The Guidelines for Preparation of the Seafood Industry move towards migrant workers returning to the country. Case Study: Samut Sakhon Province.

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Abstract

This research aimed to recommend policy, planning, logistic and supply chain readiness and human resource management of the seafood industry moving towards migrant workers return to the country. It was mixed with both qualitative and quantitative research. The sample group consisted of 165 entrepreneurs and 8 experts. Sample collection, random sampling, and instruments depending upon each of the research stages were assigned appropriately Statistical analysis tools in this research were percentage, mean, standard deviation stepwise multiple regression analysis (MRA).

The research results were: 1) The guidelines for the preparation of the seafood industry moving towards migrant workers return to the country has four approaches: organizational Planning, adhering to Provincial Policies, worker Planning, adopting Modern Technology as THAILAND 5.0 Policy and agriculture for export 2) Entrepreneurs potentiality of logistics and supply chain and human resource management for the seafood industry of Samut Sakhon, the potential strategic of government support and development of the central lower region Samut sakorn province, potential competing models moving towards migrant workers return to the country. Developing potentiality of seafood industry entrepreneurs at Samut Sakhon. Overall, the high level ($\bar{X}$=4.29, SD=0.54, $\bar{X}$=4.31, SD=0.59, $\bar{X}$=4.28, SD = 0.72, $\bar{X}$= 3.64, SD=0.73, respectively, 3) potential entrepreneurs

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3 sides affecting the new Labor market, expansion of trade, cost, and revenue of the entrepreneurs' variation was 30.5%, 18.5%, 11.70%, 4%, respectively

Introduction

The overall trend of the processed seafood industry in Thailand from 2023 to 2025 is expected to grow by 4-5%, driven by urban expansion and recovery from the COVID-19 pandemic, which has led to increased demand in the hotel, restaurant, and seafood industries (Suppakorn Kornboontritos, 2024). The seafood industry is divided into three main groups: 1) Chilled food, which involves storing meat and seafood at low temperatures between 0-5°C; 2) Frozen food, where food is preserved at temperatures below -18°C; and 3) Processed food, which refers to final products made from processed meat and seafood. In the previous year, the market demand for chilled and frozen products accounted for approximately 90% (Nantapong Puntaweesuk, 2024). However, analysts from Krungsri Bank predict a slight contraction in Thailand's overall seafood industry due to significant pressures such as rising fuel prices, raw material costs, reduced aquatic animal populations, and labor costs. Thailand's seafood industry relies heavily on migrant labor, particularly in Samut Sakhon Province, the largest seafood production hub in the country. Samut Sakhon has coastal access to the Gulf of Thailand, with Mueang Samut Sakhon District being rich in seafood, leading to various processed seafood products such as crispy fish skins, fish tofu, Tom Klong fish, dried fish, fish meal, crispy shrimp, anchovies with herbs, fish balls, shrimp balls, and squid balls. Modern machinery and technology have been incorporated into the production processes. Samut Sakhon's processed seafood products are well-regarded and exported domestically and internationally. However, the province's seafood industry faces significant labor challenges.

It is widely recognized that migrant labor is crucial in the lower labor market, particularly workers from Myanmar, Cambodia, and Laos. There are 1,972,504 migrant workers legally authorized to work across Thailand, with many more unregistered or illegally residing in the country (Registration and Information Division, Department of Foreign Workers Administration, Ministry of Labor, 2023). Approximately 8.099 million workers, or about 20% of the total workforce, are employed in the industrial sector. Over the past year, the industry has lost around 700,000-800,000 workers, leading to labor shortages, and it is anticipated that the labor shortage will worsen at all levels, particularly in the seafood industry, which heavily depends on migrant workers from Myanmar.

Notably, Myanmar has fully opened its borders, inviting global business investment and trade within its country. Thailand may face severe labor shortages as three-quarters of Myanmar's migrant workers express their desire to return home. Thai entrepreneurs must quickly adapt to this evolving situation. Regardless of what happens in the future, adapting to the changing circumstances will be the solution to the challenges ahead.

Therefore, this research aims to urgently study the seafood industry's preparedness in response to the repatriation of migrant workers, analyzing the impact on supply chain management and human resource management within Thailand's seafood industry to build competitiveness in the event of a migrant workforce exodus.

Objective

To study the trends and pathways for preparing the seafood industry for the repatriation of migrant workers: A case study of Samut Sakhon Province. To analyze the logistics and supply chain management capabilities and human resource management of the seafood industry concerning the repatriation of migrant workers and its impact on the development of the seafood industry in Samut Sakhon Province.

Conceptual Framework

Logistics Management Concept

Logistics management refers to the various processes involved in planning, implementing, and controlling an organization's operations to facilitate the movement, storage, consolidation, and distribution of raw materials, components, or even services most efficiently and effectively, with a focus on customer needs and satisfaction (Nattavee Utakrit, 2025).

Supply Chain Management in the Seafood Industry

Supply chain management refers to the management of planning, procurement, production, and movement of goods, sales, and services (Kamolchanok Suttivathnarueput, Salisa Phamornsatit, & Chakkrakrit Duangpattra, 2015) The seafood industry refers to establishments registered for seafood production, sale, and processing (Kamolchanok Suttivathnarueput, Salisa Phamornsatit, & Chakkrakrit Duangpattra, 2015).

Human Resource Management Concept

Human resource management refers to the processes of workforce planning, recruitment, selection, training, relocation, and promotion aimed at aligning individuals with job roles, optimizing resource utilization, controlling labor costs, and retaining capable employees (Nisadark Wetchayanon, 2018).

Migrant Labor Concept

Migrant labor refers to individuals who relocate from one country to another primarily to work rather than spend their own money. This includes anyone typically recognized as a migrant worker, excluding those employed along border areas, artisans, or members of specialized groups who enter for short-term employment, as well as seafarers and foreign crew members. Furthermore, according to the International Labor Organization Convention No. 143, migrant labor does not include individuals entering for education, training, or temporary work based on employer requests, where the individuals must leave after completing their work (Department of Labor, 2022).

Strategic Planning Concept

Strategic planning refers to organizational decision-making regarding objectives to be accomplished and methods to achieve success. This includes setting goals and purposes organization-wide, which is divided into three levels: corporate strategy, business strategy, and functional strategy.

From the study of concepts, theories, and related research on preparedness in the seafood industry for the repatriation of migrant labor, research by Surasit Boonchunon (2020) identified factors influencing the competitiveness of Thailand's frozen seafood industry. The research found that for Thailand to remain competitive, human resource development is essential. This finding aligns with research by Petcharat Heeminkool, Nittaya Simakutpun, Nuntawat Puttarakornnun, and Siriyaporn Malain (2024), which studied human capital development in a sample of 158 people. The research management, such as education, development, training, workload, time, and cost, impacts operator competency.

This finding is also consistent with the study by Oumakhlouf (2024), which examined the causal relationships of strategic human resource development practices,

focusing on motivation and organizational performance, using SMART PLS structural equation modeling. The study found that elements of strategic human resource management positively impacted several factors: compensation, training, information sharing and communication, employee engagement, leadership, and professional competency.

Other positive impacts were identified in logistics management, finance, and accounting, raw material procurement of sufficient quality and quantity, market positioning, organizational coordination, quality assurance systems, and the ability to adapt to environmental fluctuations, all of which enhance competitiveness.

Additionally, the study by Nantapong Nantapong Puntaweesuk (2024), an investment analyst, found that increasing costs, such as fuel prices, raw material costs, reduced seafood populations, and migrant labor wages, affect competitiveness. Business operators must be prepared and have a strategy in place for the repatriation of migrant workers.

Research Conceptual Framework

Independent Variables

| Dependent Variables |

- Logistics and supply chain management of the seafood industry and human resource management of the seafood industry

- Strategic potential for the development of the lower central region (Samut Sakhon Province)

- The management potential of competitive strategies regarding the repatriation of migrant workers

Development outcomes of seafood industry entrepreneurs in Samut Sakhon Province

- Market Expansion
- Management cost
- Entrepreneur income
- New worker market

Research Methodology

Population

The population consists of 290 seafood industry entrepreneurs registered with the Department of Industrial Works in Samut Sakhon Province.

Sample

Stratified random sampling techniques were used, and the sample size was determined using the Krejcie and Morgan table.

The sample includes 165 seafood industry entrepreneurs registered with the Department of Industrial Works. The researcher determined the sample size based on the probability sampling table of Krejcie and Morgan, with a confidence level of 95% and an acceptable margin of error of 5%. The probability sampling method used was stratified sampling according to the location of the licensed business establishments. The researcher then applied simple random sampling for the final selection.

Experts

The experts consist of eight individuals with expertise in the seafood industry,focusing on logistics and supply chain management as well as human resource management (Thanin Silpcharu, 2015).

Research Tools

The research tools consist of two forms: a questionnaire and an interview using Focus Group techniques are as follows:

Quantitative Research Tools

1. The questionnaire is divided into three parts:

   • Part 1: General information questionnaire

   • Part 2: Questionnaire on logistics and supply chain management potential and human resource management in the seafood industry

   • Part 3: Open-ended vision questionnaire regarding the impact of government policies on the seafood industry

The researcher validated the content of the questionnaire by evaluating the consistency of the questions, which had to score of 0.5 or higher. The index values showed that all questions met the criteria. The questionnaire was tested on a sample group of 30 participants to assess reliability, with a Cronbach's alpha value of 0.970, which meets the set standards.

Qualitative Research Tools

2. The interview, conducted through Focus Group techniques, involved eight key informants. The steps were as follows:

Step 1: Identifying and preparing the experts

Step 2: Conducting the Focus Group interviews

Step 3: Reporting the results

Data Analysis

For qualitative data, the researcher performed content analysis. The following statistical methods were used for the research

The analysis of interviews was conducted with eight experts in the seafood industry with expertise in logistics and supply chain management, as well as human resource management, through content analysis. For quantitative data, the researcher used statistical software for social science research. The following statistical methods were applied:

1. Descriptive statistics such as frequency and percentage were used for analyzing the general data of the respondents.

2. The potential of logistics and supply chain management, human resource management, the strategic potential for developing the lower central region (Samut Sakhon Province), and the management potential of competitive strategies for the repatriation of migrant workers were analyzed using means and standard deviations.

3. The predictive model for the development outcomes of the seafood industry entrepreneurs were analyzed using multiple regression analysis (MRA) through stepwise regression analysis.

4. For the analysis of open-ended responses, content analysis was used.

Results and Discussion

Qualitative Research Findings Based on the focus group interviews with eight experts, the research findings regarding the preparation of the seafood industry for the repatriation of migrant workers in Samut Sakhon can be summarized into four key approaches:

1. Organizational Planning:

Business operators must have a comprehensive understanding of the regulations, rules, and conditions for bringing migrant workers into the country. They need to consider both domestic and international environmental factors when formulating the province's

migrant labor strategy. This should be holistic and integrated, emphasizing coordination with the Department of Labor, the Department of Fisheries, the Marine Department, the Ministry of Labor, the Marine Police, and the Department of Welfare and Human Rights Protection. Such coordination will facilitate smoother business operations. Additionally, business operators must focus on managing their production chains to reduce costs and add value to their products, moving beyond simply producing basic commodities. There is also a need to develop domestic human resources and encourage more local workers to join the seafood industry.

2. Adhering to Provincial Policies:

Business operators should align with the province's master plan for managing migrant labor. Samut Sakhon has established a highly efficient center for migrant labor management. This system ensures legal compliance in employing migrant workers while protecting and enhancing their quality of life according to human rights principles. The goal is to foster harmony between migrant workers and residents in Samut Sakhon.

3. Workforce Planning:

Plans include increasing the recruitment of workers from countries such as Vietnam and Bangladesh, as well as informal labor. At the same time, the province aims to reduce reliance on migrant labor by developing the skills of Thai workers, promoting value-added products, and implementing technology to reduce the need for foreign workers. Moreover, the focus will be on aquaculture for processing and exporting. These efforts will align with the master plan, which includes policies and operations to secure jobs for both Thai and migrant workers in Samut Sakhon.

4. Adopting Modern Technology:

To reduce dependence on migrant labor, businesses should increase the use of Thai labor and AI machinery. There should be provisions for importing other foreign workers as needed, increasing aquaculture efforts, and developing new processed products to expand trade and investment. Business operators also need to improve logistics systems and supply chain management to reduce costs in production and sales promotion.

Quantitative Research Findings

The first research objective was to analyze the factors influencing the development potential of seafood industry entrepreneurs in Samut Sakho Province. The research results were as follows:

Step 1: The relationships between variables were tested based on the sample data. The factors affecting the development potential of seafood industry entrepreneurs in Samut Sakhon Province were analyzed in three areas:

1. Logistics and Supply Chain Management and Human Resource Management Capabilities in Thailand's seafood industry: X_1

2. National Economic and Social Development Strategy and Lower Central Region Development Strategy (Samut Sakhon Province): X_2

3. Management Competitiveness Capabilities related to the migrant worker's return to their home countries: X_3

These factors were analyzed using Stepwise Multiple Regression Analysis to identify which factors influenced the development potential of seafood industry entrepreneurs in Samut Sakhon Province. The four aspects analyzed were:

1. Market Expansion: Y_1
2. Cost Management of Seafood Industry Operations: Y_2
3. Revenue of Business Entrepreneurs: Y_3
4. New Worker Market: Y_4

Analysis Results

Table 1 presents the correlation coefficients between the three key factors and the development potential of seafood industry entrepreneurs in Samut Sakhon across the four areas:

	X_1	X_2	X_3	Y_1	Y_2	Y_3	Y_4
X_1	1						
X_1	$.756^{**}$	1					
X_1	$.624^{**}$	$.721^{**}$	1				
Y_1	$.357^{**}$	$.368^{**}$	$.430^{**}$	1			

Table 1 presents the correlation coefficients between the three key factors and the development potential of seafood industry entrepreneurs in Samut Sakhon across the four areas:

	X_1	X_2	X_3	Y_1	Y_2	Y_3	Y_4
Y_1	0.264^{**}	0.277^{**}	0.343^{**}	0.604^{**}	1		
Y_1	0.199^{*}	0.163^{*}	0.162^{*}	0.567^{**}	0.535^{**}	1	
Y_1	0.512^{**}	0.522^{**}	0.355^{**}	0.467^{**}	0.561^{**}	0.581^{**}	1

There is statistical significance at the **0.01 level.
*There is statistical significance at the **0.05 level.**

From Table 1, it was found that the capabilities related to logistics and supply chain management and human resource management in Thailand's seafood industry, along with the national economic and social development strategy and the Lower Central Region development strategy (Samut Sakhon), as well as the capabilities concerning competitive management with the repatriation of migrant workers back to their home countries, all have a positive correlation with the development potential of seafood industry operators in Thailand. This is particularly significant in three areas: market expansion, cost management of the seafood industry, and new labor market development. These correlations were statistically significant at the .01 level, ranging between 0.264 – 0.756. Additionally, these factors positively correlated with the revenue of business operators at the .05 level, with correlations ranging between 0.162 – 0.199. Based on the relationships presented In Table 1, a Stepwise Multiple Regression Analysis was conducted.

$$Y_1 = 1.481 + 0.526 \, X_3$$

Analysis results affecting management costs (Y_2) found that: X_3 = Variance of Y_2 has 11.7%, significant statistic 0.01 able to create the predictive equation.

$$Y_2 = 2.161 + 0.393 \, X_3$$

Analysis results affecting entrepreneur income (Y_3) found that: X_3= Variance of Y_3 has 4.0%, significant statistic 0.05 able to create the predictive equation.

$$Y_3 = 1.792 + 0.366 \, X_1$$

Analysis results affecting the new worker market (Y_4) found that: X_3 = Variance of Y_4 has 30.5%, significant statistic 0.01 able to create the predictive equation.

$$Y_4 = 0.253 + 0.473\, X_2 + 0.453\, X_1$$

The Factors affecting potential entrepreneurs affecting to new worker market, market expansion management cost, and entrepreneur's income explain the variances by 30.5%, 18.5%, 11.7%, and 4%, respectively.

Conclusion

In the research titled "Guidelines for Preparing Thailand's Seafood Industry for the Repatriation of Migrant Workers: A Case Study of Samut Sakhon Province, several key points of discussion emerged as follows:

Conclusion based on Objective 1

To study the trends leading towards readiness in the seafood industry about the repatriation of migrant workers, with a case study of Samut Sakhon Province, the researcher summarized that the experts were predominantly male, aged between 41 - 45 years, holding senior management positions in government agencies, with bachelor's and master's degrees. Four key strategies were highlighted, focusing on:

1. Employers must understand the rules, regulations, and conditions governing the employment of migrant workers.

2. Environmental factors, both domestic and international, must be considered in formulating strategies regarding migrant workers in the province.

3. Collaboration with agencies such as the Department of Labor, Fisheries Department, Marine Department, Ministry of Labor, Marine Police, and Department of Human Welfare are essential to streamline business operations.

4. Emphasis should be placed on managing the supply chain to reduce costs, expedite services, and add value to both products and services.

This is consistent with research by Handoyo, S., Suharman, H., Ghani, E.K., and Soedarsono, S. (2023), which studied the impact of high-involvement human resource management practices on supply chain flexibility and operational performance. They found that the competency of operators and the integration of learning processes

within organizations have a direct influence on high organizational performance and supply chain flexibility. In addition, there should be efforts to develop domestic labor, increasing their participation in the seafood industry, as supported by the research of Surasit Boonchoun (2020), which found that Thailand's frozen seafood industry should focus on personnel development, management, finance, and securing sufficient high-quality raw materials, while also emphasizing organizational coordination, the use of quality assurance systems, and the ability to adapt to environmental fluctuations.

Furthermore, in line with the strategic development plan for the Lower Central Region, importance should be placed on migrant labor, with the establishment of a permanent migrant labor management center. This center would coordinate efforts across relevant agencies and monitor the potential for human trafficking across borders. A clear mission should be set, focusing on legalizing migrant labor, improving labor standards, ensuring human rights, and fostering harmonious coexistence between migrant workers and local citizens. This is consistent with the research of Achchaphorn Kongjaeng (2015). which found that Thailand's migrant labor management policies are sound and aim for equitable protection without discrimination under the Labor Protection Act of 1998, irrespective of the workers' legal status.

Conclusion based on Objective 2

To analyze the potential of logistics supply chain management, and human resource management within the seafood industry concerning the repatriation of migrant workers, and its impact on the development of the seafood industry in Samut Sakhon Province, the research revealed that:

1. The factors related to logistics and supply chain management, human resources, strategic development of the Lower Central Region, and competitive dynamics related to migrant labor repatriation all influence the new labor market, industry management costs, and business revenues.

2. These factors explained the variance in business revenue by 30.5%, 18.5%,11.7%, and 4%, respectively, aligning with research by Nantapong Puntaweesuk (2024), which found that rising costs, including fuel prices, raw material costs, and declining fish populations, alongside wage increases, directly affect Thailand's seafood industry.

Recommendations for Applying Research Findings

The findings of this research provide insights into preparing for migrant labor management. The researcher offers the following recommendations for practical application:

1.   Government agencies should establish continuous and systematic policies for migrant workers, including worker registration, legal protection, appropriate welfare, and encouraging domestic workers to enter the seafood industry. They should also promote the continuous use of production technologies to reduce dependence on migrant workers.

2.   Support should be given to adding value to the seafood industry by shifting away from raw material production and focusing on ready-to-eat products and value-added processing to meet consumer demands. Expanding markets and increasing foreign investment should be encouraged.

3.   The government should support policy-oriented research (Policy research) on trade and investment to position Thailand as a leader in the ASEAN community's seafood industry, with clear objectives for how Thailand will lead in this sector. Efforts should be made to position Thailand as a base for seafood production, ensuring a sustainable market share.

Suggestions for Future Research

Based on the findings of this research, the researcher suggests the following for future studies:

1.   Comparative studies should be conducted on countries with significant success in seafood industry management, focusing on worker use and trade costs. These insights can be applied to enhance Thailand's competitiveness and provide knowledge for Thai entrepreneurs.

2.   Future studies should explore various seafood industries, such as frozen seafood, fresh seafood, dried seafood, processed seafood, and seafood distribution, using the Supply Chain Operations Reference Digital Standard (SCOR DS MODEL) to recognize the importance of strategy, business rules, technology, and human resources that provide an overarching direction to build a more efficient supply chain, deliver was split into customer orders and fulfill to give greater detail and emphasis to those activities, practices and metrics, make became transform to widen its applicability to

more types of manufacturing and service providers. and give Thai seafood products a competitive advantage, allowing the industry to reach markets faster and foster stronger relationships with suppliers within the same sector

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