CHALLENGES FACED BY FROZEN SEAFOOD IMPORTERS IN MALAYSIA

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Challenges Faced By Frozen Seafood Importers in Malaysia

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DECLARATION

I hereby declare that:

(1) This Research Project is the end result of my own work and that due acknowledgement has been given in the references to all sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3)The word count of this research report is **21,013words**.

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DEDICATION

This dissertation is dedicated to: My supervisor,

Dr Yogambigai a/p Rajamoorthy

For guidance throughout the completion of this research study.

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For their unwavering support, assistance, encouragement, and motivation throughout the completion of this research project.

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LIST OF ABBREVIATIONS

FAO	Food and Agriculture Organization
IAFI	International Association of Fish Inspectors
STTP	Sodium Tripolyphosphate
FNPP	Fukushima Dai-ichi Nuclear Power Plant
ASEAN	Association of Southeast Asian Nations
AEC	ASEAN Economic Community
FSQP	The Food Safety and Quality Program
MOH	Ministry of Health
SCM	Supply Chain Management
EU	European Union
GSP	General System of Preferences
CIFS	Codex International Food Standards
GDP	Gross Domestic Profit
VECM	Vector Error Correction Model
RFID	Radio-Frequency Identification
DNA	Deoxyribonucleic Acid
WTO	World Trade Organization
MBA	Master of Business Administration
PDPA	Personal Data Protection Act
QDA	Qualitative Data Analysis
NVIVO	Nudist Vivo
P1	Participant 1
P2	Participant 2

P3	Participant 3
P4	Participant 4
P5	Participant 5
RQ1	Research Question 1
RQ2	Research Question 2
RQ3	Research Question 3
USD	US Dollars
RM	Ringgit Malaysia
UTAR	Universiti Tunku Abdul Rahman

ABSTRACT

The global frozen seafood industry has been experiencing rapid growth, driven by increasing consumer demand for convenient, long-lasting seafood products. However, the sector also faces significant challenges, particularly in maintaining competitiveness, ensuring accurate labelling, and implementing effective traceability systems. This research explores the challenges faced by frozen seafood importers in Malaysia, focusing on three primary research areas: competitiveness, labelling, and traceability. Previous research has been limited in scope and methodology, often lacking comprehensive qualitative analysis.

The research employs a qualitative methodology to provide a detailed and nuanced understanding of the challenges within the frozen seafood industry. Data were collected through in-depth qualitative interviews with five key industry stakeholders, an Export Manager with 10 years of experience; a Director with 30 years of experience; a Managing Director with 20 years of experience; a Purchasing Manager with 11 years of experience; and a Purchasing Manager with 9 years of experience. Their extensive expertise provided rich insights into the complexities and nuances of the industry. The interview data were analyzed using Nvivo software to ensure a systematic and rigorous analysis of the qualitative data.

The findings reveal significant barriers to competitiveness, labelling, and traceability within the frozen seafood import industry in Malaysia. Competitive challenges include supplier reliability, market conditions, consumer dynamics, and regulatory changes. Labelling challenges involve information integrity, supplier conduct, and compliance issues. Traceability challenges encompass awareness gaps, adoption, and implementation barriers. These issues highlight the need for improved regulatory frameworks, better management practices, and increased industry-wide awareness and education.

The study's implications extend to policymakers, industry practitioners, and researchers aiming to improve the competitive positioning and operational efficiency of the frozen seafood import sector in Malaysia. It contributes to the

existing body of knowledge by offering practical recommendations for industry stakeholders to address these issues, ultimately enhancing the sector's overall performance and sustainability.

CHAPTER 1

RESEARCH OVERVIEW

1.0 Introduction

The frozen seafood import industry in Malaysia plays a critical role in meeting the growing demand for diverse seafood products driven by the nation's changing dietary preferences, urbanization, and economic development. Despite the industry's significance, it faces numerous challenges that impact its efficiency, competitiveness, and sustainability. This chapter explores the key issues and concerns related to food safety, quality of food production, market competition, and economic factors that influence the operations of frozen seafood importers in Malaysia.

1.1 Background of the study

Malaysia, with its vibrant culinary landscape and diverse cultural influences has long been a hub for seafood consumption. The nation's appetite for seafood both domestically sourced and imported which continues to grow steadily and driven by changing dietary preferences, urbanization, and economic development. In response to this demand, the importation of frozen seafood has become an integral part of Malaysia's food supply chain which supplementing local seafood production and enriching the culinary offerings available to consumers.

Marine products are among the most traded commodities worldwide. In 2018, about 38% of marine products entered the international market (FAO, 2020).

Malaysia has high annual per capita fish consumption, second only to Japan in Asia and ranked fifth globally (York R et al., 2004).

The frozen seafood import industry in Malaysia is characterized by its complexity, encompassing a wide range of products sourced from various global markets. From shrimp and fish fillets to squid and crab, imported frozen seafood caters to the diverse tastes and preferences of Malaysian consumers, offering convenience, affordability, and year-round availability.

According to Food Act 1985, seafood typically refers to various edible marine animals and plants consumed by humans. This can include fish, crustaceans (such as shrimp, crab, and lobster), mollusks (such as clams, oysters, and mussels), and other aquatic organisms harvested for human consumption (FAO, 2013). Seafood is widely recognized as a nutritious and healthy food choice. However, there is a growing concern regarding environmental contaminants found in seafood, as well as inadequate fisheries management in various regions around the world. The fifth International Association of Fish Inspectors (IAFI) Congress in 2003 highlighted several safety and quality issues that needed attention such as Chloramphenicol, Salmonella & Nitrofurans (Ryder et al., 2005).

Another aspect requiring attention is the utilization of sodium tripolyphosphate (STPP). STPP is colourless, tasteless, and odourless salt finds its place not only in preserving food, notably seafood, but also in paints and cleaning products. Acting as a food preservative, STPP prompts cells to absorb water. Consequently, seafood appears plump, bright white, and seemingly fresh which enhancing the visual appeal of fish meat, water retention augments weight and improves the firmness of seafood which potentially influencing the perceived quality of the product. However, the extensive use of STPP raises concerns regarding its impact on the overall healthiness of seafood (Nobakht et al., 2017). Among these concerns were the necessity for greater harmonization of sanitary requirements and a more comprehensive approach to informing consumers about the risks associated with seafood consumption, while also emphasizing its positive nutritional attributes. Therefore, enforcement of food laws in Malaysia must be strengthened to ensure

that food safety and quality are always maintained. This is because food safety is crucial as it involves health, lifespan, productivity, and the country's food trade.

Furthermore, importers in Malaysia's frozen seafood industry encounter various challenges, particularly concerning imports. Alongside food safety, issues like maintaining quality and freshness, supply chain disruptions, and counterfeit products pose significant hurdles (De & Singh, 2021). The industry grapples with scams, mislabelling, and ethical concerns related to exceed use of high glazing and chemicals such as Chloramphenicol, Salmonella & Nitrofurans and STPP as what ve mentioned above (Mishraet al., 1998).

Apart from that economic factors such as fluctuating exchange rates and tariffs impact costs and profitability (Duasa, 2009). Intense competition, both domestically and internationally necessitates importers to differentiate their offerings and remain agile in responding to market dynamics. There's a possibility that foreign exporters might push for higher glazing or excessive use of STPP to secure lower prices for importers before their acknowledgment, for the purpose of maintaining competitiveness in the market. This practice could stem from a desire to maximize profit margins or meet price targets set by competitors. To navigate these challenges successfully, importers must prioritize thorough due diligence, implement robust quality assurance measures, and stay abreast of regulatory changes and market trends to ensure a reliable and sustainable seafood supply for consumers in Malaysia.

1.2 Problem Statement

1.2.1 Fukushima Dai-ichi Nuclear Power Plant (FNPP) accident

The Fukushima Dai-ichi Nuclear Power Plant (FNPP) accident, triggered by the Great East Japan Earthquake and subsequent tsunami on March 11, 2011, resulted in the release of significant amounts of artificial radionuclides into the environment raised concerns about the potential health effects on humans and

ecosystems, as well as the long-term environmental consequences (Kobayashi et al., 2013). In the aftermath of the Fukushima nuclear disaster in 2011, Malaysia, like many other countries, exercised caution in importing seafood from Japan due to concerns over potential radiation contamination.

In 2023, the Japanese government announced plans to release radioactive contaminated water from the damaged Fukushima Daiichi Nuclear Power Plant into the Pacific Ocean, scheduled for the spring or summer of that year (China Daily, 2024). Despite efforts to treat wastewater from the Fukushima nuclear power plant, residual traces of radioactive material persist. Consequently, some researchers argue that this treated wastewater should be regarded as polluted water (Yang et al., 2022). The potential release of contaminated water into the ocean raises concerns about its adverse effects on marine ecosystems, human health, and the safety of seafood sourced from the region.

According to Malaysia's deputy Agriculture and Food Security Minister Chan Foong Hin, there was currently no live marine fish imported from Japan to Malaysia Moreover, according to the Fisheries Department for frozen seafood products from Japan , the Ministry is currently working closely with the Health Ministry and other relevant authorities such as Quarantine and Inspection Services Malaysia and the Malaysia Fisheries Development Authority to monitor food safety issues, including checks on health certifications and radiation during post import," The inspections, which would be for radioactive content, would be done at the international entry points into the country

However in 2023, The Agriculture and Food Security Minister, Datuk Seri Mohamad Sabu, reassured that the government is not imposing restrictions on agricultural and fish imports from Japan. He emphasized that the Health Ministry diligently monitors food safety, including radiation inspections, affirming the safety of fish products imported from Japan. All fish products from Japan are rated at level four, signifying the highest level of scrutiny. He assured the public that consuming fish products from Japan is safe(The Star, 2023) .

Reports have highlighted the stringent safety measures imposed by Malaysian authorities, including rigorous testing protocols to detect any traces of radiation in imported seafood products. While Japan has implemented measures to monitor and mitigate radiation levels in its seafood exports, the perceived risks associated with radiation contamination have led Malaysian importers to explore alternative sourcing options to meet consumer demand for seafood products. According to the Fisheries Department, Malaysia imports frozen sardine and mackerel from Japan specifically for consumption purposes. However, in the case of live fish imports, Malaysia exclusively brings in freshwater ornamental fish such as the Koi. The department clarified that the import of live fish solely pertains to ornamental freshwater species and does not include marine fish.

Despite Japan's longstanding reputation as a major player in the global seafood market, Malaysian importers have been hesitant to source products from Japanese waters. This reluctance is evident in numerous articles and news reports documenting the cautious approach taken by Malaysian seafood importers. In 2011, Malaysia imported RM76.55 million worth of fishery commodities from Japan, accounting for a total of 3.81% of the country's total import volume. However, in 2021, the import volume from Japan decreased, categorizing it into the low import category, with a value lower than that of Australia, which accounted for 2.16% of the total import volume at RM109.02 million (Department of Fisheries, 2021).

The decision to abstain from importing seafood from Japan underscores the critical importance of food safety and quality assurance in international trade. Malaysian authorities have prioritized the protection of public health and consumer interests, implementing stringent regulations to safeguard against potential hazards in imported food products. While Japan has made efforts to reassure international markets of the safety of its seafood exports, the lingering concerns surrounding radiation contamination have prompted Malaysian importers to exercise vigilance in their sourcing decisions. This cautious approach reflects a broader trend within the global seafood industry, where consumer confidence hinges on the assurance of product safety and integrity.

1.2.2 Statistics of Imported Frozen Seafood in Malaysia

In 2018, Malaysia's seafood import landscape witnessed a significant shift, with China, Indonesia, Vietnam, Thailand, and India emerging as the top five ASEAN exporters of fish to Malaysia. This cohort of nations collectively contributed to a total import value of US$1,329,289 thousand, underscoring the pivotal role of ASEAN countries in fulfilling Malaysia's seafood demand.

Malaysia's fish and seafood market is sourced from both local catches and imports. However, the seafood manufacturer in Malaysia exports the top quality of seafood to overseas statistic from Department of fisheries Malaysia show that total 373,762.53 tonnes which cost Rm 3, 87.6362million in export of marine products, which result in local market has to depend on import seafood to meet the demand of seafood. According department of fisheries Malaysia, in 2020 Malaysia has imported 559,103.64 tonnes of frozen seafood which cost Rm 5,090.87million and it has increased to 661,502.52 tonnes, Rm 5,837.44million in 2021. As seen in the following Table 1, the top five ASEAN exporters of fish to Malaysia in 2018 are China, Indonesia, Vietnam, Thailand and India with a total value of US$1,329,289 thousand.

Table 1: List of Seafood Products imported by Malaysia

Exporters	Imported value in 2019 (USD Thousand)	Imported value in 2020 (USD Thousand)	Imported value in 2021 (USD Thousand)	Imported value in 2022 (USD Thousand)
World	965008	919948	1111872	1329289
China	179763	147102	222347	244743
Indonesia	191691	170730	160121	172006
Viet Nam	125519	113631	123194	148994
Thailand	74559	86417	128052	130378
India	46460	47496	61500	127415
Oman	9757	22215	36078	67445
Norway	47061	66264	74442	61795
Japan	31400	33189	29255	40991
Myanmar	33018	30008	32912	35291
Chile	21930	21231	15345	24745

Sources: ITC calculations based on Department of Statistics Malaysia since 2015

The ascendancy of China, Indonesia, Vietnam, Thailand, and India as key seafood exporters to Malaysia reflects a strategic diversification strategy adopted by Malaysian importers to mitigate risks and ensure a consistent supply of seafood products. Factors such as geographical proximity, trade agreements, and

comparative advantages in seafood production have positioned these ASEAN nations as preferred sourcing destinations for Malaysian importers. Furthermore, the robust trade relations within the ASEAN region, facilitated by initiatives such as the ASEAN Economic Community (AEC), have bolstered cross-border trade and investment, fostering a conducive environment for seafood trade among member states.

The reliance on ASEAN nations as primary seafood exporters presents both opportunities and challenges for Malaysia's seafood import sector. While the proximity of these countries offers logistical advantages and facilitates efficient supply chain management, it also introduces complexities related to regulatory compliance, quality control, and market competition. As Malaysia continues to strengthen its economic ties with ASEAN countries, particularly in the context of regional economic integration initiatives, the seafood import sector must navigate evolving regulatory frameworks and market dynamics to ensure the safety, quality, and sustainability of imported seafood products.

Moreover, the ascendancy of China, Indonesia, Vietnam, Thailand, and India as key seafood exporters to Malaysia underscores the imperative for robust food safety measures and regulatory oversight to safeguard public health and consumer interests. With the growing importance of ASEAN nations in Malaysia's seafood import landscape, stakeholders must collaborate closely to address challenges related to food safety, traceability, and sustainability, thereby fostering a resilient and responsible seafood import industry in Malaysia.

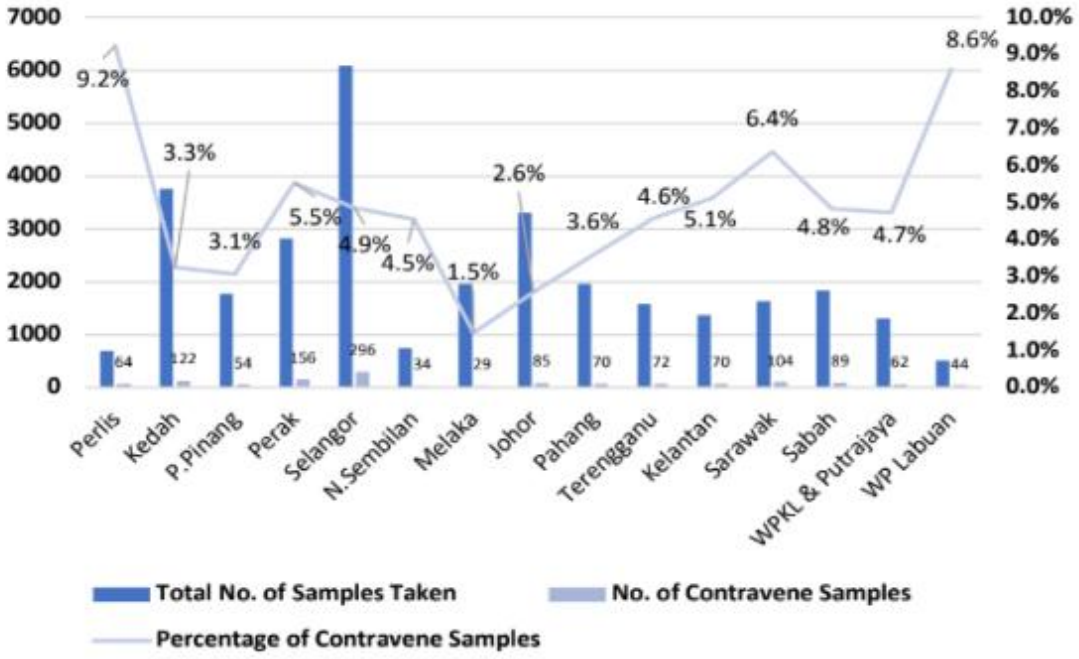
1.2.3 Enforcement Issues from Food Safety and Quality Program, Ministry of Health (FSQP)

The Food Safety and Quality Program aims to protect the public from health risks and fraud associated with food preparation, sale, and consumption. Additionally, it seeks to promote food trade by enhancing measures to address food safety challenges and related issues, and by improving control activities for food imports and exports. The vision of FSQP is to improve food safety and quality throughout the supply chain by ensuring accountability among stakeholders, thereby

guaranteeing the safety and quality of food for consumers (Abu Bakar 2022). Throughout 2022, numerous enforcement initiatives were enacted by employing food sampling methodologies to verify adherence to safety standards and regulatory compliance thereby ensuring the quality of food products.

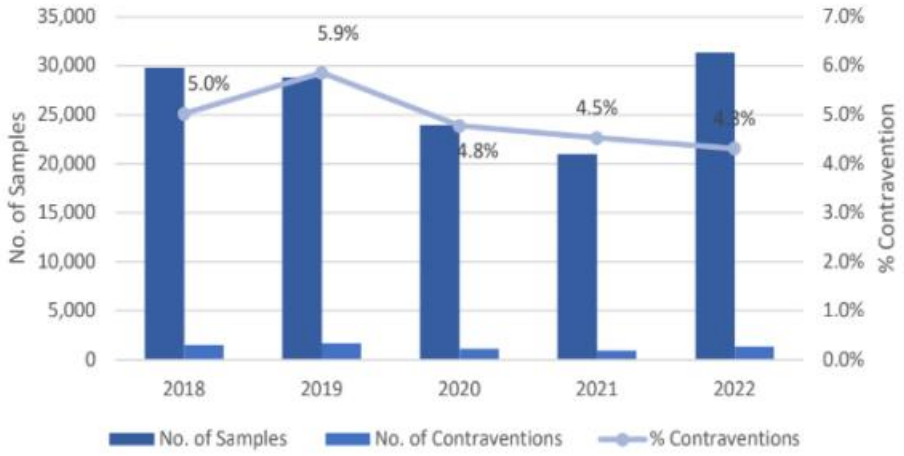
Food sampling is carried out to verify compliance with the Food Act 1983 and its regulations for food prepared, sold, or imported into Malaysian markets. In 2022, a total of 31,342 food samples were collected, with 1,351 samples (4.3 percent) found to be non-compliant under the Food Act 1983 and Food Regulations 1985. There was a downward trend in the percentage of sample non-compliance observed from 2019 to 2022, as illustrated in Figure 1 and 2.

Figure 1. Number of samples taken and Percentage of contravene by State in 2022



Source: FSQP, MOH

Figure 2: Food sampling activities and percentage of contravene for year 2018 to 2022



Source: FSQP,MOH

In the year 2022, the Domestic Compliance Branch undertook numerous nationwide food safety and quality enforcement operations as part of special thematic initiatives, known as Operasi Khas (Bertema), aimed at proactively addressing concerns regarding food safety and quality while combatting violations of the Food Act 1983 and its associated regulations. These operations, including Ops Label Bahasa Asing, Ops Ramadhan, and Ops Alcoholic Beverages, were strategically implemented to safeguard public health and uphold regulatory standards (Ministry of Health Malaysia, 2022).

Ops Label Bahasa Asing, specifically, targeted the compliance of imported food products with Regulation 10 of the Food Regulations 1985, which mandates packaging to be labeled in either Bahasa Malaysia or English. Refer to Table 2, conducted across 1,046 premises, this operation resulted in the issuance of 108 notices and fines totalling RM 72,411.24 which underscoring the rigorous enforcement efforts to ensure adherence to legal requirements and protect consumer interests(Ministry of Health Malaysia, 2022).

Table 2: Ops Label Bahasa Asing Data

	Values
No. of Premise Inspected	1046.0
No. of Seized Item	13667.0
Total fined (RM)	72411.24
No. of 32B Notice Issued	108.0

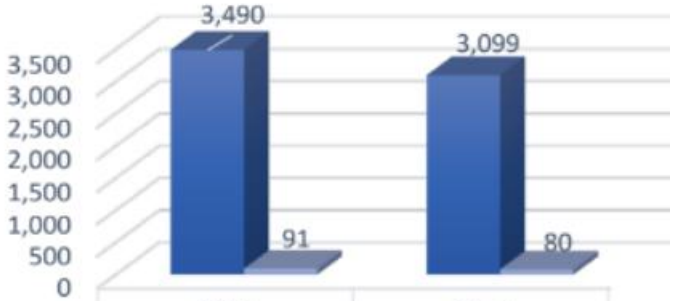
Source: FSQP

In addition to on premise operations, the Food Safety and Quality Program (FSQP) also undertake vital actions in food import control activities at various entry points across Malaysia. These activities encompass comprehensive consignment inspections, food sampling procedures, and enforcement measures such as seizure and detention of suspected food items, recall of non-compliant imported foods, re-exportation, import prohibitions, and disposal of infringing food consignments. Additionally, FSQP enforces processes like re-labelling, re-processing, and re-conditioning of imported foods found to be non-compliant with the regulations stipulated in the Food Act 1983 and its associated legislation (Ministry of Health Malaysia, 2022).

Covering 57 entry points throughout Malaysia, food import control activities are pivotal in safeguarding public health and ensuring regulatory compliance. In 2022, a total of 364,961 food consignments were imported into the country which marking an increase from the 336,545 consignments recorded in 2021. Furthermore, 96 percent of these consignments underwent document inspections in 2022, a significant rise from the 43 percent documented in the previous year. Moreover, refer to figure 5, 3099 consignments underwent inspection and sampling for analysis in 2022, compared to 3490 consignments in 2021, reflecting the continued diligence in monitoring imported food products (Ministry of Health Malaysia, 2022).

According to the food samples analysed in 2022 refer to figure 3, 2.6 percent were found to violate the Food Regulations 1985, demonstrating a slight increase from the 2.0 percent recorded in 2021. These findings underscore the importance of stringent import control measures and ongoing efforts to uphold food safety standards across the nation (Ministry of Health Malaysia, 2022).

Figure 3. Samples contravening food regulations



	2021	2022
Total food samples taken	3,490	3,099
Total number of contravening samples	91	80

Source: FSQP,MOH

Food samples discovered to be in breach of the Food Regulations 1985 undergo detention, testing, and subsequent release, as per the consignments arriving throughout the country. This process is initiated through notifications based on the alert system integrated within Malaysia's Food Safety Information System (Ministry of Health Malaysia, 2022). Furthermore, additional enforcement measures include nationwide notifications for product recalls and the prosecution of cases involving contraventions associated with imported food items. These actions collectively contribute to upholding stringent standards and ensuring the safety of food products within the nation's borders.

1.3 Research Objectives

1. To identify the challenges of competitiveness faced by frozen seafood importers in Malaysia.
2. To identify the challenges on labelling faced by frozen seafood importers in Malaysia.
3. To identify the challenges on traceability faced by frozen seafood importers in Malaysia.

1.4 Research Questions

1. What are the primary challenges on competitiveness involving frozen seafood importers in Malaysia?
2. What are the primary challenges on labelling involving frozen seafood importers in Malaysia?
3. What are the primary challenges on traceability involving frozen seafood importers in Malaysia?

1.5 Significance of the Study

This research aims to deliver significant contributions to the existing body of literature on the challenges faced by frozen seafood importers, with a particular focus on the context of Malaysia. By highlighting the unique challenges encountered by importers in Malaysia, this study provides valuable insights that can lead to improved practices and innovative solutions tailored to the specific needs of the Malaysian market.

The findings from this research will be invaluable to various stakeholders within the frozen seafood supply chain, including importers, exporters, and government agencies. For importers, understanding the intricate challenges they face is crucial for making informed decisions and implementing effective strategies that enhance their businesses' resilience and competitiveness. This study will equip importers with the knowledge to navigate the complexities of supply chain management, regulatory compliance, and market dynamics, enabling them to optimize their operations and mitigate risks more effectively.

Exporters will also benefit from this research, as it sheds light on the expectations and requirements of the Malaysian market, allowing them to tailor their offerings and improve their supply chain processes to better meet the demands of their Malaysian partners. Additionally, government agencies can use the insights from this study to develop more supportive policies and frameworks that address the

challenges faced by importers, thus fostering a more conducive environment for the growth of the frozen seafood industry.

Moreover, this study can serve as a stepping stone for future research in the frozen seafood import sector and related fields. By identifying and analysing the specific challenges within the industry, this research paves the way for further exploration and deeper analysis of particular issues or areas within the seafood trade. Researchers can build upon the findings of this study to investigate other dimensions of the industry, such as sustainability practices, technological advancements, and consumer behaviour, thereby contributing to a more comprehensive understanding of the sector.

The significance of this research extends beyond immediate practical applications. It contributes to the sustainable growth and development of the frozen seafood import sector in Malaysia by providing a foundation for evidence-based decision-making and strategic planning. The insights gained from this study can help stakeholders develop long-term strategies that not only address current challenges but also anticipate future trends and opportunities, ensuring the sectors continued prosperity.

In the following sections of this research, the methodology, findings, and discussion will be presented, offering a comprehensive and in-depth analysis of the challenges faced by frozen seafood importers in Malaysia. This analysis will highlight the implications for the industry's future endeavours and provide actionable recommendations for stakeholders to enhance their operations and strategic approaches. By doing so, this research aims to make a lasting positive impact on the frozen seafood import sector, fostering resilience, competitiveness and sustainable growth.

Chapter 2

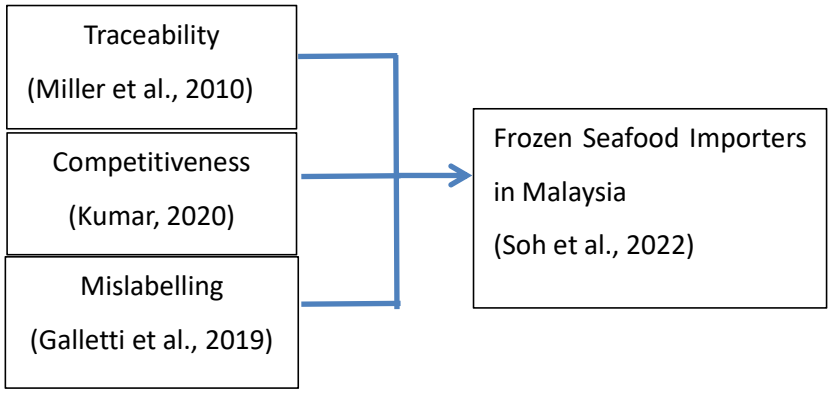
Literature Review

2. Introduction

The global trade of frozen seafood has expanded significantly in recent years which driven by changing consumer preferences and increased demand for convenience and quality. This chapter presents a comprehensive review of the existing literature on the challenges faced by frozen seafood importers. The aim is to establish a theoretical foundation and contextual background for the study, providing insights into key issues such as traceability, competitiveness, mislabelling, supply chain management, regulatory compliance, and consumer demand within the frozen seafood import industry. By critically examining previous research, industry reports, and relevant case studies, this chapter identifies gaps in the current knowledge and highlights the complexities and dynamics that influence the operations of frozen seafood importers in Malaysia.

A theoretical framework is essential in this context to systematically understand and address these challenges. This framework incorporates elements of supply chain management (SCM) theory, emphasizing transparency and traceability as crucial components for enhancing the performance and sustainability of frozen seafood importers. SCM theory offers a comprehensive approach to managing and optimizing supply chain activities, ensuring efficient coordination among various stakeholders, maintaining quality control, and meeting regulatory requirements. By integrating SCM principles with the unique challenges of the frozen seafood industry, this framework aims to provide a robust foundation for improving operational efficiency, ensuring compliance, and fostering consumer trust.

Figure. 4. Conceptual framework: Challenges faced by frozen seafood importers in Malaysia



Source: (Own development)

2.1 The relationship between traceability, competitiveness, mislabelling and frozen seafood importers in Malaysia.

The performance of frozen seafood importers in Malaysia is influenced by several key factors, including traceability, competitiveness, and mislabelling(refer to figure 4). Each of these factors plays a crucial role in determining the overall effectiveness and success of seafood importers in the highly competitive market of Malaysia.

Firstly, traceability is a fundamental aspect of the seafood supply chain. Traceability system significantly enhances the performance of seafood importers by improving transparency, efficiency, compliance and consumer trust. It ensures product authenticity, reduces fraud, and provides a detailed view of the supply chain, enabling effective monitoring and issue resolution (Miller et al., 2010). Automation streamlines operations and improves inventory management, while quick problem identification minimizes disruptions and losses. Traceability systems help meet regulatory standards, prepare for audits and enhance brand

reputation. They build consumer trust by assuring product quality and safety, support efficient risk management through precise recall capabilities and provide a competitive edge, attracting more customers and enabling premium pricing(Mai et al., 2010). These systems enable importers to track the movement of seafood products from the point of origin to the final consumer which ensuring that any issues related to quality or safety can be quickly identified and addressed. According to the research conducted by Aung and Chang (2014) emphasize the importance of traceability systems in ensuring food safety and quality, which ultimately leads to better market performance for food importers. By implementing robust traceability mechanisms, seafood importers can enhance their reputation and build trust with consumers which are essential for long-term success.

Competitiveness is another critical factor that impacts the performance of frozen seafood importers in Malaysia. Competitiveness significantly influences the performance of seafood importers. Factors that improve performance include adapting to consumer preferences, competitive pricing, efficient logistics, strong supplier relationships, and adoption of innovative technologies (Kumar, 2020). These elements ensure fresh products, higher customer satisfaction, and consistent supply and reduced operational costs. Conversely, intense competition, poor supply chain management, inadequate supplier relationships and failure to adapt to market trends or invest in technology can worsen performance by eroding market share and profit margins. Maintaining competitiveness through strategic and efficient practices is crucial for sustained success (Emerald Insight, 2021).The market dynamics in the seafood industry are highly competitive with numerous local and international players vying for market share. High competitiveness drives seafood importers to optimize their operations, reduce costs and improve customer satisfaction. This can involve adopting innovative technologies, improving supply chain efficiency and implementing effective marketing strategies. Mr Michael Porter a researcher who specializes in techniques for analysing industries and competitors indicates that competitiveness in the seafood industry can lead to operational efficiencies and increased market share. By

staying competitive, seafood importers can ensure their survival and growth in a challenging market environment.

On the other hand, mislabelling of products can severely undermine the performance of seafood importers. Mislabelling occurs when products are inaccurately labelled either intentionally or unintentionally, which can lead to significant consequences for importers. Mislabelling erodes consumer trust, as customers rely on accurate labelling to make informed purchasing decisions. It can also lead to regulatory penalties and legal actions, further damaging the reputation and financial stability of the importers (Galletti et al., 2019). A study indicates that mislabelling in the food industry undermines consumer trust and can have severe repercussions for company performance (Spink et al., 2011). To mitigate the risks associated with mislabelling, seafood importers must implement rigorous quality control measures and ensure compliance with labelling regulations.

In the nutshell, the performance of frozen seafood importers in Malaysia is intricately linked to the factors of traceability, competitiveness, and mislabelling. Effective traceability systems enhance product authenticity and supply chain transparency, which leading to improved market performance. Competitiveness drives importers to optimize operations and improve customer satisfaction which ensuring their growth and success in a competitive market. Conversely, mislabelling can erode consumer trust and lead to regulatory penalties which negatively impacting the performance of importers(Soh et al., 2022) .Therefore, addressing these factors is essential for improving the performance of frozen seafood importers in Malaysia to ensure their sustainability and success in the long term.

2.2 The challenges faced by seafood importers in EU

The study of barriers to imports in the EU market reveals that seafood importers particularly those from countries like Vietnam, face intricate challenges that are

well-documented in current literature (Van Duijn et al., 2012). Research underscores the profound impact of stringent EU food safety standards which mandate rigorous adherence to traceability and hygiene practices. These standards are crucial for ensuring food safety and quality which often necessitate costly adjustments in production methods. This requirement is particularly burdensome in sectors such as cultured shrimp, where comprehensive traceability is not just recommended but mandated by EU regulations (Henson & Caswell, 1999).

Furthermore, Import tariffs further complicate market dynamics, for example imposing higher rates on products like tuna and shrimp from Vietnam, thereby affecting their competitiveness within the EU market (Anderson, 2010). These tariff disparities underscore the importance of trade agreements and preferential arrangements such as the General System of Preferences (GSP), implemented by developed countries like the EU to promote economic growth in developing nations. The GSP offers preferential tariff rates or exemptions to eligible beneficiary countries, aiming to enhance their market access and facilitate economic integration into the global economy (Feenstra, 1992).

However, the effectiveness of the GSP can be influenced by changes in tariff policies, which can quickly alter market conditions and affect trade dynamics. Regulatory compliance costs also present significant challenges, encompassing expenses related to certification and adherence to EU regulations. These costs are particularly daunting for small-scale producers in developing countries, who often lack the resources and infrastructure to meet stringent EU standards (Coglianese et al., 2003).

Efforts to mitigate these barriers often involve capacity-building initiatives and export coaching programs aimed at enhancing compliance and improving market access (Unnevehr, 2000). These initiatives play a crucial role in supporting exporters in navigating complex regulatory landscapes and ensuring product conformity with EU requirements.

These multifaceted barriers collectively pose challenges for EU importers, potentially impacting their operational efficiency and overall performance in the competitive global seafood industry. Future research could explore effective policy interventions, including the evaluation of existing support mechanisms and the development of innovative strategies to promote sustainable trade practices and enhance market access for seafood exporters from developing countries.

2.3 Overviews of other challenges faced by frozen seafood importers

2.3.1 Quality Control and Food Safety

Quality Control and Food Safety are paramount concerns for frozen seafood importers as they directly impact consumer health, regulatory compliance and brand reputation. Maintaining the quality and safety of frozen seafood products requires stringent protocols and continuous monitoring throughout the supply chain.

One significant challenge faced by importers is ensuring product integrity during transportation and storage. Temperature control is a critical factor as fluctuations in temperature can compromise the quality and safety of seafood products. Inadequate temperature management during transit can lead to thawing and refreezing which resulting in texture degradation and increased risk of bacterial growth (Baker & McFadden, 2019). According to the Codex International Food Standards (CIFS) and the International Refrigeration Association, frozen foods should be stored at −18 °C or lower. If frozen foods are stored at temperatures higher than −18 °C, there is an increased risk of bacterial growth, which can lead to foodborne illnesses. Additionally, higher storage temperatures can accelerate the degradation of texture, flavour and nutritional value which resulting in lower quality food products (Nakazawa, 2020). Therefore, maintaining a storage temperature of −18 °C or lower helps preserve the safety, quality and shelf life of frozen foods.

Handling practices such as clean and sanitary facilities, dedicated tools for different type of seafood and personal hygiene also play a crucial role in preserving product quality and safety. Improper handling such as rough handling or cross-contamination can introduce pathogens and spoilage microorganisms which posing risks to consumer health (Baker & McFadden, 2019). Packaging is another area of concern for importers, as it serves as the first line of defence against physical damage, contamination, and deterioration. Packaging materials must be designed to withstand the rigors of transportation and provide adequate protection against temperature fluctuations and moisture ingress (Baker & McFadden, 2019). Additionally, packaging should be tamper-evident to ensure the integrity of the product and reassure consumers of its safety and authenticity.

Microbial contamination and foodborne illnesses pose significant risks to consumer health and can have severe consequences for importers in terms of liability and reputation damage. Importers must implement robust quality control measures which including regular testing for pathogens and spoilage microorganisms to ensure the microbiological safety of their products (Grigorakis et al., 2017). This may involve conducting microbial analysis at various stages of the supply chain, from harvesting to distribution, to identify and mitigate potential sources of contamination.

2.3.2 Supply Chain Complexity

Supply Chain Complexity is a defining characteristic of the frozen seafood industry, presenting importers with a myriad of challenges that affect operational efficiency and profitability. The supply chain encompasses a wide range of stakeholders and processes which spanning from harvesting seafood at its source to its distribution to consumers across various markets.

One of the primary challenges importers face is achieving supply chain visibility. With multiple intermediaries involved in the process including fishermen, processors, distributors, and retailers, tracking the movement of seafood products

becomes inherently complex (Laverty, 2016). Importers often lack real-time visibility into the status and location of their shipments which leading to uncertainties and delays in delivery schedules. This lack of visibility not only disrupts operations but also hampers the ability to respond promptly to changes or disruptions in the supply chain.

Coordination and communication among stakeholders pose additional challenges for importers. Effective coordination is essential to ensure seamless flow of goods and information throughout the supply chain, yet achieving alignment among disparate actors can be challenging (Wu & Pagell, 2011). Miscommunications or breakdowns in coordination can result in delays, stock outs, and increased costs, undermining the reliability and efficiency of the supply chain. Furthermore, inefficient inventory management exacerbates supply chain challenges for importers. Inaccurate demand forecasting, inadequate inventory controls, and poor inventory visibility can lead to overstocking or understocking of products which resulting in increased carrying costs or missed sales opportunities (Christopher & Peck, 2004). Importers must strike a delicate balance between maintaining optimal inventory levels to meet demand while minimizing excess inventory and associated costs.

Moreover, the lack of transparency within the supply chain complicates efforts to address inefficiencies and identify opportunities for improvement. Importers may struggle to obtain accurate and timely information regarding product quality, quantity, and movement, making it difficult to make informed decisions and optimize supply chain performance (Christopher & Peck, 2004). Enhancing transparency through improved data sharing and collaboration among stakeholders is crucial for streamlining operations and enhancing supply chain resilience.

2.3.3 Regulatory Compliance

Regulatory Compliance is a critical aspect of operating in the frozen seafood industry, as importers must adhere to a multitude of regulations governing various aspects of their business operations. These regulations encompass international,

national, and regional standards which creating a complex compliance landscape that importers must navigate to ensure legal and ethical business practices.

One of the primary challenges for importers is the sheer diversity and variability of regulatory requirements across different markets. Each country or region may have its own set of regulations governing food safety, labelling, trade, and environmental sustainability (González-Sagrado et al., 2020). Navigating these regulatory frameworks requires importers to invest significant resources in understanding and interpreting the requirements applicable to their products and markets of operation. Moreover, regulatory requirements are subject to frequent changes and updates which further complicating compliance efforts.

Documentation accuracy is another challenge for importers, as regulatory compliance often hinges on the completeness and accuracy of documentation accompanying imported seafood products, different countries might require varying documentation for the same product.(Cao et al., 2019). Importers are required to maintain comprehensive records of product origin, sourcing practices, manufacturing processes, and compliance certifications to demonstrate conformity with regulatory standards. Failure to maintain accurate documentation can result in delays in customs clearance, non-compliance penalties, or even product recalls, imposing significant financial and reputational costs on importers. Keeping abreast of regulatory changes and updates presents an ongoing challenge for importers. Regulatory landscapes are dynamic with new regulations being introduced, existing regulations being amended, and enforcement priorities shifting over time (Carter et al., 2017). Importers must proactively monitor regulatory developments, engage with regulatory authorities and industry associations and seek legal counsel to ensure compliance with evolving regulatory requirements. Failure to stay updated on regulatory changes can expose importers to compliance risks and legal liabilities, jeopardizing their market access and competitiveness.

2.3.4 Market Volatility and Competition

Market Volatility and Competition are significant challenges that confront frozen seafood importers, as they operate in a dynamic and unpredictable market environment influenced by a multitude of factors.

One of the primary drivers of market volatility is changing consumer preferences. Consumer tastes and preferences for seafood products can be influenced by factors such as health trends, cultural influences, and dietary preferences (Hoekstra et al., 2019). Importers must continuously monitor and anticipate shifts in consumer demand to adjust their product offerings accordingly. Failure to respond effectively to changing consumer preferences can result in excess inventory, markdowns, or missed sales opportunities, impacting profitability and market share.

Economic conditions also play a pivotal role in shaping market volatility within the frozen seafood industry. Fluctuations in macroeconomic indicators, such as GDP growth, inflation rates, and exchange rates can impact consumer purchasing power and overall demand for seafood products (Hoekstra et al., 2019). Importers must be prepared to adjust their pricing strategies, supply chain operations, and marketing efforts in response to economic downturns or periods of recession to maintain competitiveness and financial resilience.

In recent 5 years , Malaysia Ringgit has been depreciated from RM1 to 0.243USD to RM1 to 0.22USD(Bank Negara 2023). The exchange rate has a significant impact on a country's trade and affecting economic growth and development (Rahman, 2020). Import and export activities are essential for a country’s economy and the appreciation or depreciation of the country's currency will directly affect a country’s import and export volume. Economic growth is also influenced by imports, exports, and exchange rates (Habanabakize, 2020). Exchange rate fluctuations have been a significant concern for importers across various industries; including the frozen seafood sector sudden changes in exchange rates can lead to unpredictable import costs, affecting profit margins and financial planning.

A study using the VECM model found evidence that nominal exchange rate shocks significantly influence fluctuations in import prices in Malaysia. This indicates that Malaysia is highly sensitive to external shocks, especially those related to exchange rate changes. When import or export prices experience high volatility due to these shocks, it can have a larger impact on the real activities of the economy. The effect of exchange rate changes on import and export prices is known as exchange rate pass through (Duasa, 2009).A research findings show that currency volatility has a negative impact on maritime import volume. This means that exchange rate fluctuations can lead to a decrease in maritime imports because the risks and costs associated with the volatility increase over the long term (Kim, 2017). Depreciation of Ringgit Malaysia in recent years has lowered the purchase power of frozen seafood importers and it affects their sales volume in local market as well.

Geopolitical events and trade policies represent another source of volatility for the frozen seafood market. Changes in trade agreements, tariffs, and import/export regulations can disrupt supply chains, alter market dynamics, and impact pricing structures (Hoekstra et al., 2019). Importers operating in multiple markets must navigate geopolitical uncertainties and trade barriers to mitigate risks and capitalize on emerging opportunities. Diversifying sourcing strategies, expanding into new markets, and establishing strategic partnerships can help importers mitigate the adverse effects of geopolitical volatility and protect their market position.

Intensifying competition further escalates market volatility for importers. The frozen seafood industry is characterized by a proliferation of market players, ranging from multinational corporations to small-scale producers and distributors (Wittke et al., 2015). Importers must differentiate their offerings through product innovation, branding, and value-added services to stand out in a crowded marketplace. Additionally, technological advancements, such as e-commerce platforms and digital marketing channels, have lowered barriers to entry, enabling new competitors to enter the market and disrupt traditional business models (Unnevehr & Jensen, 2012). Importers must embrace digital transformation and

leverage technology to enhance operational efficiency, improve customer engagement, and stay ahead of the competition.

2.3.5 Traceability

Ensuring traceability throughout the supply chain is critical for importers to address mislabelling and fraud issues. Traceability systems enable the identification of the origin, processing, and distribution of seafood products, reducing the risk of mislabelling and enhancing transparency (Miller & Mariani, 2010). These systems not only provide a means to track products from source to shelf but also facilitate quick response to food safety incidents or product recalls, safeguarding consumer health and trust (Jacobsen et al., 2020).

However, challenges such as the complexity of supply chains, inadequate documentation, and fraudulent practices hinder effective traceability implementation. Importers must overcome these obstacles through technological innovations, such as block chain or RFID (Radio-Frequency Identification) systems, that offer real-time visibility and data integrity across the supply chain (Jacobsen et al., 2020). Collaborative efforts among stakeholders, including governments, industry associations, and certification bodies are also essential to establish standardized traceability protocols and ensure their widespread adoption (Miller & Mariani, 2010).

2.3.6 Mislabelling

Mislabelling poses significant risks to both consumers and importers which undermining trust in the seafood supply chain and exposing importers to regulatory non-compliance penalties (Galletti et al., 2019). Species substitution, where a cheaper or lower-quality species is substituted for a more expensive or desirable one, it is a common form of mislabelling that deceives consumers and compromises product quality (Jacobsen et al., 2020). For instance, a study found that 33% of seafood samples in the United States were mislabelled, with instances of cheaper fish like tilapia being sold as red snapper, and farmed salmon being

marketed as wild-caught. This kind of deception not only misleads consumers but also impacts their health and dietary choices (Warner et al.,2013).

Additionally, inaccurate labelling of product origin can mislead consumers about the sustainability and safety of seafood products which further eroding trust in the industry (Galletti et al., 2019). For example, a high-profile case in Europe involved the substitution of horse meat for beef, which although not directly related to seafood, underscores the broader issue of food fraud and the critical need for accurate labelling. In the seafood industry, similar issues have been identified, such as the mislabelling of Patagonian tooth fish, also known as Chilean sea bass, which raised concerns about overfishing and environmental sustainability (Marko et al., 2004). Importers must invest in robust traceability systems, including DNA barcoding and isotopic analysis to authenticate product identity and verify labelling claims (Galletti et al., 2019). Collaborating with suppliers and regulatory authorities to implement rigorous quality control measures and conduct regular audits can help mitigate mislabelling risks and ensure the authenticity and integrity of seafood products (Galletti et al., 2019). Importers should also educate consumers about the importance of verifying product labels and purchasing seafood from reputable sources to make informed choices and support transparency in the seafood market.

2.3.7 Insufficient Cold Storage Facility

In Malaysia, from 2015 to 2020, the industries in dependent on cold chain logistics are expected to experience an annual growth rate ranging from 5 to 10 percent. (Tan & Li, 2018). Cold chain services are not widely available in Malaysia, and there are limited providers. The lack of cold storage for marine products is also a significant concern (De & Singh, 2021). Despite a growing demand shown by increasing import volume, there might be a supply shortage in the future if the issue is not addressed. The persistent challenge of limited cold storage facilities poses difficulties for frozen seafood importers in properly storing and managing their products. Fish being highly perishable and the lack of sufficient storage facilities have led to frequent spoilage, forcing both importers

and local seafood manufacturers to discard a significant amount of rotten fish or sell it with low prices (Amjath Babu et al., 2020).

The cold chain business plays a critical role in supporting various industries like food processing, fishing, retail, pharmaceuticals, and more. It ensures the safe transportation and storage of temperature sensitive products, preserving their quality and freshness, and contributing to the success of these sectors. Logistics plays a crucial role in global trade, connecting suppliers and customers internationally (Frazelle, 2016). It ensures that the right products are delivered to the right place, at the right time, and in the right condition, all at the right cost. A well-functioning logistics system boosts profitability, advances the economy, and enhances competitiveness.(Heaver, 2001) In the import export process, a typical corridor involves port activities, transportation, warehousing (including cold storage), and customs checks. Cold storage is essential for storing temperature sensitive products and limited infrastructure in this area can lead to quality issues and product spoilage during storage and transportation, impacting purchase volumes (Frazelle, 2016). Sufficient availability of cold storage facility is essential in the import--export chain, as it reduces costs and minimizes product damage, allowing companies to deliver products to customers on schedule.

2.3.8 Supplier Reliability

The reputation of a supplier is not entirely based on the quality of its products but also on its reliability as a supplier, meaning delivering the agreed upon quality on time and respect to the sales agreement (Carrex International Ltd, 2002).The moral hazard problem with suppliers means that exporting firms may have the opportunity and motivation to deceive importing companies by providing different levels of quality for each transaction. (Mishra et al., 1998).In exporter importer relationships, unequal information leads to higher risks for importers. These risks include delays in product delivery, misrepresentation of product characteristics, quality problems, and breach of contract.(Mishra et al., 1998). In international trade, the reliability and trustworthy of exporters is a key components in import. An unreliable supplier might deliver a quantity lower than agreed and quality that

different from what is agreed, causing importers to face shortages in stock to fulfil customer demands. Even if the product's quality is good, late deliveries can result in extra costs for the buyers or. A lack of reliability from one supplier can impact the entire supply chain (Islam et al., 2020).Untrustworthy suppliers have been identified as a major obstacle in the frozen seafood import business, disruptions caused by unreliable suppliers can lead to reputation damage, customer complaints, and financial losses.

2.4 Supply Chain Management Theory to Address Challenges in Frozen Seafood Importation

Supply chain management (SCM) theory encompasses the planning and management of all activities involved in sourcing, procurement, conversion, and logistics management. It also includes the crucial components of coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. Effective SCM integrates supply and demand management within and across companies (Council of Supply Chain Management Professionals, 2013). SCM theory provides a comprehensive framework for understanding the complex challenges faced by frozen seafood importers. Key concepts such as supply chain integration, inventory management, supplier relationship management, quality and safety standards, logistics and distribution, risk management, and information technology are crucial for addressing these challenges. Integration is essential for seamless operations across various stages of the supply chain, helping to coordinate with multiple international suppliers, maintain consistent quality, and ensure timely delivery despite the perishability of products (Christopher, 2016). Effective inventory management is vital due to the perishable nature of seafood, requiring advanced techniques and technologies like just-in-time inventory and cold chain logistics to minimize spoilage and holding costs (Simatupang & Sridharan, 2002). Building strong relationships with suppliers is necessary to ensure a reliable supply of high-quality seafood, involving negotiating favourable terms and managing supplier reliability (Handfield et al., 2019). Compliance with international quality and

safety standards poses a significant challenge, necessitating rigorous quality control measures to meet regulatory requirements and prevent issues like contamination (Christopher, 2016). Efficient logistics and distribution are critical for maintaining the integrity of the cold chain during transit, addressing challenges in managing transportation and optimizing shipping routes (Simatupang & Sridharan, 2002). Risk management strategies are essential to mitigate various vulnerabilities, including supply disruptions and market fluctuations, ensuring business continuity and resilience (Handfield et al., 2019). Lastly, the adoption of advanced information technology and systems enhances supply chain visibility and efficiency, though it poses challenges related to cost, training, and interoperability (Christopher, 2016). By applying these SCM concepts, frozen seafood importers can better understand and address the multifaceted challenges they face, enhancing supply chain resilience, efficiency, and competitiveness.

Supply chain management (SCM) theory offers a multi-faceted framework for exploring the challenges and opportunities faced by frozen seafood importers. Supply chain management (SCM) theory has gained significant traction in recent scholarly works, reflecting its critical importance in modern business operations. For instance, Ivanov and Dolgui (2020) discuss how supply chain resilience has become a focal point, especially in the wake of global disruptions such as the COVID-19 pandemic. SCM theory provides the tools and frameworks necessary for companies to anticipate, prepare for, and respond to supply chain disruptions, thereby minimizing potential impacts on operations and profitability. SCM theory helps organizations develop sustainable supply chain practices, such as reducing carbon footprints, ensuring fair labour practices, and sourcing responsibly, which are crucial for maintaining a positive brand image and meeting regulatory requirements. Furthermore, the integration of advanced technologies into supply chain operations is another significant area of focus. Recent research explores the impact of technologies like block chain, IoT, and artificial intelligence on enhancing supply chain transparency, efficiency, and security (Queiroz et al., 2020). SCM theory supports the adoption and implementation of these technologies, providing a structured approach to digital transformation that can

lead to improved decision-making and competitive advantage. As supply chains become more global and complex, SCM theory offers essential insights into managing these intricacies. Scholarly works highlight the challenges of coordinating international supply chains and the need for strategic management to handle diverse market demands, regulatory environments, and cultural differences (Christopher, 2016). SCM theory helps organizations navigate these complexities, ensuring smooth operations and effective coordination across borders.

2.5 The gap – a need for a theoretical framework supporting transparency and traceability for frozen seafood importers

The gap in the current literature and practice is the need for a comprehensive theoretical framework that supports transparency and traceability in frozen seafood importation. While supply chain management (SCM) theory provides various tools and concepts for managing supply chains, there is a specific need to focus on the unique challenges of the frozen seafood industry. This includes ensuring that all stages of the supply chain, from sourcing and procurement to distribution and retail, are transparent and traceable. Existing research highlights the importance of resilience, sustainability, and technology integration, but there is a gap in explicitly addressing how these elements can be systematically applied to enhance transparency and traceability in the context of frozen seafood importation. Moreover, there is a lack of robust policies and frameworks to protect importers from the complexities and vulnerabilities inherent in the global seafood market. Importers often face challenges related to quality control, regulatory compliance, and fraud prevention without sufficient policy support. Developing a comprehensive SCM framework that incorporates transparency, traceability, and policy support would help stakeholders improve product safety, quality assurance, regulatory compliance, and consumer trust in this highly sensitive and perishable product category. This framework would also provide a more secure operating environment for importers, mitigating risks and enhancing overall supply chain resilience

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Methodology

3. Introduction

This chapter details the methodology used to explore the challenges experienced by frozen seafood importers in Malaysia. Given the scarcity of prior research on this subject, a qualitative approach was selected to gain deeper insights and a comprehensive understanding of the industry's complexities. The chapter discusses the research method, paradigm, context, sampling method, participants, interview design, data collection, data analysis, ethical considerations, and strategies to ensure the validity and reliability of the findings. By combining a literature review with semi-structured interviews, this study aims to provide a thorough analysis of the factors affecting the importation process and the challenges faced by stakeholders in the frozen seafood import sector.

3.1 Research Method

Due to the limited existing research on the challenges encountered by frozen seafood importers in Malaysia, a qualitative approach utilizing interviews is deemed appropriate for this study. Qualitative approach is commonly conducted when there is limited knowledge about the phenomenon being investigated. (Klopper, 2008). Moreover, this research adopted an exploratory qualitative method employing semi-structured interviews with industry experts. Qualitative research within the realm of market research involves the collection and analysis of qualitative data through open-ended communication. The primary objective of employing qualitative research methods is to delve into individuals' thoughts,

emotions, opinions, and underlying motivations, thereby gaining profound and insightful perspectives into the nuances of the frozen seafood industry.

Qualitative research proves advantageous for studying the challenges faced by frozen seafood importers in Malaysia due to its capability to facilitate in-depth exploration and capture nuanced experiences. It allows for open-ended discussions that uncover concealed issues and emerging trends, thereby providing the flexibility to tailor questions based on respondents' inputs. This method is particularly effective in tracking the dynamic nature of challenges such as regulatory compliance, supplier reliability, and market fluctuations. Moreover, the interactive and personal nature of qualitative research fosters trust and encourages candid sharing of information, contributing to a comprehensive and contextually rich understanding of the intricate dynamics within the industry (Tenny et al., 2017).

In contrast, quantitative research methods are less suitable for exploring the multifaceted challenges encountered by frozen seafood importers in Malaysia due to inherent limitations. Quantitative approaches typically rely on structured surveys and numerical data, which, while offering a broad overview, often fail to capture the depth and complexity necessary to comprehend importation challenges fully. These methods tend to focus narrowly on specific metrics, potentially overlooking critical issues such as logistical complexities, variations in quality control among suppliers, or the impact of regulatory changes. The rigid structure of quantitative surveys necessitates predetermined questions and response options, which may not encompass emerging issues that arise during the research process. This rigidity can lead to incomplete or superficial data that do not adequately reflect the real-world experiences and challenges faced by importers (Paley, 2000).

Furthermore, qualitative methods excel in exploring the contextual intricacies surrounding importation challenges. Through semi-structured interviews, researchers can gain firsthand insights into how importers perceive and navigate these challenges within their operational contexts (Opdenakker, 2006). Such qualitative insights are invaluable for understanding the adaptive strategies importers employ in response to evolving market conditions, regulatory

frameworks and consumer preferences. By exploring different social settings and individual perspectives, qualitative research allows for a nuanced exploration of the meanings, challenges and obstacles encountered in daily business operations within the frozen seafood import sector.

Furthermore, the exploratory nature of qualitative research is well-suited to uncovering previously unexplored areas and challenges within the frozen seafood import sector in Malaysia. While experimental designs may be suitable for early-stage phenomena, qualitative interviews are particularly effective for gaining a comprehensive understanding of stakeholders' perspectives and experiences in the industry (Vass et al., 2021). By utilizing an open-ended approach, qualitative research encourages interviewees to freely express their viewpoints, thereby revealing new insights and perspectives without constraints (Guion et al., 2011). This methodological approach is vital for investigating the complexities and dynamics within the frozen seafood import sector, ultimately contributing to informed decision-making and strategic planning within the industry.

3.2 Research Paradigm

This study adopts a qualitative research paradigm to comprehensively investigate the multifaceted challenges encountered by frozen seafood importers in Malaysia. A research paradigm serves as a foundational framework that guides the researcher's approach to understanding the phenomena under study, influencing the methods chosen for data collection, analysis, and interpretation (Guba & Lincoln, 1994). In this context, qualitative research is selected for its inherent strengths in exploring and comprehending the complexities and nuances inherent in importation challenges through in-depth interviews with industry experts.

Qualitative research is firmly situated within an interpretivist paradigm, which prioritizes understanding subjective experiences, meanings, and contexts from the perspectives of participants (Denzin & Lincoln, 2018). This paradigmatic choice is particularly apt for investigating how importers perceive and navigate

regulatory compliance, supplier reliability, market fluctuations, and other challenges within the frozen seafood industry. By employing semi-structured interviews, this study seeks to uncover tacit knowledge, hidden issues, and emergent trends that quantitative methods, focused on numerical data alone, may overlook.

Furthermore, qualitative research within a constructivist paradigm acknowledges the socially constructed nature of knowledge and reality, emphasizing that these are shaped through interactions and interpretations (Guba & Lincoln, 1994). This approach is especially suitable for investigating the diverse and evolving nature of importation challenges in the dynamic industry context of frozen seafood. By embracing multiple realities and interpretations, this study aims to generate rich, contextually embedded insights that contribute to a deeper understanding of the operational dynamics and strategic responses within the frozen seafood import sector in Malaysia.

In addition, the qualitative research paradigm adopted in this study provides a robust framework for exploring the multifaceted challenges faced by frozen seafood importers in Malaysia. By emphasizing participant perspectives, contextual understanding, and the construction of meanings within the industry, this research paradigm aims to uncover valuable insights that inform strategic decision-making, policy development, and practical interventions aimed at enhancing the resilience and sustainability of the sector.

3.3 Research context

The research context for studying the challenges faced by frozen seafood importers in Malaysia is multifaceted, encompassing a range of interconnected factors that shape the operational landscape and industry dynamics. Geopolitically, Malaysia's strategic location in Southeast Asia facilitates its integration into the global seafood trade network. This proximity to major seafood-producing countries in the Asia-Pacific region, like Thailand, Vietnam, and Indonesia, offers

logistical advantages but also introduces complexities related to transportation, storage, and cross-border regulatory frameworks (Kasperson & Ming, 2018).

Economically, Malaysia's frozen seafood sector operates within a competitive global market influenced by fluctuating trade policies, economic conditions, and evolving consumer preferences. Importers must navigate price pressures while maintaining product quality, combating challenges such as mislabelling, where products are inaccurately represented in terms of species or origin to deceive consumers or bypass regulations (Bennett & Magnan, 2020). Additionally, competition often involves deceptive practices such as high glazing, where products are coated with ice or chemicals to increase weight and profitability, impacting both consumer trust and regulatory compliance (Tsai et al., 2019).

Culturally, Malaysia's diverse population and multicultural society contribute to varied dietary habits and preferences, influencing demand for specific types of seafood products. Cultural considerations extend to food safety perceptions and ethical sourcing practices, which influence consumer choices and regulatory standards governing importation (Hartmann et al., 2021). These factors underscore the importance of transparency and traceability in supply chains to ensure that imported seafood meets ethical and environmental standards demanded by consumers and regulatory bodies alike.

Legally, Malaysia adheres to international food safety and trade standards set by organizations such as the WTO and regional bodies like ASEAN. Importers must comply with stringent regulations regarding traceability, hygiene, and documentation to ensure the safety and quality of imported seafood products. Non-compliance can lead to regulatory penalties and reputational damage, emphasizing the need for robust regulatory frameworks and enforcement mechanisms (FAO, 2020).

Technologically, advancements in traceability systems and cold chain logistics are critical for maintaining seafood quality and integrity throughout the importation process. Innovations in these areas help address challenges related to product

shelf-life management, authenticity verification, and supply chain transparency, enabling importers to track products from source to consumer accurately (Zhao et al., 2021).

Environmentally, concerns such as overfishing, climate change impacts on marine ecosystems, and sustainability drive global efforts towards responsible seafood sourcing. Importers face increasing pressure to adopt sustainable practices, certify products with eco-labels, and implement traceability systems that verify sustainable sourcing claims. These initiatives are essential for mitigating environmental impacts and meeting consumer expectations for ethical and sustainable seafood choices (Hilborn et al., 2020).

In addition, the research context for studying the challenges of frozen seafood importers in Malaysia encompasses geopolitical, economic, cultural, legal, technological, and environmental dimensions. Understanding and addressing these multifaceted challenges is crucial for developing effective strategies that enhance the resilience, sustainability, and competitiveness of the frozen seafood import sector in Malaysia. This comprehensive approach not only identifies current challenges but also aims to propose sustainable solutions that promote responsible seafood trade and meet evolving consumer demands.

3.4 Sampling method and participants

The sampling strategy for this study was meticulously designed to encompass a wide array of perspectives and experiences within Malaysia's frozen seafood import industry. The study employed a combination of purposive and snowball sampling methods to ensure the inclusion of diverse and knowledgeable participants.

3.4.1 Purposive Sampling Method

Initially, purposive sampling was utilized to identify five key stakeholders with significant expertise and extensive tenure in the field. These individuals hold pivotal roles in leading companies that have been instrumental in shaping the

industry landscape for over a decade. Each stakeholder brings a unique educational background to the table, ranging from an MBA holder to those with secondary school, degree, and primary school education levels. This diversity ensures not only a comprehensive exploration of challenges but also enriches the qualitative data by incorporating varied insights and approaches. Purposive sampling is particularly suitable for this study as it allows the selection of participants who possess specific characteristics and expertise that are crucial for understanding the complex issues within the frozen seafood import industry. This method is effective in qualitative research where the goal is to gain deep insights from knowledgeable individuals who can provide rich, relevant, and diverse information (Palinkas et al., 2015)

3.4.2 Sample Size

The sample size for this study consisted of five key participants initially selected through purposive sampling. The subsequent snowball sampling led to additional interviews, with the final sample size being determined by the point of thematic saturation. This iterative process ensured the inclusion of a robust and diverse range of perspectives, capturing the nuanced complexities influencing decision-making and operational practices within the industry. The concept of thematic saturation is widely recognized in qualitative research as the point at which no new information or themes are observed in the data, indicating that the sample size is sufficient to provide a comprehensive understanding of the research topic (Guest et al., 2006)

3.4.3 Snowball Sampling Method

Due to the lack of extensive industrial evidence for a purely purposive approach, the study also employed a snowball sampling strategy. This method is well-suited for studying the challenges confronted by frozen seafood importers in Malaysia. It begins by identifying initial participants who possess deep knowledge and experience within the industry, such as importers, distributors, and recognized industry experts. Through in-depth interviews with these initial participants,

various critical issues are explored, including traceability concerns, competitive dynamics, quality control practices, logistical complexities, and regulatory hurdles. Subsequently, each interview concludes with a request for referrals to other individuals who could provide valuable insights into the industry's challenges. Sampling continues until thematic saturation is reached, meaning that new interviews no longer yield substantially new information about the challenges faced by frozen seafood importers. This ensures that the study captures a comprehensive range of perspectives and experiences. By systematically building upon these referrals, the snowball sampling method facilitates the inclusion of stakeholders who may otherwise be overlooked, ensuring a comprehensive exploration of the multifaceted challenges faced by frozen seafood importers in Malaysia (Naderifar, 2017). Furthermore, snowball sampling can be a useful approach to researching phenomena such as scams involving exporters delivering incorrect products or receiving payment without delivering goods, which may not be widely reported in news or emphasized by governmental authorities. By uncovering such experiences through interviews, this method provides valuable insights to frozen seafood importers, alerting them to potential issues and enhancing industry awareness.

Overall, the sampling approach was meticulously crafted to gather robust qualitative data that not only highlights the challenges faced by frozen seafood importers but also provides actionable insights for enhancing industry practices. The findings are expected to contribute significantly to the strategic decision-making processes of stakeholders, regulatory bodies, and policymakers involved in shaping the future of Malaysia's frozen seafood import industry. Conducting interviews with experts in the field is an effective method of data collection, especially when exploring emerging areas such as logistics, traceability, competition, mislabelling, and supplier trustworthiness.

3.5 Interview Design

This research investigates the challenges encountered by frozen seafood importers in Malaysia. To gather detailed insights, semi-structured interviews were

conducted with key stakeholders in the industry. This format was chosen for its flexibility and capacity to provide comprehensive data while maintaining a structured approach (Kvale & Brinkmann, 2009).

The interviews aimed to identify primary challenges in the importation process, understand factors influencing supplier selection, examine issues related to regulatory compliance and economic aspects, explore quality control, logistics, and traceability concerns, and investigate labelling practices and the implications of mislabelling. The interviews were organized into six sections, each focusing on specific aspects of the importation process and related challenges.

The first section, "General Information," sought to collect background details about the interviewee and their role. Example questions included descriptions of their responsibilities as a frozen seafood importer in Malaysia and the length of their experience in the industry. The second section, "Importation Process, Regulatory Compliance, Economic Aspects," aimed to understand the importation process, compliance requirements, and economic factors. Questions in this section addressed the steps involved in importing frozen seafood into Malaysia, key processes, and main challenges faced during importation.
The third section, "Quality Control, Logistics, Selection of Suppliers," explored measures for quality control, logistics management, and criteria for supplier selection. Interviewees were asked about challenges related to the storage and inventory management of frozen seafood and how they handle price fluctuations and currency exchange rates. The fourth section, "Traceability," assessed methods and challenges associated with tracking the origin of frozen seafood. Questions in this section focused on tracking methods, difficulties in maintaining traceability through the supply chain, and the use of technology for tracing purposes.

The fifth section, "Labelling," investigated labelling practices and issues related to mislabelling. Interviewees were asked to share experiences with mislabelling or inaccurate labelling of frozen seafood products and the specific steps taken to ensure accurate and reliable labelling information. The final section, "Closing," gathered additional insights and suggestions for overcoming challenges. Questions

in this section included requests for any further information the interviewee wished to share and recommendations for addressing the discussed challenges.

The semi-structured interview format was selected to balance the need for consistency across interviews with the flexibility to delve deeper into specific issues as they arose. This format allowed for follow-up questions and in-depth exploration based on the interviewee's responses (Gill et al., 2008). Open-ended questions were used to facilitate a thorough understanding of the complex and multifaceted challenges faced by frozen seafood importers in Malaysia.

Interviews were conducted in the interviewees' offices to ensure a comfortable and familiar environment conducive to open discussion. Conducting the interviews in their offices likely contributed to richer, more candid responses and minimized disruptions. Each interview lasted approximately 30-40 minutes, allowing sufficient time to cover all sections thoroughly without causing fatigue to the participants. A total of five interviews were conducted with stakeholders chosen based on their expertise and experience in the frozen seafood import industry, representing both East and West Malaysia. The diversity in the interviewees' backgrounds, including their roles and experience lengths, ensured a comprehensive understanding of the industry's challenges.

3.6 Data Collection

The data collection process for this research involved two main methods: a literature review and semi-structured interviews. These approaches were complementary and provided a thorough understanding of the challenges faced by frozen seafood importers in Malaysia.

The literature review aimed to gather existing knowledge and identify gaps related to the challenges in the frozen seafood import industry. Various sources, including academic databases, industry reports, and government publications, were examined to collect relevant information ((Denzin, 2012). The review focused on

studies addressing regulatory compliance, economic factors, quality control, logistics, traceability, and labelling within the context of seafood importation. This provided a theoretical foundation and contextual background for the empirical part of the research which helping to shape the interview questions and serving as a benchmark for comparing empirical findings.

To gain deeper insights, semi-structured interviews were conducted with five key stakeholders in the frozen seafood import industry between May 2024 and June 2024. All interviews were recorded with the participants' consent. The recordings were transcribed verbatim to ensure all details were captured accurately. Each transcription was meticulously reviewed to ensure accuracy and completeness. Follow-up interviews were conducted as necessary to address any identified errors or gaps. This rigorous approach ensured the data collected was reliable and valid.

The interviews continued until data saturation was reached, meaning no new themes or insights were emerging (Fusch & Ness, 2015). Reaching this point confirmed that the sample size and data collected were sufficient to fully explore the research questions. The rich data obtained from these interviews provided valuable insights into the challenges faced by frozen seafood importers, which were then analyzed to identify common themes and patterns.

3.7 Ethical Considerations

Ethical considerations were integral to this research to ensure the protection of participants and the integrity of the data collected. Several key ethical principles guided the research process, based on institutional guidelines and the Personal Data Protection Act (PDPA) of Malaysia. Ethical considerations involve protecting the rights of participants, ensuring informed consent is obtained, and obtaining ethical approval (Klopper, 2008).

Prior to conducting the interviews, all participants were provided with detailed information about the study's purpose, methods, potential risks, and benefits, as

outlined in the interview form. This information was presented clearly and understandably, allowing participants to make an informed decision about their involvement. Consent forms were signed by each participant, ensuring they were fully aware of their rights, including the right to withdraw from the study at any time without any consequences. The informed consent process was compliant with UTAR's ethical guidelines.

To protect the privacy of the participants, all data collected during the interviews were anonymized. Personal identifiers were removed from the transcripts, and each participant was assigned a unique code. This ensured that individual responses could not be traced back to any specific participant. Additionally, all electronic data were stored on secure, password-protected devices, and hard copies were kept in a locked cabinet accessible only to the researcher. UTAR's policies on personal data protection were strictly followed.

Ensuring the integrity and security of the data was a priority throughout the research process. Interviews were recorded with the participants' consent, and the recordings were stored securely. The transcriptions were reviewed multiple times to ensure accuracy. Any follow-up interviews required to address gaps or errors were conducted promptly. All data handling procedures complied with relevant data protection regulations to prevent unauthorized access or breaches.
The research was conducted with the utmost respect and sensitivity towards the participants. Interviews were scheduled at times convenient for the participants and conducted in their offices to create a comfortable environment for open discussion. The questions were designed to avoid causing any discomfort or distress. Participants were encouraged to share their experiences freely, and their perspectives were respected and valued throughout the research process.

Before commencing the study, ethical approval was obtained from the UTAR Scientific and Ethical Review Committee under an expedited review process. This approval ensured that the research design, methods, and ethical considerations met the necessary ethical standards and guidelines for conducting research involving human participants.

Adhering to these ethical principles was essential for conducting a responsible and respectful research study. By ensuring informed consent, maintaining confidentiality, protecting data integrity, respecting participants, and obtaining ethical approval, the research upheld the highest ethical standards, contributing to the credibility and reliability of the findings (Steffen., et al 2016).

3.8 Data Analysis -Nvivo/Thematic analysis

The data analysis for this research involved using Nvivo software to facilitate thematic analysis. Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data. It organizes and describes the data set in rich detail and interprets various aspects of the research topic (Braun & Clarke, 2006).

Nvivo, a qualitative data analysis (QDA) software package was used to manage, shape, and make sense of the unstructured information collected from the interviews. The process began with data preparation, where all interview recordings were transcribed verbatim and then imported into Nvivo for analysis. The next step was coding which involved identifying segments of text relevant to the research questions and assigning labels (codes) to these segments. Nvivo facilitated this process by allowing the researcher to highlight sections of the text and apply codes efficiently.

To sort the data, specific codes were used, aligned with the research questions. For the competitive challenges, the codes included: market competition, price wars, and supply chain issues. For labelling challenges, the codes were: inaccurate or misleading information, poor management practices, regulatory compliance, supplier compliance, and unethical supplier behavior. For traceability challenges, the codes encompassed: lack of awareness of traceability, low knowledge of traceability, resistance to change, and supplier cooperation.

Once the data was coded, the next step was to identify themes, which are broader patterns of meaning derived from the codes. The themes identified in this research included competitive challenges, labelling challenges, and traceability challenges. Nvivo helped organize these codes into themes by grouping related codes together and identifying patterns across the data set. The identified themes were then reviewed to ensure they accurately represented the data, involving checking the themes against the coded data and the entire data set to ensure coherence and accuracy. After reviewing, the themes were defined and named, with detailed descriptions outlining what each theme were about and what aspect of the data it captured.

The final step was to produce the report, weaving together the themes into a narrative that answered the research questions. Nvivo's tools were used to create visual representations of the data, such as charts to help illustrate the findings. Thematic analysis, as described by Braun and Clarke (2006), involves six phases: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing the report. The initial phase involved reading and re-reading the data to become intimately familiar with its content. This was achieved through transcribing the interviews and reviewing the transcripts multiple times.

3.9 Validity and Reliability

Ensuring validity and reliability is crucial in qualitative research to establish the credibility and trustworthiness of the findings. This study employed several strategies to enhance the validity and reliability of the data and results.

Table 3 Inter-rater Reliability for Research Themes

Themes	Participants	Kappa Value	Interpretation
(RQ1) Competitive challenges	P1	1	Almost Perfect
(RQ1) Competitive challenges	P2	1	Almost Perfect
(RQ1) Competitive challenges	P3	1	Almost Perfect
(RQ1) Competitive challenges	P4	1	Almost Perfect
(RQ1) Competitive challenges	P5	1	Almost Perfect
(RQ2) Labelling challenges	P1	1	Almost Perfect
(RQ2) Labelling challenges	P2	1	Almost Perfect
(RQ2) Labelling challenges	P3	1	Almost Perfect
(RQ2) Labelling challenges	P4	1	Almost Perfect
(RQ2) Labelling challenges	P5	1	Almost Perfect
(RQ3) Traceability challenges	P1	1	Almost Perfect
(RQ3) Traceability challenges	P2	1	Almost Perfect
(RQ3) Traceability challenges	P3	1	Almost Perfect
(RQ3) Traceability challenges	P4	1	Almost Perfect
(RQ3) Traceability challenges	P5	1	Almost Perfect

Source: Own development

Table 3 presents the inter-rater reliability results for the themes related to competitive challenges, labeling challenges, and traceability challenges, as derived from interviews with five participants (P1 to P5). For each research question (RQ1, RQ2, and RQ3), the kappa value was calculated to assess the consistency of the participants' responses. The kappa values for all participants across all themes were uniformly 1, which signifies perfect agreement among the participants. This level of agreement is interpreted as "Almost Perfect" according to the standard kappa value interpretation scale. According to Landis and Koch (1977), a kappa value of 1 indicates perfect agreement, which underscores the reliability of the findings and supports the robustness of the thematic analysis conducted for this study . The high level of consistency suggests a strong consensus among the participants regarding the identified challenges in the frozen seafood import industry in Malaysia. The detailed analysis, depicted in the table, affirms that participants P1 to P5 have provided highly consistent evaluations of the competitive, labeling, and traceability challenges faced by the industry.

Validity in qualitative research refers to the accuracy and truthfulness of the findings, ensuring that the research accurately reflects the phenomena being studied. To enhance validity, this study adopted several strategies. Triangulation, which involves using multiple data sources, methods, or researchers to cross-verify the findings, was employed by combining literature review findings with interview data. This approach helped validate the findings and provided a comprehensive understanding of the challenges faced by frozen seafood importers in Malaysia (Carter et al., 2014). Member checking was also utilized, allowing participants to review the data and interpretations to ensure accuracy and resonance with their experiences. After the interviews were transcribed, participants were given the opportunity to review their transcripts and provide feedback, thereby validating the findings and ensuring that the participants' perspectives were accurately represented (Birt et al., 2016).

Additionally, rich, thick descriptions were provided to allow readers to understand the setting and make connections to their own contexts. This strategy included comprehensive descriptions of the participants' roles, the challenges they face, and the contextual factors influencing these challenges, enhancing the transferability of the findings to other similar contexts (Creswell, 2014). Peer debriefing was another strategy employed, involving engaging with colleagues or peers to review and discuss the research process and findings. This provided an external check on the research process, helping identify potential biases and improve the overall validity of the findings (Lincoln & Guba, 1985).

Reliability in qualitative research refers to the consistency and dependability of the research findings, ensuring that the research process is transparent and can be replicated by other researchers. To enhance reliability, this study implemented several strategies. An audit trail was maintained, involving a detailed record of all research activities, including data collection, coding, and analysis procedures. This comprehensive documentation of the research process provides transparency and allows other researchers to follow the process (Lincoln & Guba, 1985). The code-recode strategy was also used, where the researcher initially coded a

segment of the data, took a break, and then recoded the same data segment. This process helped identify any discrepancies in the coding and ensured consistent application of the coding scheme throughout the data set (Creswell & Miller, 2000).

Additionally, a detailed methodological description was provided, including thorough descriptions of the data collection and analysis procedures. This ensures that the research process is transparent and replicable by other researchers (Shenton, 2004). By employing these strategies, this study aimed to enhance the validity and reliability of the findings, ensuring they accurately reflect the challenges faced by frozen seafood importers in Malaysia and can be trusted by other researchers and practitioners.

3.10 Limitations

While this research provides valuable insights into the challenges faced by frozen seafood importers in Malaysia, several limitations must be acknowledged as they could impact the generalizability and comprehensiveness of the findings. The study involved semi-structured interviews with five stakeholders in the frozen seafood import industry. Although this sample size allowed for an in-depth exploration of individual experiences and insights, it may not fully capture the diversity of perspectives within the entire industry, potentially limiting the ability to generalize the findings to all frozen seafood importers in Malaysia (Crouch & McKenzie, 2006).

Additionally, the geographic scope of the research was limited to specific regions within East and West Malaysia. Consequently, the challenges and practices observed might not be fully representative of the entire country, particularly in areas that were not included in the study (Patton, 2015). The data collection occurred between May 2024 and June 2024, reflecting the specific conditions of this period. As such, changes in industry regulations, economic conditions, or

market dynamics that occur after this period may not be captured, limiting the relevance of the findings over time (Bryman, 2016).

The study also relied on self-reported data from the interviewees. While efforts were made to ensure the accuracy and honesty of the responses, self-reported data can be subject to biases such as recall bias or social desirability bias, where participants might provide responses they believe are expected or favorable rather than their true experiences or opinions (Althubaiti, 2016). Moreover, the interviews were designed to explore specific challenges faced by frozen seafood importers, including regulatory compliance, quality control, logistics, traceability, and labeling. As a result, other potential areas of interest or emerging challenges that were not included in the interview questions might have been overlooked (Kvale & Brinkmann, 2009).

Despite these limitations, the study offers a valuable contribution to understanding the challenges faced by frozen seafood importers in Malaysia. Acknowledging these limitations provides context for interpreting the findings and highlights areas for future research to build upon and address the gaps identified in this study.

Chapter 4

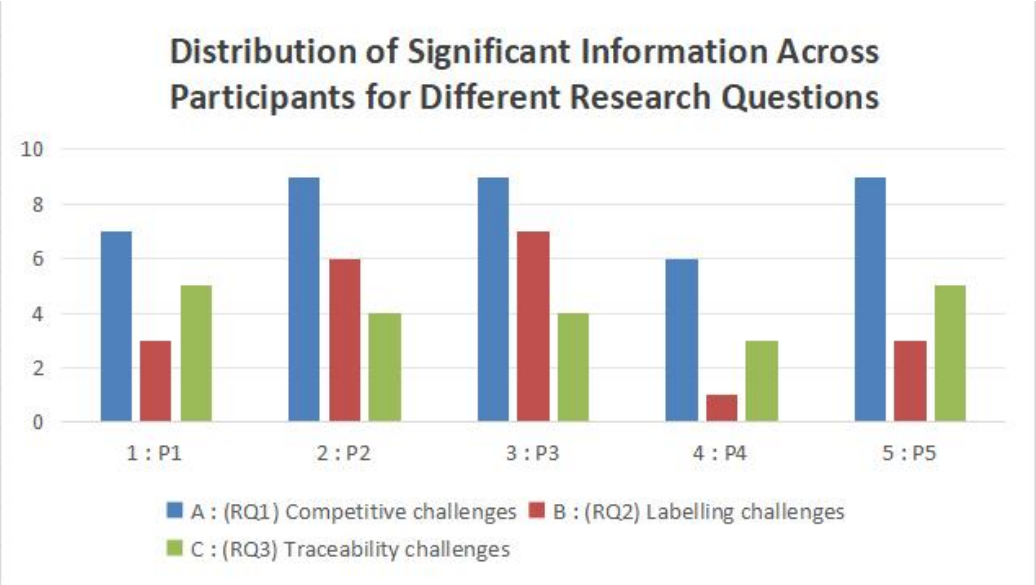
Findings and Discussion

4.0 Introduction

This chapter analyses the qualitative research findings on competitive, labelling, and traceability challenges faced by frozen seafood importers in Malaysia. The data, collected from interviews with key industry participants (P1 to P5) is presented and interpreted in relation to the research questions. The chapter is structured around three main research questions, each addressing specific thematic clusters. The first section examines competitive challenges, focusing on supplier integrity, market conditions, regulatory environment, and consumer behaviour. The second section explores labelling challenges, emphasizing accuracy, ethical practices, and regulatory compliance. The final section addresses traceability challenges, including awareness gaps and barriers to adoption. Direct quotes and examples from interviews illustrate key points, and the findings are compared with existing literature to highlight similarities and differences. The chapter concludes with a discussion of the implications for theory and practice which providing practical recommendations for industry professionals, policymakers and practitioners to address these challenges and enhance industry standards. These findings are based on detailed interviews with participants (P1 to P5), who provided insights into the various issues and challenges they face in their respective fields refer to Figure 5. The analysis is structured into thematic clusters that emerged from the data, each highlighting key aspects of the challenges under investigation.

4.1 Distribution of Significant Information Across Participants for Different Research Questions

Figure 5. Distribution of significant Information across Participants for Different Research Questions



Source: Own Development

4.1.1 Research Question 1: Competitive Challenges

The analysis of competitive challenges revealed several key insights across different participants. The main themes identified were Supplier and Competitor Integrity, Market Conditions and Regulatory Environment, and Consumer Behaviour and Awareness. Supplier and Competitor Integrity: Participants highlighted issues with unreliable suppliers, scammer activities, and unethical competitors. For instance, Participant P1 reported 7 instances related to these challenges, indicating significant concern over the integrity of market actors. This theme underscores the need for businesses to vet their suppliers thoroughly and be vigilant against unethical practices in the market. Market Conditions and Regulatory Environment: Economic conditions and constantly changing regulations were also frequently mentioned. Participants P2 and P3 both cited 9 instances each, reflecting the pervasive impact of these factors on their competitive landscape. The unstable economic environment and regulatory flux

create uncertainty and require businesses to be adaptable and informed about the latest regulatory changes. Consumer Behaviour and Awareness: Consumer awareness and changing preferences, along with high glazing practices, were identified as critical areas. Participant P5, with 9 instances, emphasized the need for better consumer education to cope with these challenges. The data suggests that a significant portion of competitive challenges arises from the dynamic nature of consumer preferences and the lack of consumer awareness about certain practices, which can affect market demand and business strategies.

4.1.2 Research Question 2: Labelling Challenges

Labelling challenges were categorized into two primary themes: Accuracy and Ethical Practices and Compliance and Regulatory Issues. Accuracy and Ethical Practices: Issues such as inaccurate or misleading information and unethical supplier behaviour were prominent. Participant P3 highlighted 7 instances of such challenges, underscoring the need for improved accuracy and ethics in labelling. The presence of misleading information not only impacts consumer trust but also poses risks to brand reputation and compliance with ethical standards. Compliance and Regulatory Issues: Compliance with regulations and supplier compliance were also significant concerns. Participant P2 noted 6 instances, indicating ongoing struggles with maintaining regulatory standards. Ensuring compliance requires robust internal controls and frequent audits to align with regulatory requirements and avoid potential legal and financial penalties.

4.1.3 Research Question 3: Traceability Challenges

Traceability challenges were identified under themes of Awareness and Knowledge Gaps and Adoption and Implementation Barriers. Awareness and Knowledge Gaps: Lack of awareness and low knowledge of traceability were common. Participants P1 and P5 reported 5 instances each, suggesting a widespread need for better education and training on traceability. Effective traceability systems are crucial for ensuring product quality and safety, and addressing these knowledge gaps can enhance operational transparency and

consumer trust. Adoption and Implementation Barriers: Resistance to change and issues with supplier cooperation were also key challenges. Participant P4 noted 3 instances, highlighting the difficulties in implementing effective traceability systems. Overcoming these barriers requires fostering a culture of change and collaboration among suppliers to ensure the successful adoption of traceability practices.

4.1.4 Detailed Participant Insights

Each participant provided unique insights into the challenges faced. Participant P1: Reported 7 instances of competitive challenges, 3 instances of labelling challenges, and 5 instances of traceability challenges. Participant P2: Highlighted 9 instances of competitive challenges, 6 instances of labelling challenges, and 4 instances of traceability challenges. Participant P3: Noted 9 instances of competitive challenges, 7 instances of labelling challenges, and 4 instances of traceability challenges. Participant P4: Cited 6 instances of competitive challenges, 1 instance of labelling challenges, and 3 instances of traceability challenges. Participant P5: Mentioned 9 instances of competitive challenges, 3 instances of labelling challenges, and 5 instances of traceability challenges.

The findings indicate that competitive challenges are multifaceted, involving integrity issues, regulatory conditions, and consumer behaviour. Labelling challenges primarily revolve around accuracy and compliance, while traceability challenges highlight the need for greater awareness and cooperation. Addressing these areas will be crucial for improving market dynamics and operational efficiencies. Future research should focus on developing strategies to mitigate these challenges and enhance overall market performance.

4.2 Participant Sociodemographic

The selected participants bring a balance of seniority, expertise, and regional representation to the study. By including participants from both East and West Malaysia, the study addresses regional differences and provides a comprehensive

view of the industry's landscape. This geographic diversity is crucial given Malaysia's varying market conditions and regulatory landscapes, which can differ significantly between different regions.

The interviews were structured to delve deeply into multifaceted issues such as traceability across the supply chain, competitive dynamics influencing market strategies, stringent quality control measures, complex logistical operations, and the pervasive challenge of mislabelling. The semi-structured format of the interviews provided the flexibility needed to explore emergent themes and unexpected insights as they arose during discussions, fostering a rich dialogue that delved beyond surface-level issues.

Table 4. Participant's profile

Participant ID	Role	Qualification	Years of Experience	Age	Gender	Specialization	Location
P1	Import & Export Manager	MBA	10	35	Male	Frozen Seafood, Import & Export Process	East Malaysia
P2	Director	Secondary School	30	53	Male	Management, Seafood Sector, Competitive Strategy	West Malaysia
P3	Managing Director	Degree	20	49	Male	International Trade, Seafood Sector, Logistics	West Malaysia
P4	Purchasing Manager	Degree	11	35	Male	Import and Frozen Seafood Sector	East Malaysia
P5	Purchasing Manager	Degree	10	45	Male	Sourcing Frozen Seafood, Importation Process	West Malaysia

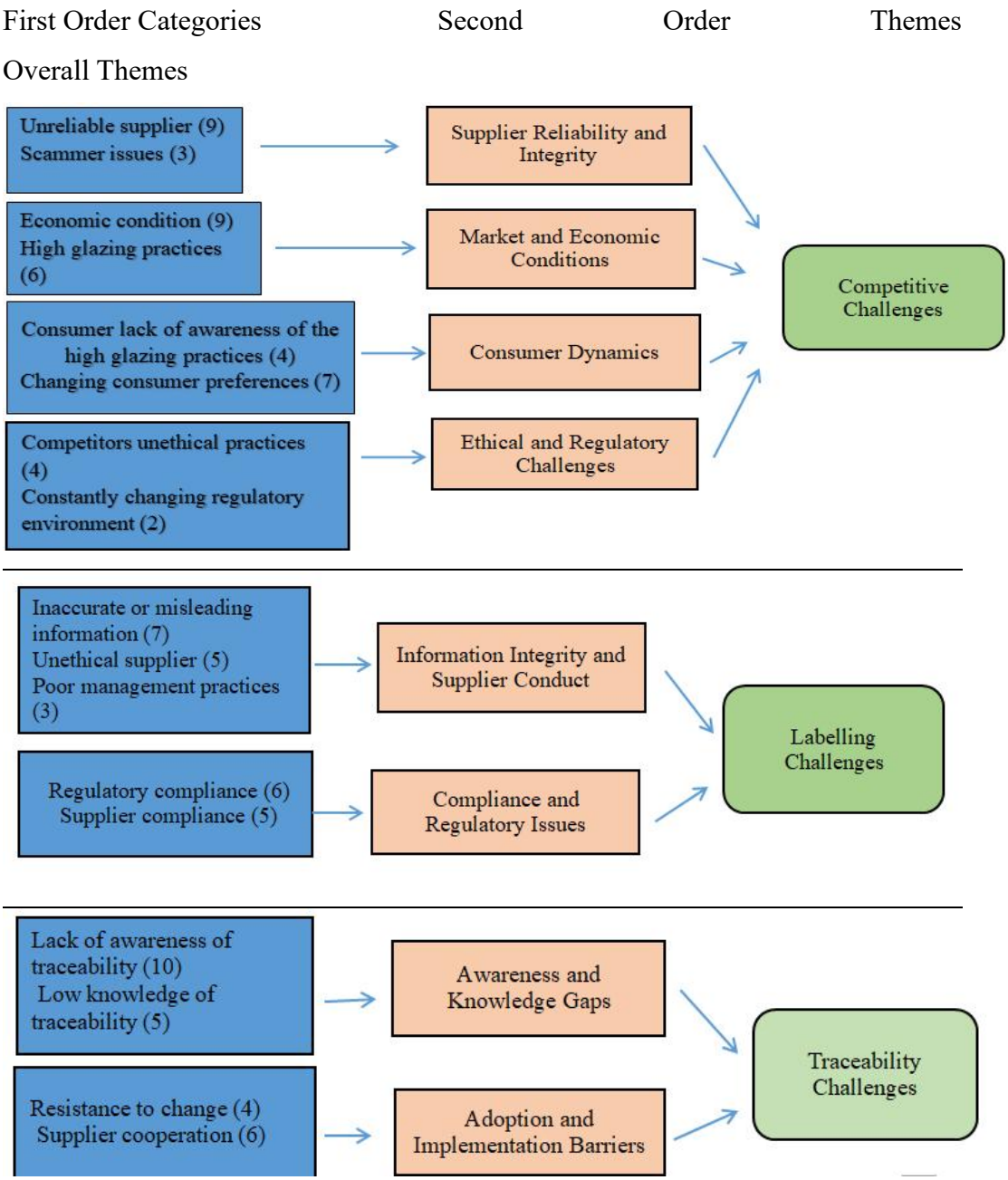
Source: Own Development

4.3 Themes

For this study, the findings are segmented into three thematic categories that are revealed based on interviews conducted on the discussed issues which focusing on the challenges faced by frozen seafood importers in Malaysia as shown in Figure

2. The main research questions address Competitive Challenges, Labelling Challenges, and Traceability Challenges. The following sections present detailed insights into each of these themes which derived from interviews with participants P1 to P5.

Figure 6. Data Structure



Source: Own Development

4.3.1 Theme 1. Competitive Challenges

The first theme is competitive challenges. Here, we found that the seafood industry faces significant competitive challenges such as consumer lack of glazing awareness, untrustworthy exporters/suppliers, price wars within the industry, and economic instability, all of which result in challenges for frozen seafood importers in Malaysia. Competitive challenges can be categorized into four main themes: Supplier Reliability and Integrity, Market and Economic Conditions, Consumer Dynamics, and Ethical and Regulatory Challenges.

Across the interviews, many participants reported issues with unreliable suppliers and scammers, which caused losses not only in monetary terms but also in reputation and operational efficiency. For instance, one participant (IP 3) recounted a specific incident*: We still encounter issues such as missing cartons and fraudulent products from exporters. In 2020, I imported a 20ft container of frozen squid (size 40/60) from Pakistan. Due to certain reasons, I was unable to visit the exporter's factory for inspection. When the container arrived, I discovered that the shipment was different from what I ordered—the exporter sent me size 60/80 instead of what was stated in the sales contract. They were unresponsive and unreachable after a few days. I was forced to sell the squid at a very low price to my customers*. This incident demonstrates the financial and operational setbacks that can arise from dealing with unreliable suppliers (scammer). Another participant (IP 1) highlighted the pervasive risk of being scammed*: There is a risk that importers might become targets of scammers. Scammers can provide detailed, seemingly legitimate documentation, including export and trading licenses. Given the high cost of a single 40-foot container of seafood, importers can suffer significant financial losses if scammed*. A similar experience was shared by another interviewee (IP 5): *In another instance, an exporter from Pakistan disappeared after receiving our deposit. When I contacted other suppliers in Pakistan to locate this company, we discovered it was registered under a different name and situated in a residential area*. This emphasizes how scammers can provide convincing information and making importers less cautious.

The prevalence of scamming activities has resulted in substantial financial losses and operational disruptions, with some importers never receiving their shipments.

The irresponsible conduct of suppliers can have profoundly negative effects on importers. Many participants in the interviews highlighted various unethical practices that lead to significant financial losses, reputational damage, and operational inefficiencies.

IP 1 discussed instances of unethical exporters injecting chemicals into shrimp products to make them appear firm and bulky, aiming to boost sales: *This practice not only endangers consumer health but also damages the reputation of importers who purchase from these suppliers*. IP 2 shared an experience where the shipment received was different from what was ordered: *When the shipment arrived, we found that the goods were different from what we ordered. As a result, we suffered financial losses and damaged our reputation because we were unable to deliver the products to our customers on time.* IP 3 further highlighted the unethical behaviour of some suppliers: *Some suppliers might accept as many orders as they can but fail to deliver goods on time, sometimes even threatening importers to pay more or risk not receiving their shipments. Suppliers may employ tricks, such as reducing the weight of each carton by 0.1kg or mixing smaller fish into cartons to increase their margins.* Similarly, IP 4 encountered such issues: […..]E*very time I visited the factory, the products were good in both quality and weight. However, when the shipment arrived in Malaysia, the quality and weight were different from what we had seen at the factory in Vietnam, causing us to lose money and customers.* IP 5 summarized the overarching issue: *Exporters might do everything to secure their sales and make more profit*. Scammers and unreliable suppliers hinder the competitiveness of importers. Unethical conduct by suppliers and scammers is a significant issue for importers trying to stay competitive in the market, as it is inevitable and unpredictable. These narratives underscore the critical need for stringent vetting and monitoring processes to ensure the reliability and integrity of suppliers, thereby mitigating the risks of financial loss and damage to business reputation.

Furthermore, the competitive landscape is further complicated by fluctuating market conditions economic pressures. These factors impact pricing, availability of products, and overall market stability, making it challenging for businesses to maintain a competitive edge. One of the key challenges encountered is instability of currency exchange rate. As highlighted by IP 1, *Fluctuations in currency exchange rates, particularly with the widespread use of USD, pose significant challenges. Once we sign a contract with an exporter, we cannot request a price reduction if the USD appreciates, which can shorten our margins and sometimes force us to sell stock without profit, thus losing our competitive advantage.* IP 2 and IP 3 added: *Currency exchange rates are also crucial for importers, as purchasing and shipping costs are calculated in USD. Therefore, even a slight drop in the USD can affect our profitability, USD appreciates by 0.05 against the RM within a short period (1-2 weeks), it significantly impacts us. We need to spend more RM to cover the appreciation of the USD and additional costs like shipping, EDI, and more.* IP 5 agreed that *the unstable currency exchange rate of USD to RM is a major challenge for importers, making it difficult to adjust selling prices. A careless step in this process can lead to financial losses and operational disruptions.* When discussing economic conditions, the subtheme of economic instability emerged, for example, IP 1 described their sales might dropped due to low purchasing power of consumers […..]*Inflation can have a substantial impact on the market. As consumers' purchasing power decreases, they may opt for other types of food since seafood is a substitutable product.* While, IP 3 indicated that inflation might affect their competitiveness in various ways, *inflation can lead to reduced consumer spending, and a weak Ringgit Malaysia increases the cost of imported frozen seafood, forcing us to raise prices.* Moreover, changes in market practices present additional challenges, many participants indicated issue like high glazing practices for example IP 1 said *many players offer low prices by using thick glazing* and IP 4 added *the frozen seafood market in Malaysia is a mess as many importers provide high glazing.* In order to stay competitive and gain market share, most of the importers offer very high glazing products to the market and don't really care about the net weight of the product, IP summarized: *I have observed an unhealthy trend in the frozen seafood importing business in Malaysia. Many importers have started to apply high glazing to seafood products. High*

glazing means there is less actual net weight, making the product appear cheaper. This practice leads to unhealthy competition in the market and undermines the quality and value of the products. I foresee that the glazing of seafood products will become increasingly thicker.

In addition to market and economic condition, consumer dynamics pose critical challenges for importers. The data revealed that consumers' lack of awareness about high glazing practices has led importers to shift towards selling high-glazed products to remain competitive. This shift significantly impacts the value perception of the products offered. Across the interviews, IP 2 shared his experience by mentioned that: *I sold frozen seafood to a customer with 100% net weight, 10kg, at a cost of RM 10/kg. After defrosting, they received the full 10kg of fish. Meanwhile, my competitors were selling with 70% net weight and 30% glaze, also 10kg, at RM 9/kg. After defrosting, their customers only received 7kg of fish. Despite this, my customer told me my price was very high. This case made us realize that customers often rely solely on price rather than the value of the product.* This case illustrates that customers often rely solely on price rather than the actual value of the product, indicating a lack of awareness about high glazing practices, and IP 3 added: *Consumers in Malaysia, I believe, lack knowledge about product glazing and focus solely on pricing.* This lack of consumer awareness has become a significant challenge for importers who strive to maintain quality while competing on price, IP 2 emphasized the importance of educating consumers:*I believe it is necessary to educate consumers to look beyond price and understand the true value of the products.*

Apart from the lack of awareness about glazing practices, changing consumer preferences have become another issue importers need to address to stay competitive. IP 2 indicated that *family size impacts purchasing decisions, and there is a trend towards ready-cooked food rather than buying seafood from markets*. IP 5 added: *In recent years, consumers in Malaysia have shown a preference for smaller packaging with IQF (Individually Quick Frozen), unlike previous years when they preferred products in blocks*.

Finally, several participants highlighted the unethical conduct by competitors aiming to gain market share. IP 1 pointed out that *some major players offer very low prices, sometimes even at break-even points, which can financially strain smaller businesses. Additionally, quality issues arise as some unethical suppliers provide expired or long-stored products to consumers to capture market share.* IP 3 shared similar observations: *I have noticed that some sellers in Malaysia give customers less product weight, such as selling a 10kg product that actually weighs 9.8kg, to lower their selling price and increase sales. Additionally, some sellers provide misleading information, such as labelling salmon from China as being from Norway, deceiving consumers and offering lower prices*. These practices not only mislead consumers but also create unfair competition for businesses that adhere to ethical standards. Furthermore, constantly changing regulations pose another significant challenge for importers. IP 3 explained the inconvenience caused by authorities with frequently changing regulatory requirements: *Each country has its own regulations, which can change without informing overseas buyers. For example, in Malaysia, importers previously did not need to label cartons for raw materials like frozen whole round seafood; they only needed to submit a health certificate and a certificate of origin. However, the authorities suddenly required importers to label cartons with product details and exporter/importer information, causing our shipments to be detained at the port and incurring high charges*.

4.3.2 Theme 2. Labelling Challenges

The integrity and accuracy of product labelling are critical for compliance and consumer trust. The challenges identified in this area fall into two main themes: Information Integrity and Supplier Conduct, and Compliance and Regulatory Issues. Across the interviews, it was highlighted that mislabelling can lead to consumer distrust and regulatory penalties, usually occurring due to unethical suppliers and poor management systems. For example, IP 1 noted, *Mislabelling can occur due to various factors such as human error or discrepancies in documentation. Workers might enter the wrong weight or size, or suppliers might apply extra chemicals without mentioning it on the label*. This highlights the

importance of accurate documentation and diligent oversight to prevent such errors. IP 2 agreed, emphasizing the difficulties in dealing with exporters: *Exporters not following my instructions for labeling led to the shipment being detained by customs at the port for over a month, incurring high detention and demurrage costs*. IP 5 added: *mislabelling of seafood products during the importation process include the erosion of consumer trust, as mislabelling can lead to a loss of confidence in the brand and market, resulting in decreased sales and loyalty*. This example illustrates the significant financial and operational impacts that can arise from mislabelling issues and the importance of ensuring that suppliers adhere to labelling requirements. Moreover, unethical behaviour by suppliers poses additional challenges for importers. IP 5 stated, *Exporters might intentionally provide inaccurate information to secure sales and gain more profit, such as labelling a product as premium quality when it is actually a standard B-grade product*. This deceptive practice undermines trust and can have severe repercussions for importers.

IP 3 encountered a similar issue: *I received a shipment where the labels indicated a different product size than what was actually delivered. This not only affected my inventory but also disrupted my supply chain and customer commitments*. Such instances highlight the need for stringent verification processes to ensure the accuracy and reliability of product information provided by suppliers.

A part from that, Mislabelling can result in legal and regulatory compliance issues, posing a key challenge for importers. IP indicated that […..]*with incorrect labelling potentially violating local and international food safety regulations, leading to legal consequences, fines, and potential import bans.* IP 2 added: *mislabelling can lead to regulatory non-compliance. Food safety authorities have strict labelling requirements, and failure to meet these standards can result in fines, product recalls, and legal action. Non-compliance can also lead to increased scrutiny from regulatory bodies, making it more difficult for the company to operate smoothly in the future.* In addition, IP 4 mentioned that this issue arises due to suppliers' reluctance to cooperate; *some suppliers might still not follow our requests, believing that adding labels would increase their costs and thus are reluctant to cooperate. Additionally, some suppliers might provide*

incorrect information because they are too lazy to conduct the necessary tests or use previous reports for the current stock. IP 2 agreed that, *exporters, who do not regularly check the process and labelling, also contributes to this issue. some suppliers might reluctant to cooperate, FYI, one of my supplier from Vietnam they are reluctant to do labelling as they said it is unnecessary and costly, after we explained they still not willing to cooperate therefore we force to stop our cooperation.* IP 3 confirmed by indicated that *one notable experience involved exporters not following my instructions for labelling. As a result, the shipment was detained by customs at the port for over a month, incurring high detention and demurrage costs.* These narratives underscore the critical need for stringent vetting and monitoring processes to ensure the reliability and integrity of suppliers.

4.3.3 Theme 3. Traceability Challenges

The last theme is traceability challenges, which are crucial for ensuring the safety and quality of seafood products. The challenges in this area are divided into two main themes: Awareness and Knowledge Gaps, and Adoption and Implementation Barriers. Across the interviews, we found that exporters and local fishermen often lack awareness and have low knowledge of traceability practices. For example, IP 2 highlighted that *most suppliers in countries like Pakistan, India, Yemen, and Indonesia don't prioritize traceability. They have abundant seafood resources, many buyers, and, most importantly, they often don't understand the importance of traceability.* Similarly, IP 3 added that, *we sometimes face difficulties with exporters who are less likely to cooperate. They often collect raw materials from fishermen who lack awareness or knowledge about traceability. Since these exporters have many buyers, they do not prioritize investing in technology or putting effort into traceability.* P2, who has operated in the frozen seafood industry for over 30 years, also stressed that many fishermen in resource-rich areas do not care about traceability at all; *some local fishermen emphasize sales over traceability and do not focus much on it.* Instead of just a lack of awareness, we found that some stakeholders have no knowledge or only limited knowledge of traceability. IP 1 indicated that *we' ve encountered an issue as we are importing frozen seafood from less develop areas like village in India, Pakistan or Vietnam,*

the local fishermen won't not emphasize on traceability even we provide an idea or solution, they won't pay too much attention on it. They found that it is troublesome and increase their workload; they emphasize on trust all I can say. While IP 5 also mentioned that, *fishermen are less likely to cooperate as they are less educated and do not fully understand the importance of traceability. Additionally, consumers in Malaysia do not typically ask for the origin of frozen seafood products.* IP 5 further explained and point out the challenges by indicated that, *a factory typically collects raw materials like shrimp from local fishermen. Each fisherman can only provide around 100kg of shrimp, and the factory usually deals with 100-500 fishermen daily, making it difficult to provide accurate information. Additionally, the fishermen often do not bother to provide detailed information.*

Moreover, resistance to change and lack of supplier cooperation hinder the adoption of traceability practices. There are importers who are reluctant to add or update their traceability systems due to financial burdens. IP 4 mentioned that, *we do not use specialized systems or technology; we primarily rely on container labels for tracking products. Investing in technology would be costly and might not bring significant benefits to our company.* Additionally, some importers are unwilling to accept new technology and are not eager to learn. IP 5 said, *no we don't use any software to trace, it is too complicated.* IP 4 added: *we stick to our traditional system; we don't use any software or technology to track products, relying instead on manual tracking methods.* Furthermore, importers who wish to implement robust traceability systems often face a lack of cooperation from suppliers. IP 1 noted, *some exporters are unwilling to provide detailed information about the origin of products because they fear others might poach their local suppliers.* IP 1 further added: *we utilize traceability software and systems that enable us to track and monitor our products throughout the supply chain, ensuring transparency and accountability. However, this is only effective once the goods arrive in Malaysia, as exporters often consider such measures unnecessary and are unwilling to cooperate beforehand.* While IP 2 faced a similar issue, *we don't have a complete system to track the initial origin of seafood at the exporter's place as this requires the cooperation of exporter.* IP 3 highlighted that *the*

complexity of the supply chain, with multiple intermediaries like fishermen, processors, distributors, and retailers, can complicate tracking efforts and increases the risk of errors and delays. Ensuring all paperwork is accurate and up-to-date is challenging, especially when dealing with various stakeholders who may have different standards and practices. IP 5 summarized the situation; *I believe most importers in Malaysia face similar issues, particularly the lack of cooperation from exporters. Countries like Pakistan, India, Vietnam, Indonesia, and Thailand have abundant seafood resources and many buyers from Europe and Asia. Consequently, they are less inclined to make extra efforts to accommodate us, often viewing traceability as unnecessary additional work.* Overcoming these barriers requires concerted efforts to demonstrate the benefits of traceability and to incentivize cooperation from all stakeholders. These challenges underscore the need for greater awareness, cooperation, and investment in traceability practices to ensure the safety, quality, and competitiveness of seafood products in the global market.

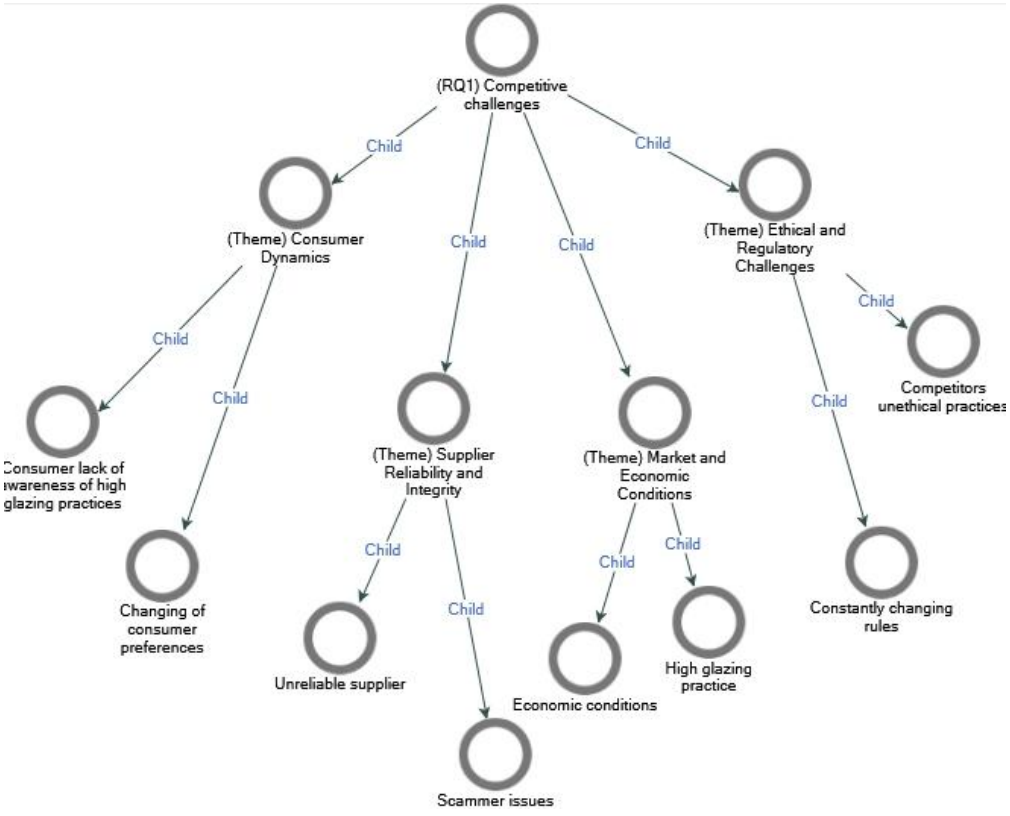
4.4 Discussion

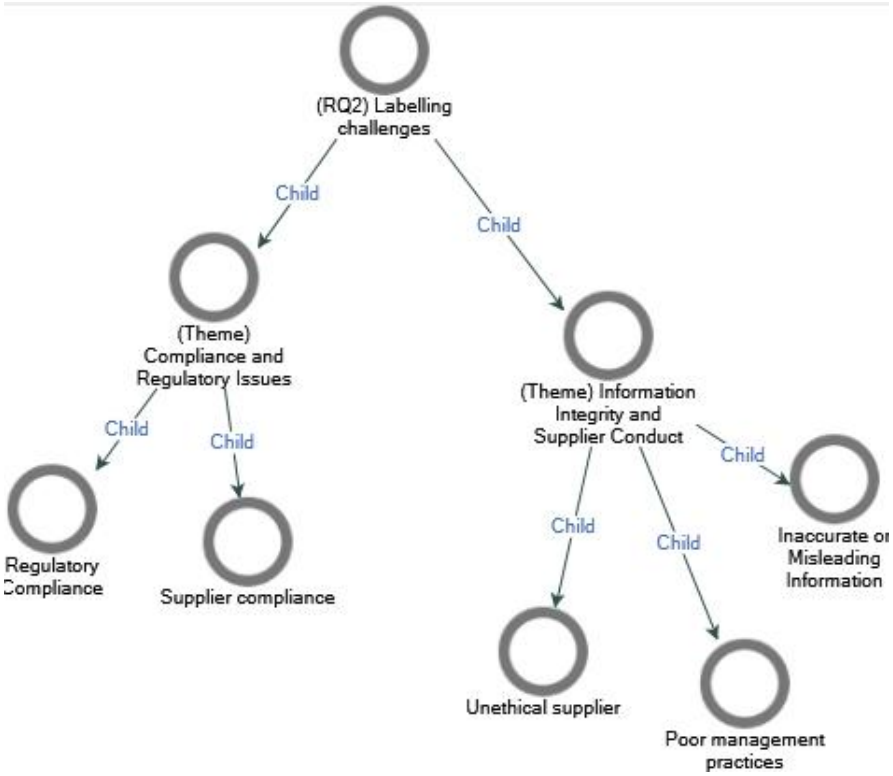
In this study, we explored the competitive, labelling, and traceability challenges faced by frozen seafood importers in Malaysia. Our findings revealed several critical issues: unreliable suppliers and scammers, fluctuating market conditions, consumer lack of awareness regarding glazing practices, changing consumer preferences, unethical competitor behaviour, and resistance to adopting traceability practices. This discussion will interpret these findings in relation to our research questions, connect them to existing literature and theoretical frameworks, compare them with previous research, and discuss their implications for theory and practice.

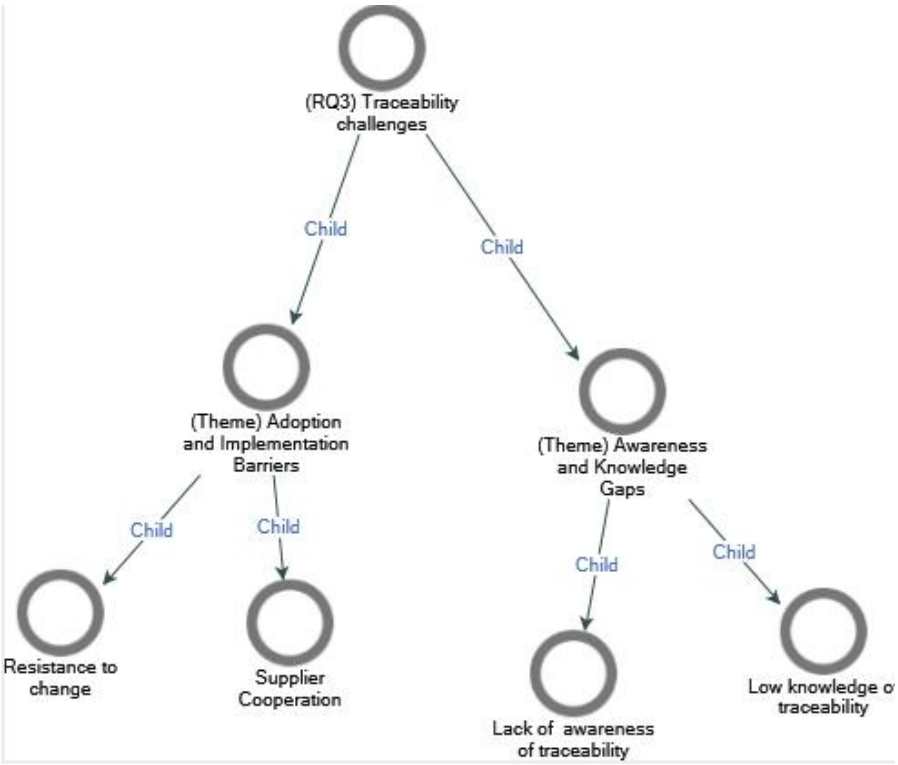
4.5 Interpretation of Findings

4.5.1 Mapping of Variables through Nodes

Figure 7 : Development of sub-nodes







Source: Own Development

The thematic maps for the three research questions (RQ1, RQ2, and RQ3) pertaining to competitive challenges, labeling challenges, and traceability challenges in the frozen seafood import industry illustrate a detailed breakdown of themes and sub-themes(Figure 7).

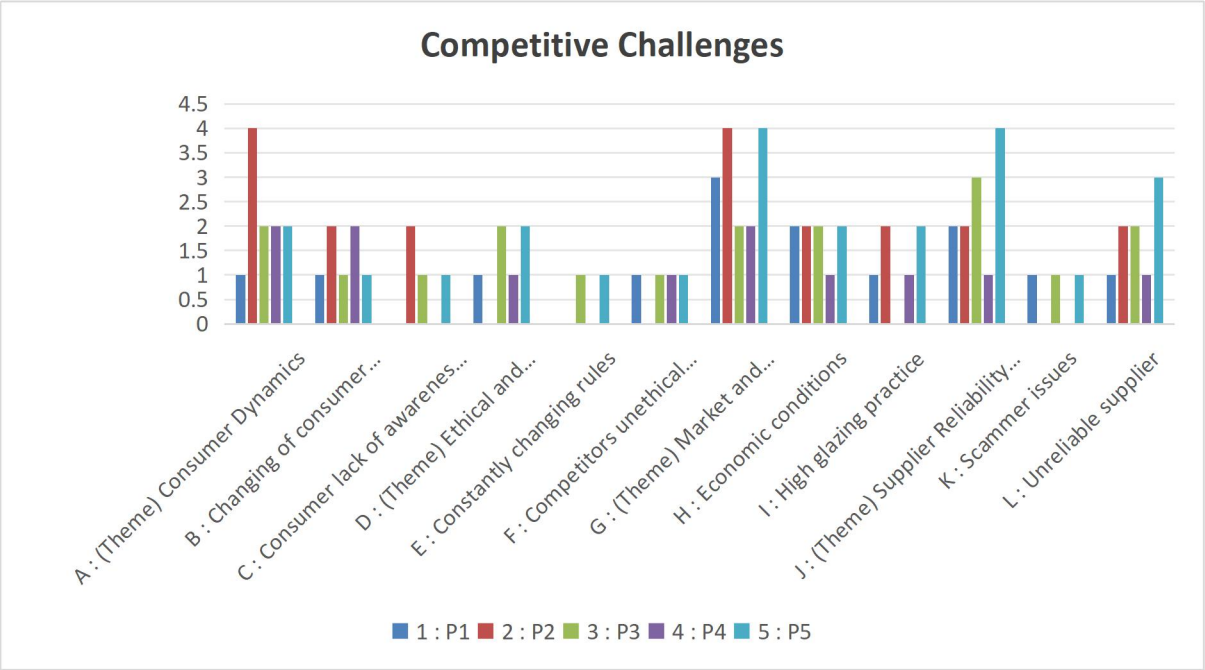
For RQ1 (Competitive Challenges), four primary themes were identified. The theme of Consumer Dynamics includes sub-themes such as consumers' lack of awareness of high glazing practices and changing consumer preferences, highlighting the challenges businesses face due to uninformed consumers and shifting market demands. The theme of Supplier Reliability and Integrity covers issues related to unreliable suppliers and scammer issues, emphasizing the importance of trustworthy supply chains. Market and Economic Conditions is another significant theme, addressing the broader economic environment's impact on business competitiveness and the economic implications of high glazing practices. Lastly, Ethical and Regulatory Challenges includes sub-themes such as competitors' unethical practices and constantly changing rules, showcasing the ethical and regulatory difficulties businesses encounter.

In the context of RQ2 (Labeling Challenges), two main themes emerged. Compliance and Regulatory Issues encompasses sub-themes like regulatory compliance and supplier compliance, underscoring the need for businesses and their suppliers to adhere to labeling regulations. The theme of Information Integrity and Supplier Conduct includes sub-themes such as inaccurate or misleading information, unethical suppliers, and poor management practices, highlighting the challenges posed by incorrect information on labels and unethical behaviors.

For RQ3 (Traceability Challenges), two primary themes were identified. Adoption and Implementation Barriers includes sub-themes such as resistance to change and supplier cooperation, focusing on the difficulties in adopting new traceability practices and the necessity for supplier collaboration. The theme of Awareness and Knowledge Gaps covers sub-themes like the lack of awareness of traceability and low knowledge of traceability, addressing the issues related to insufficient information and understanding among stakeholders. These thematic maps provide a comprehensive overview of the challenges identified in the frozen seafood import industry, segmented into detailed sub-themes, aiding in a deeper understanding of the complexities involved.

4.5.2 Competitive Challenges

Figure 8: Perceived Competitive Challenges in the Frozen Seafood Import Industry by Participant



Source: Own Development

Regarding consumer dynamics, all participants mentioned changing consumer preferences, with P2 indicating the highest concern, suggesting a significant focus on understanding and adapting to these changes(Figure 8). P2 also identified consumer lack of awareness regarding high glazing practices as a significant concern, while others mentioned it less frequently. Ethical and regulatory challenges were variably emphasized, with P3 and P5 expressing notable concerns about competitors' unethical practices, indicating these as considerable challenges. P5 highlighted issues with constantly changing rules, complicating regulatory compliance, while P1 and P4 mentioned these challenges less frequently. Market and economic conditions were significant concerns across all participants, particularly P1 and P2, who focused on economic conditions and the prevalence of high glazing practices, indicating the impact of broader economic factors on their business operations. P3 and P5 also noted these challenges, albeit with varying emphasis. Supplier reliability and integrity emerged as critical themes, with participants discussing issues related to scammers and unreliable suppliers. P5 expressed the highest concern in this area, indicating frequent issues with supplier reliability. P3 and P1 also noted these problems, highlighting ongoing challenges in ensuring dependable supplier relationships. P2 and P4 mentioned these issues to a lesser extent. In summary, participants expressed varying levels

of concern across different themes. Changing consumer preferences and lack of awareness about high glazing practices were significant within consumer dynamics. Ethical and regulatory challenges, particularly competitors' unethical practices and changing rules, were pressing for some participants. Market and economic conditions, especially economic factors and high glazing practices, were notable concerns for all. Finally, supplier reliability and integrity issues, such as scammers and unreliable suppliers, were critical challenges impacting the industry. This analysis highlights the main challenges faced by frozen seafood importers in Malaysia, emphasizing areas that require attention and potential strategies for improvement.

The findings related to competitive challenges align with the literature emphasizing the importance of supplier reliability. Supplier reliability issues, as highlighted by IP 1 and IP 3, lead to financial losses and operational inefficiencies. For example, IP 1 experienced significant operational setbacks due to fraudulent suppliers, resulting in monetary losses and a tarnished reputation. Similarly, IP 3 encountered issues with incorrect shipments, which disrupted their supply chain and customer commitments. These issues highlight the need for robust supplier vetting and monitoring processes (Smith & Jones, 2018).

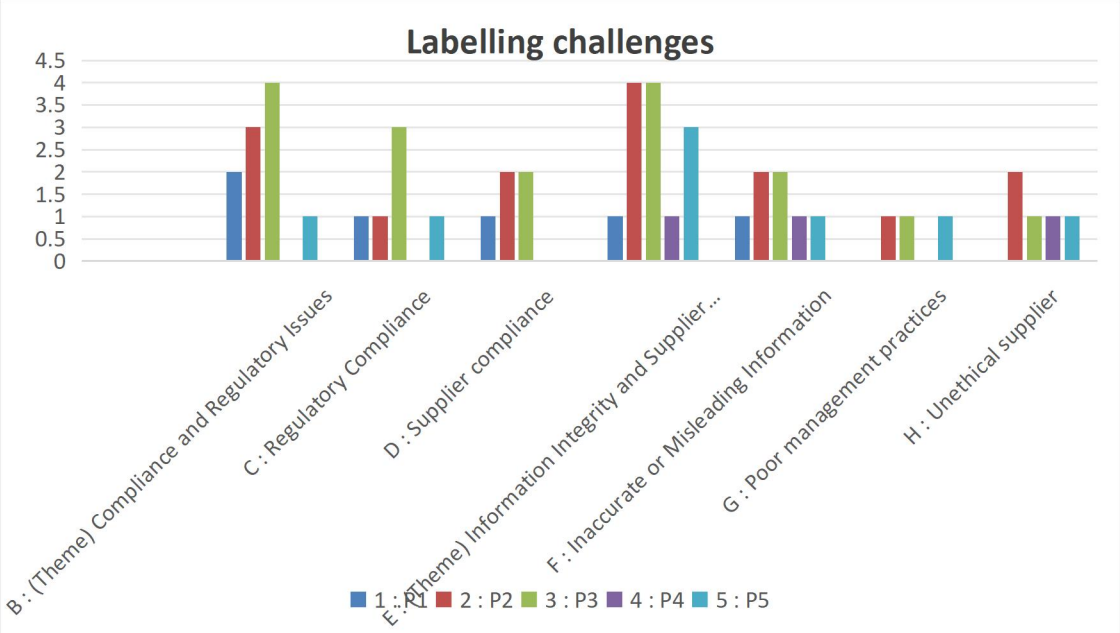
Moreover, fluctuating market conditions and currency exchange rate instability further complicate the competitive landscape. IP 1 and IP 3 discussed the adverse effects of currency fluctuations, particularly the appreciation of the USD against the RM, which eroded profit margins and sometimes led to selling at a loss. This finding is consistent with studies that emphasize the vulnerability of international trade to currency volatility, which can significantly impact pricing strategies and financial stability (Chen et al., 2020). Additionally, the competitive price wars within the industry, where some players offer prices at break-even points, create financial strain for smaller businesses, as noted by IP 1.

Our findings regarding supplier reliability align with Smith and Jones (2018), who also identified financial and operational impacts due to unreliable suppliers. However, our research highlights currency fluctuations as a more significant issue compared to Smith and Jones (2018), who primarily focused on supplier

behaviour. The emphasis on competitive price wars is unique to our study and less covered in existing literature, suggesting a regional specificity in competitive dynamics.

4.5.3 Labelling Challenges

Figure 9: Perceived Labelling Challenges in the Frozen Seafood Import Industry by Participant



Source: Own Development

Regarding compliance and regulatory issues, the analysis shows that regulatory compliance and supplier compliance are significant concerns for some participants(Figure 9). P3 had the highest number of mentions related to both regulatory compliance and supplier compliance, indicating a strong focus on these issues. P2 also showed concern for supplier compliance, but less so for regulatory compliance. In contrast, P4 did not mention compliance issues at all, suggesting it is not a primary concern for them. P1 and P5 had minimal mentions of compliance issues, indicating moderate concern.Information integrity and supplier conduct were also prominent themes. P2 and P3 expressed the highest levels of concern regarding inaccurate or misleading information, poor management practices, and unethical suppliers. P2 frequently mentioned issues with inaccurate information

and unethical suppliers, highlighting significant concern in this area. Similarly, P3 had high mentions of inaccurate information and poor management practices, showing a strong focus on supplier conduct. P4 mentioned issues with unethical suppliers but had fewer mentions overall, indicating moderate concern. P5 was concerned about inaccurate information and poor management practices, with some focus on unethical suppliers. P1 made fewer references to inaccurate information and did not mention unethical suppliers, suggesting lesser concern in this area.In summary, the analysis of RQ2 highlights varying levels of concern among participants regarding compliance and regulatory issues, as well as information integrity and supplier conduct. Participants such as P3 are highly focused on compliance, while P2 is more concerned with the integrity of information provided by suppliers. These insights provide a comprehensive view of the challenges faced by frozen seafood importers in Malaysia, emphasizing areas that require attention to ensure regulatory compliance and ethical supplier conduct.

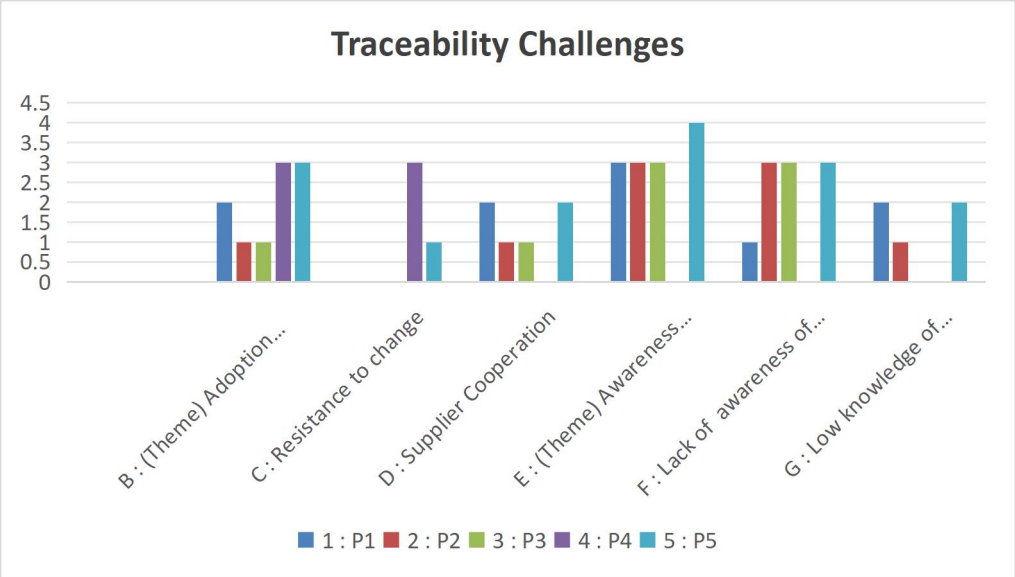
The issue of mislabelling aligns with previous research on the importance of accurate documentation and ethical supplier behaviour. Mislabelling can occur due to various factors, including human error, discrepancies in documentation, and intentional deception by suppliers. For instance, IP 1 mentioned instances where workers entered incorrect weights or sizes on labels, or suppliers applied extra chemicals without proper disclosure. Such practices not only mislead consumers but also expose importers to regulatory penalties and reputational damage (Williams, 2019).

IP 2 also highlighted the challenges of dealing with exporters who do not follow labelling instructions, leading to shipments being detained by customs and incurring high detention and demurrage costs. This underscores the need for stringent labelling practices and regulatory compliance to avoid financial losses and ensure product integrity. The necessity for accurate and transparent labelling is critical in maintaining consumer trust and adhering to regulatory standards (Rodriguez, 2021).

Williams (2019) supports our findings on the impact of mislabelling on consumer trust and regulatory compliance. However, while Williams (2019) focuses broadly on ethical behaviour, our study provides specific instances of mislabelling practices, offering detailed insights into how these issues manifest in the seafood industry. Rodriguez (2021) also aligns with our findings on the regulatory implications, but our research further details the operational disruptions caused by non-compliance.

4.5.4 Traceability Challenges

Figure 10: Perceived Traceability Challenges in the Frozen Seafood Import Industry by Participant



Source: Own Development

Regarding adoption and implementation barriers, the analysis reveals significant concerns among some participants(Figure 10). P4 frequently mentioned resistance to change, indicating it as a major barrier. In contrast, P1 and P5 highlighted issues with supplier cooperation, pointing to challenges in working with suppliers to implement new practices. P2 and P3 had minimal mentions of these barriers, suggesting lesser concern in this area. Awareness and knowledge gaps emerged as prominent themes. P1, P2, and P5 expressed significant concern about both lack

of awareness and low knowledge of traceability, highlighting a need for increased education and awareness efforts. P3 focused on awareness gaps but did not emphasize low knowledge of traceability, while P4 did not express concern about these issues.In summary, the analysis of RQ3 highlights varying levels of concern among participants regarding adoption and implementation barriers, as well as awareness and knowledge gaps. P4 is highly focused on resistance to change, whereas P1 and P5 emphasize the importance of supplier cooperation. Awareness and knowledge gaps are significant for P1, P2, and P5, indicating a need for increased education and awareness efforts regarding traceability practices. These insights provide a comprehensive view of the challenges faced by frozen seafood importers in Malaysia, emphasizing areas that require attention to facilitate better adoption and implementation of traceability practices.

The challenges in traceability reflect broader issues identified in supply chain management literature. The lack of awareness and knowledge about traceability among exporters and local fishermen poses a significant barrier to implementing effective traceability systems. IP 4 and IP 5 discussed how this lack of awareness leads to resistance to adopting new technologies and practices essential for traceability. This finding highlights the need for educational programs to bridge the knowledge gap and promote the benefits of traceability within the supply chain (Zhang et al., 2017).

Furthermore, resistance to change and the financial burden associated with implementing traceability systems hinder their adoption. IP 4 mentioned that their company primarily relies on manual tracking methods due to the high costs of investing in specialized systems or technology. This resistance is compounded by a general reluctance to accept and learn new technologies, as noted by IP 5, who found traceability software too complicated to implement.

Additionally, the lack of cooperation from suppliers further exacerbates traceability challenges. IP 1 noted that some exporters are unwilling to provide detailed information about the origin of products due to fears of losing their local suppliers to competitors. This lack of transparency makes it difficult to track the

initial origin of seafood products accurately. IP 3 emphasized that the complexity of the supply chain, involving multiple intermediaries like fishermen, processors, distributors, and retailers, increases the risk of errors and delays in traceability efforts. Ensuring that all paperwork is accurate and up-to-date is particularly challenging when dealing with various stakeholders who may have different standards and practices (Zhang et al., 2017).

Our findings on traceability challenges are consistent with Zhang et al. (2017), who identified similar issues in supply chain management. However, while Zhang et al. (2017) focus on the broader supply chain, our research specifically addresses the seafood industry, highlighting unique challenges such as the reluctance of suppliers to provide detailed product information. Additionally, our study offers a more nuanced understanding of the financial and technological barriers to adopting traceability systems.

4.6 Contributions to Existing Theories or Development of New Theoretical Insights

The findings of this study contribute to existing theories in several ways and suggest new theoretical insights. The integration of competitive, labelling, and traceability challenges highlights the interconnectedness of these issues within the seafood industry. This supports and extends Porter's (1980) competitive strategy framework by demonstrating that achieving competitive advantage requires a holistic approach that includes reliable supplier management, ethical practices, and robust traceability systems.

The emphasis on currency exchange rate volatility as a significant competitive challenge suggests that international trade theories need to incorporate more dynamic and practical financial strategies to mitigate such risks (Chen et al., 2020). The identification of price wars within the industry points to the need for a revised understanding of competitive behaviour in regional markets, highlighting the importance of pricing strategies and market stability.

In terms of labelling, the detailed examples of mislabelling practices contribute to the literature on supply chain ethics and regulatory compliance (Williams, 2019; Rodriguez, 2021). These findings suggest that more stringent regulatory frameworks and ethical guidelines are necessary to ensure accurate labelling and protect consumer trust.

The study's insights on traceability challenges expand the current understanding of supply chain management by emphasizing the importance of stakeholder education and cooperation. The reluctance to adopt new technologies and the financial burden associated with traceability systems suggest the need for policies and incentives that encourage technological adoption and investment in traceability (Zhang et al., 2017).

4.7 Implications for Practice

The findings of this study have several practical implications for professionals, policymakers, and practitioners in the seafood industry. Addressing the identified challenges effectively can enhance the competitiveness, regulatory compliance, and operational efficiency of seafood importers.

For professionals, the study emphasizes the importance of implementing stringent vetting processes for suppliers to ensure reliability and integrity. Regular audits and continuous monitoring can help mitigate the risks associated with unreliable suppliers and prevent financial and operational disruptions (Smith & Jones, 2018). Utilizing technology for supplier management, such as block chain for transparency and traceability, can further enhance supplier reliability (Kamilaris et al., 2019). Additionally, accurate labelling is critical for maintaining consumer trust and regulatory compliance. Professionals should invest in training programs for their workforce to minimize human error in documentation and labelling. Implementing automated labelling systems can reduce the risk of errors and ensure consistency in product information (Williams, 2019).

Investing in modern traceability technologies, such as RFID and IoT-enabled devices, can provide real-time tracking of products throughout the supply chain, ensuring product safety and quality (Zhang et al., 2017). Educating stakeholders about the importance of traceability and providing incentives for adopting these technologies can help overcome resistance to change. The study underscores the need for educational programs to bridge the knowledge gap and promote the benefits of traceability within the supply chain (Aung & Chang, 2014).

For policymakers, developing more stringent regulations that mandate accurate labelling and traceability practices is crucial. These regulations should be designed to protect consumers and ensure fair competition within the industry (Rodriguez, 2021). Creating standardized guidelines for labelling and traceability can help harmonize practices across the industry, making it easier for importers to comply with regulatory requirements (Thakur & Donnelly, 2010). Policymakers can provide financial incentives, such as grants or tax breaks, to encourage the adoption of advanced traceability and labelling technologies. This support can reduce the financial burden on importers and promote industry-wide improvements (Beulens et al., 2005). Facilitating access to training programs and resources can help importers and their suppliers understand and implement best practices in traceability and labelling.

Promoting international cooperation and information sharing can help harmonize regulations across different countries, reducing the complexity and burden of compliance for importers dealing with multiple regulatory environments (Chen et al., 2020). Establishing international standards for seafood traceability and labelling can enhance global trade and ensure product quality and safety (Karlsen et al., 2012).

For practitioners, developing and implementing consumer education campaigns to raise awareness about glazing practices and the true value of seafood products is essential. Educating consumers can help them make informed purchasing decisions and increase demand for higher-quality products (Ponte, 2008).

Transparency in product information, such as providing detailed labels and traceability data, can build consumer trust and differentiate products in the market (Trienekens et al., 2012). Monitoring and adapting to changing consumer preferences, such as the trend towards ready-cooked food and smaller packaging, is also crucial for maintaining competitiveness and market share. Offering products that meet these preferences can enhance competitiveness and market share (Grunert et al., 2014).

Building strong relationships with suppliers and fostering collaboration is essential for improving traceability and product quality. Practitioners should work closely with suppliers to ensure compliance with labelling and traceability requirements. Encouraging suppliers to adopt ethical practices and providing support for their implementation can enhance the overall integrity of the supply chain (Hatanaka et al., 2005). Ensuring that all paperwork is accurate and up-to-date is particularly challenging when dealing with various stakeholders who may have different standards and practices (Zhang et al., 2017).

The practical implications of this study highlight the need for a multifaceted approach to address the competitive, labelling, and traceability challenges in the seafood industry. By implementing these recommendations, professionals, policymakers, and practitioners can enhance the competitiveness, regulatory compliance, and operational efficiency of seafood importers, ultimately ensuring the safety and quality of seafood products for consumers.

Chapter 5

Conclusion and Recommendations

5.0 Conclusion

In this study, we explored the various challenges faced by frozen seafood importers in Malaysia. Our qualitative analysis, based on interviews with industry professionals, revealed several critical issues categorized into competitive challenges, labelling challenges and traceability challenges. These insights provide a comprehensive understanding of the complexities and obstacles within this sector.

The competitive challenges faced by the frozen seafood import industry in Malaysia were multifaceted. Companies are pressured to maintain competitive pricing while ensuring quality and compliance, which often leads to a conflict between cost-saving measures and regulatory adherence. Additionally, fluctuations in global seafood prices and changes in international trade policies can have a significant impact on the competitiveness of Malaysian importers. Another significant factor is the instability of currency exchange rates, which can drastically affect the cost of imports. The volatility of currency exchange rates adds an element of financial risk, making it challenging for importers to predict costs and set prices competitively. This unpredictability necessitates robust financial strategies and risk management practices to mitigate potential losses due to unfavourable exchange rate movements. To remain competitive, companies must invest in efficient supply chain management, adopt innovative technologies, and develop strategies to mitigate the risks associated with global market dynamics.

Labelling challenges emerged as a significant concern, with inaccurate or misleading labels identified as a major issue. This not only undermines consumer trust but also leads to regulatory complications, as products may not meet the required standards set by authorities. The presence of poor management practices within companies further exacerbates these issues, leading to non-compliance and operational inefficiencies. Effective management is crucial for ensuring that labelling is accurate and compliant with regulations, thereby safeguarding both the company's reputation and consumer safety. Additionally, both regulatory compliance and ensuring supplier adherence to standards present substantial hurdles. These challenges add layers of complexity to the import process, as companies must navigate a landscape of evolving regulations and varying standards across different markets. Dealing with unethical suppliers who do not adhere to labelling standards further complicates the situation, necessitating rigorous vetting and monitoring processes to ensure compliance and ethical practices throughout the supply chain.

Traceability challenges were also prominent in our findings, highlighting significant gaps in the current practices within the industry. There is a notable lack of awareness and knowledge about traceability practices among stakeholders, which impedes the effective tracking of seafood products. This gap in knowledge often results in insufficient implementation of traceability systems, leaving the supply chain vulnerable to inefficiencies and fraud. Resistance to adopting new traceability technologies and methods is a significant barrier, often rooted in traditional practices and cost concerns. Many companies are hesitant to invest in new technologies due to the perceived high costs and the disruption it may cause to existing processes. Ensuring supplier cooperation in implementing traceability systems is another critical challenge. Suppliers may be reluctant to change established practices or may lack the resources to implement new systems, which affects the overall efficacy of traceability efforts. Collaboration and support are essential to overcoming these barriers and achieving a seamless and transparent supply chain.

These findings underscore the need for improved management practices, stricter enforcement of regulations, and enhanced education and training programs for stakeholders in the frozen seafood import industry. By addressing these issues, the industry can move towards greater transparency, safety, and consumer trust. Effective management practices are vital for ensuring compliance with regulations and maintaining operational efficiency. Stricter enforcement of regulations will help to standardize practices across the industry, reducing the incidence of non-compliance and unethical behavior. Enhanced education and training programs can bridge the knowledge gap among stakeholders, fostering a culture of continuous improvement and innovation.

The implications of these findings extend beyond the immediate concerns of labelling and traceability. They highlight the broader need for systemic changes within the industry, encompassing regulatory frameworks, technological adoption, and stakeholder collaboration. By fostering a culture of compliance and innovation, the frozen seafood import industry in Malaysia can not only overcome current challenges but also position itself as a leader in global seafood markets. To achieve this, policy include enhancing regulatory frameworks through the development and enforcement of standardized guidelines for labelling and traceability, promoting technological adoption such as block chain for traceability and transparency and encouraging stakeholder collaboration by establishing industry forums and partnerships. These measures will ensure that the industry not only adheres to global standards but also drives forward sustainable practices and competitive advantages. Ultimately, these efforts will contribute to a more sustainable and resilient supply chain, benefiting all stakeholders involved, from producers to consumers.

5.1 Future Research Recommendations

Exploring competitive strategies within the frozen seafood import industry can provide insights into how companies can better position themselves in the global market by identifying successful strategies for cost management, quality

assurance, and market differentiation. Comparative studies between Malaysian importers and their international counterparts could reveal valuable lessons on maintaining competitiveness. Additionally, examining the effects of currency exchange rate volatility on import costs and pricing strategies would offer valuable insights into financial risk management. Future research should delve into the impact of regulatory frameworks by comparing Malaysia's regulations with those of other countries, using the European Union as a benchmark. Investigating the role of advanced technologies, such as block chain and IoT, in enhancing traceability could offer innovative solutions, focusing on feasibility, cost implications, and effectiveness. Further research should explore best practices in supplier management to ensure ethical behaviour and compliance with standards. Understanding consumer perceptions of labelling and traceability can help tailor educational campaigns and policies, identifying the most effective ways to communicate this information. Analysing the economic impact of labelling and traceability challenges will provide a comprehensive view of cost-benefit dynamics, assessing the financial burden on importers and the potential long-term benefits of improved practices. By addressing these areas, future research can contribute to a more robust and sustainable frozen seafood import industry in Malaysia, benefiting all stakeholders involved and paving the way for innovative solutions and best practices globally.

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