested

Variables	Correlation	Sig.
Organizational factors		
- Apply proper strategies	0.001	0.990
- Leader's experience*	0.205	0.060
- Good organization management	0.099	0.366
Technological factors		
- Quality of products*	0.246	0.023
- Sufficient technology of production	0.009	0.932
- Production flexibility	0.024	0.831

Environmental factors		
- Good support form stakeholders	0.095	0.388
- Assistances from government*	0.317	0.091
- Improving according to customer feedback	0.028	0.798

6. Discussion

The finding reveals that governmental assistance factor has the strongest relationship through environmental context and entire business success factors tested as well, with a correlation of 0.317. This means that government supports are an important success factor when SMEs design to export their products to India market. As for organizational context, leader or owner's experience is also a significant success factor with the correlation of 0.205. Meanwhile, quality of products is a notable business success factor among technological factors with the correlation of 0.246.

These present that Thai SMEs have strong points to be success in business and ready to export their products to India as they have good quality of product and experienced leader running more and more year in business. Majority of SMEs have their own brand and can produce various types of product as OEM manufacturing, which able to serve demand of customers in several ways. Nevertheless, even government provides SMEs the information about export process and taxation, some respondents suggest that they intensely want the government to provide some information about Indian consumer behaviour and trade partner reliability to adjust products in which types Indian consumers prefer and to be sure about trade credit and bargain.

6.1 Suggestion for enhancing processed fruit export supply chain

This topic provides suggestions to improve processed fruit export supply chain in perspectives of 3Ps (Private, Public, and Partnership) based on the findings of this study.

As for private sector, SMEs should maintain a quality of products and develop some innovations that can create higher value-added product to serve premium-level consumers in India market due to their high purchasing power. On the other hand, other than quality of product which is one of critical success factors shown in this study, SMEs should have more production flexibility. Producing several types of goods can support various segment of consumers and can spread of selling risk, namely, premium consumer, moderate consumer, niche consumer, and low-incomed consumer. Besides, creating a network of SMEs manufacturing processed fruit can be advantageous to enterprises to have higher bargaining power.

According to public sector, a government should have "one-stop service office" for providing not only information about exporting and importing taxation, and documentation when SMEs are interested to export and also Indian consumer behaviour, such as what flavour they like and which packages are matching with customers' lifestyle. The one-stop service in this context can be refer to both office buildings and online website with real-time conversation chatting with trained officers. Furthermore, collaborations between Thai and India government about trade regulations or customs clearing can pave the way for Thai SMEs to easily get to the destination market.

As regards partnership, a business matching arranged by Thai government, between Thai producers (SMEs) and Indian traders or import agents should be continuously happen with a cooperation of Thai Trade Centre in India to make a confident for both Thai SMEs and Indian traders when contact and negotiate.

7. Conclusion

The result of this study can be used to improve export supply chain of processed fruit from Thailand to India market in order to flow properly. Thai SMEs have a readiness to export due to their success factors, product quality, business experiences, and governmental assistances. Besides, India market is interested in new kinds of food such as ready-to-eat food and portable snacks to serve an urbanized lifestyle. As a consequence, from the contexts of technological, organizational, and environmental, Thai SMEs have crucial success factors and readiness for exporting processed fruit (longan, tamarind, and coconut) to India market, especially a government-supporting factor which can push the SMEs toward an attentiveness of new market, as well as collaborations within SMEs network and SMEs together with involving governmental department.

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