

# Problems and Needs of Frozen Shrimp Industry Small and Medium Enterprises in the Central Region of the Lower Three Provinces

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**Abstract**—Frozen shrimp industry plays an important role in the development of production industry of the country. There has been a continuing development to response the increasing demand; however, there have been some problems in running the enterprises. The purposes of this study are to: 1) investigate problems related to basic factors in operating frozen shrimp industry based on the entrepreneurs' points of view. The enterprises involved in this study were small and medium industry receiving Thai Frozen Foods Association. 2) Compare the problems of the frozen shrimp industry according to their sizes of operation in 3 provinces of the central region Thailand. Population in this study consisted of 148 managers from 148 frozen shrimp enterprises Thai Frozen Foods Association which 77 were small size and 71 were medium size. The data were analyzed to find percentage, arithmetic mean, standard deviation, and independent sample T-test with the significant hypothesis at .05. The results revealed that the problems of the frozen shrimp industries of both size were in high level. The needs for government supporting were in high level. The comparison of the problems and the basic factors between the small and medium size enterprises showed no statistically significant level. The problems that they mentioned included raw materials, labors, production, marketing, and the need for academic supporting from the government sector.

**Keyword**—Frozen shrimp industry, problems, related to the enterprise, operation.

## I. INTRODUCTION

FROZEN shrimp industry gets raw materials from both natural resource and shrimp farming for the processing of different types of frozen shrimp products of which 90% are exporting products. Frozen shrimp product is one of high potential export of the country [12]. With high potential in production and good quality of products together with the increasing demand of world market, Thai frozen shrimp production has increased at satisfaction level resulted in one of the highest agricultural incomes of the country [10]. At present, there has been high competition in world frozen food market together with the change of imported regulations on non-tariff barriers especially on the part of health and environment. In addition, the world economic recession caused the consumers to be more careful with their expenses resulted in less consuming of frozen shrimp products. As a consequence, there had been the deceleration of frozen shrimp

export during 2007 and 2010[12]. Thai frozen shrimp export decreased from 68.2 M. Baht in 2007 to 11.3 M. Baht in 2010, or the frozen shrimp production decreased from 238 tons to 91 tons. The decrease of export value of Thai frozen shrimp products affected the producers drastically [10].

With the problems mentioned above, the researcher had an interest in investigating the problems and needs of small and medium frozen shrimp industry in three provinces of the central region Thailand. The results of the study can suggest some guidelines in encouraging the production of Thai frozen shrimp to maintain its world market share and expand new export market.

## II. METHODOLOGY

### A. Purpose of the Research

1. To investigate problems related to basic factors in operating frozen shrimp industry based on the entrepreneurs' points of view. The enterprises involved in this study were small and medium industry receiving Thai Frozen Foods Association [9].
2. To compare the problems of the frozen shrimp industry according to their sizes of operation in 3 provinces of the central region Thailand [2], [3].

### B. Hypothesis of the Research

The Thai frozen shrimp industry of small size and medium size shows no difference in their needs, problems, and basic factors in operation.

### C. Study Variables

1. Independent variables included the sizes of Thai frozen shrimp industry which are small size and medium size.
2. Dependent variables included basic factors in operation consisting of raw materials, labors, production, marketing, and academic support from the government sector.

### D. Population

Population in this study consisted of 148 managers from 148 frozen shrimp enterprises receiving Thai Frozen Foods Association which 77 were small size and 71 were medium size [2], [3], [9].

### E. Instruments and Data Analysis

The researcher developed the questionnaire with the following process:

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1. Study the information from the related theories, documents, and researches.
2. Write the 1st draft of the questionnaire to cover the objectives and the scopes of the study.
3. Present the questionnaire to the specialists for the validation of face validity and to find the Item Objective Congruence Index (IOC). The items with the IOC lower than 0.5 were revised; so, the overall 67 items had the IOC values between 0.60 and 1.00 [13], [14].
4. Try out the questionnaire with 30 samples to find the reliability, alpha coefficient by Cronbach. The overall reliability of the questionnaire was 0.7967 [4].

#### F. Data Collection

The researcher asked for the official permission letter from the Faculty of Industrial Education, Rajamangala University of Technology Suvarnabhumi Nonthaburi Centre for the distributing of the questionnaires. The questionnaires were sent to 148 enterprises and 125 copies were returned or 85.00 % of the population.

#### G. Data Analysis

The data were analyzed by computer program after being checked for the completion. The data were transformed into coding for the analysis. The demographic information was in the form of checklist of which the data were analyzed to find frequency and percentage. The problem part was in the form of rating scales of which the data was analyzed to find arithmetic mean and SD based on the evaluation criteria by Best [4]. The comparison of the problems and the basic operating factors were analyzed to find the difference by T-test [14]. Other suggestions were in the form of open-ended which were analyzed by content analysis to find frequency and grouping.

### III. RESULTS

The results on the demographic information of Thai frozen shrimp industry showed that most industries were small enterprises with the age of entrepreneurs between 41 and 50 years old. Most of them had master degree and have been operating the business for about 11-15 years. The products are sold locally and exported. They reported the trend of the Thai frozen shrimp industry to be expanding in the future. Most of them were the Thai Shrimp Farmer Association members. Most of the enterprises had their business capitals from bank loans. Half of the enterprises reported their operation time during the day while the other half conducted their operation both day and night shift. The results of the operation problems are shown in Table I.

TABLE I  
MEAN AND SD OF THE OPERATION PROBLEMS IN SMALL AND MEDIUM ENTERPRISES

Operation problems	$\bar{X}$	S.D	$\bar{X}$	S.D	Level
Raw materials	3.31	0.54	3.43	0.52	Medium
Labors	3.57	0.59	3.63	0.61	High
Operation	3.59	0.55	3.51	0.55	High
Marketing	3.56	0.55	3.53	0.59	High
Academic support from the Govt. sector	3.66	0.75	3.69	0.75	High
<b>Total</b>	<b>3.54</b>	<b>0.60</b>	<b>3.56</b>	<b>0.60</b>	<b>High</b>



Fig. 1 The process of selecting shrimp [12]



Fig. 2 The job cuts was a piece of shrimp and prawns [12]



Fig. 3 Size, after the trimmed shrimp and prawns [12]



Fig. 4 Frozen shrimp and exports [12]



Fig. 5 Frozen shrimp and exports the other one [12]



Fig. 6 Meat products and take off our tail [12]



Fig. 7 The shrimp through the criteria [12]

It can be seen from Table I that in general, the operation problems are at high level. When considering in details, it was found that 4 aspects, i.e. labors, production, marketing, and the

need for academic supporting from the government sector were in high level while the only aspect- raw materials was in medium level.

The results revealed that the problems of the frozen shrimp industries of both sizes (small size and medium size) were in high level. The needs for government supporting were in high level. The comparison of the problems and the basic factors between the small and medium size enterprises showed no statistically significant level. However, the only one aspect with the different need was on academic supporting from the government sector.

The interviewees reported their needs on several aspects. The 1st aspect was on raw materials which was not enough for their production. In other words, they could not keep their stock according to the market demand [10]-[12], [15]-[18], and [21]. They also mentioned the insufficient labor problem and high labor turnover. On the production side, the main problem was on the management of industrial wastes. About marketing, there were problems on dealers and uncertain market environment. They needed more marketing opportunity and marketing channels [1], [5], [18], [22],

Some suggestions from the open-ended included the support from the government on raw material supply and its quality. The raw material cost was rather high though it came directly from the shrimp farmers. Moreover, the labor cost was higher due to the former government policy on the minimum labor cost at 300 baht/day and 15,000 baht minimum salary for the graduate. There was also price cutting among the frozen shrimp enterprises. They required better support from the government on cheaper bank loan, infrastructure, and counseling services in increasing product quality. For continuing long term planning, they needed the measurement on the control of factory number. The authority should issue quality certification to the enterprises faster than nowadays [10], [12], [19], [20].

In conclusion, the needs for government supporting were in high level. The comparison of the problems and the basic factors between the small and medium size enterprises showed no statistically significant level [12].

#### IV. DISCUSSION

##### A. Raw Materials

The findings in this part were congruent with the report in the Industrial Economic Journal [1] showing that the raw materials were not enough for the production system.

##### B. Labors

The findings in this part were congruent with the study by The Office of shrimp Economics [10] revealing that the higher labor cost, i.e. the minimum labor cost at 300 baht/day and 15,000 baht minimum salary for the graduate resulted in higher production cost.

##### C. Production

The findings in this part were congruent with the study by Apisek [1] mentioning about the price cutting among the enterprises resulted in lower margin.

#### D. Marketing

The finding in this part were congruent with the report on The Journal of the industry [8] showing the need of more professionals in marketing.

#### E. Support from the Government Sector

The findings in this part were congruent with the report on the Trend of The Economy and Society [6], [7] stating that the government sector should help the enterprises on cheaper bank loan, infrastructure, and counseling services in increasing product quality. For continuing long term planning, they needed the measurement on the control of factory number. The authority should issue quality certification to the enterprises faster than nowadays.

### V. CONCLUSION

#### A. Producers or Enterprises

The findings suggested some guidelines in preventing the problems and prepare for the readiness of Thai frozen shrimp production.

#### B. Government Sector

The findings provided useful information related both private and government sectors in planning and developing measurements or policies to solve the export problems of Thai frozen shrimp products.

#### C. Education

The findings provided useful information for educators and students to be applied in their further researches.

#### D. Research

The findings suggested some guidelines in developing a curriculum on industrial engineering or industrial technology to be in line with the problems and solutions of the enterprises. This supports the strategic plan on sustainable economic structure and the structure of increasing production and the products and services' values based on the knowledge base and being Thai together with the preparation of entering AEC.

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