

Challenges and Obstacles of International Certification for Seafood Exporters in Indonesia

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Abstract

Certification is a mandatory requirement for seafood product exporters in Indonesia, so that the products sold can be accepted by consumers in their country, but exporting companies face problems if there is a quality rejection when food safety regulations are applied by the importing country. The certification, which was initially voluntary in nature, eventually becomes an export obligation and condition when the buyer from the importing country requests it. Problems arise when the buyer does not continue the request because the company in the exporting country does not have the required certification. Significant certification fees (including audit fees and other costs to meet the requirements requested by the certifier), become one of several certification obstacles for seafood product exporter companies in Indonesia. The research was conducted using a survey method and Forum Group Discussion (FGD) to 58 experienced respondents in the field of implementing Food Safety Management Systems who work in 8 exporting companies of seafood products certified by the British Retail Consortium (BRC) Global Food Standard version 8 in Indonesia. Each company is represented by a minimum of 2 people and a maximum of 7 respondents who serve as supervisors, managers, to company directors. The total number of respondents is limited, but the quality of opinions that are very specific, focused, and broad understanding as business actors make the results can be used as a reference. The development of certification goes hand in hand with demand, consumer expectations and the complexity of the company's internal and external aspects, one of which refers to the supply chain management process (Supply Chain Management). Physical suitability, quality, food safety, and the purchase price of fish raw materials are indicated as internal aspects that support business continuity in the fishery business. Meanwhile, government support is indicated as an external aspect. This research is aimed specifically at fisheries and marine business actors in Indonesia who want to expand their market to the world market. Company management commitment is required in the implementation of Food Safety & Quality Management Systems in various aspects of the company on an ongoing basis (Continuous Improvement). According to the author's knowledge,

Keywords: Good Manufacturing Practices, HACCP, ISO 22000, British Retail Consortium (BRC), Social Audit

I. Introduction

The majority of seafood products from Indonesia are exported to various countries in frozen and ready-to-cook forms, where the main products exported, especially to the USA, include Shrimp,

Tuna, Pasteurized Fish and Crab Meat Products. The development of the total imported products and the US market price from Indonesia as stated in the Urner Barry report February 2021 (<https://www.foreigntradedata.com/>),

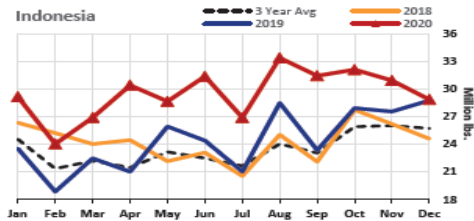


Fig. 1 USA's Total Shrimp Imports (Lbs)

(Source: UrnerBarry (2021). Market Prices, News and Analysis. <https://www.foreigntradedata.com/>)

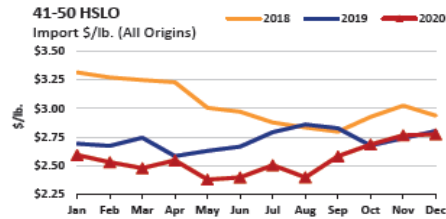


Fig. 2 Shrimp Price Sz 41-50 (\$/Lb)

The amount of USA imports of frozen shrimp seafood products from Indonesia is 354,375,000 lbs of the total frozen shrimp imports of 1,644,616,000 lbs in all exporting countries in 2020 with Indonesia's share contribution in the USA of 22%. Meanwhile, the price of shrimp in 2020 is still below the price in 2018 and 2019, with the lowest price being \$2.30/lb (size 41-50, HSLO) then increasing in December 2020 to \$2.75/lb (size 21-25, HSLO).

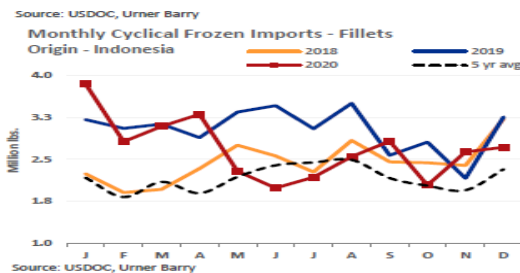


Fig. 3 USA's Total Frozen Tuna Fillet Imports (Lbs)

(Source: UrnerBarry (2021). Market Prices, News and Analysis. <https://www.foreigntradedata.com/>)

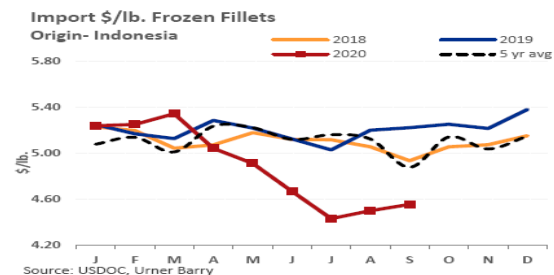


Fig. 4 Frozen Tuna Fillet Price in USA (\$/Lb)

USA imports of seafood products in the form of frozen tuna fillets from Indonesia worth 32,270,827 lbs during 2020, where this value contributed to a 44% share of the total imports of USA frozen tuna fillet seafood products from Indonesia (73,322,103 lbs). Total USA imports from all exporting countries in 2020 were below 2018 and 2019. This was followed by a decline in US market prices, where the frozen tuna market price fell drastically to \$4.40/lb in June 2020.



Fig. 5 USA's Total Crab Meat Imports (Lbs)

(Source: UrnerBarry (2021). Market Prices, News and Analysis. <https://www.foreigntradedata.com/>)

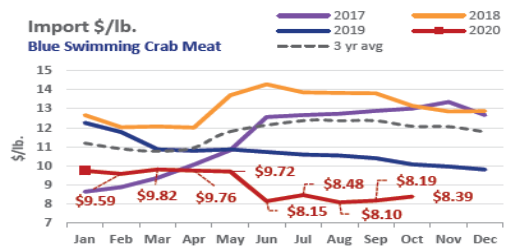


Fig. 6 Blue Swimming Crab Meat Price in USA (\$/Lb)

Meanwhile, USA's crab meat imports from Indonesia in 2020 amounted to 27,076,699 lbs, where this value accounts for a 52.21% share of the total US crab meat imports in all exporting countries (51,865,727 lbs). The decrease in total USA crab meat imports from all exporters during 2020 compared to 2018 and 2019 was followed by a decline in USA market prices, where the lowest market price in August 2020 was \$8.10/lb.

The US government implements regulations ranging from Good Manufacturing Practices (GMP), Hazard Analysis Critical Control Points (HACCP), to Standard Sanitation Operating Procedures (SSOP) which must be met by exporters of seafood products to the USA. *Food & Drug Administration (FDA)* as a new standard risk-based food safety enforcement authority and a provider of new tools to hold imported food to the same standard as domestic food products through increased inspections of exporters on various continents. If physical, chemical or microbiological hazards are found in imported products, they will be recorded on the FDA website as FDA Refusal or subject to "Detention". Meanwhile, if the product is positive for hazardous substances (Hazard), the product in the container will be rejected and returned to the exporting country.

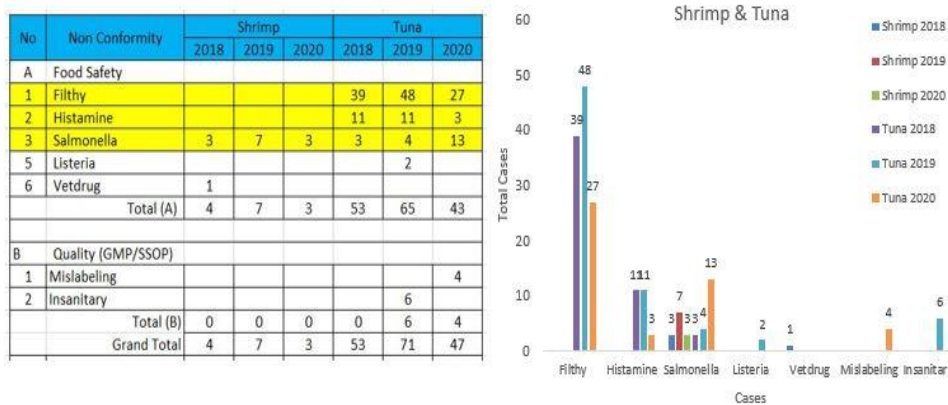


Fig. 7 FDA Refusal Data – Import from Indonesia

During 2019 to 2020, Indonesian frozen shrimp products were still found to contain Salmonella bacteria and Veterinary drug or antibiotic residue, while Indonesian frozen tuna contained Filthy, Histamine and Salmonella bacteria (FDA Refusal Data – Import from Indonesia, 2019-2020). In response to this, the Ministry of Maritime Affairs and Fisheries (KKP) appointed by the Government of Indonesia to manage, regulate and supervise seafood companies in Indonesia in addition to conducting re-audits (re-certification) for a certain period according to the Grade criteria obtained by the seafood exporter company. Free training and audits are also provided to all audited companies and certificates are available for those who pass, including the Good Manufacturing Practices (GMP) Certificate and Hazard Analysis Critical Control Point (HACCP). Food Safety Management Systems certificates including ISO 22000, BRC Global Food Standard, and Social Audit are requirements that are requested by foreign buyers from companies exporting seafood products in Indonesia. Generally these buyers are wholesalers who resell products to buyers in the destination country.

Table 1. Management Systems Implemented By Organization

Date : 31 August 2021

NO	MANAGEMENT SYSTEMS	STANDARDS	Audit By	Cost/ Year (IDR Million)	Requirement	Status	Complexity	Audit Frequency
I	Food Safety Systems	Good Manufacturing Practices (GMP)	MMAF	Free	Destination Countries	Mandatory	+	Every 2 years
		Food Safety Plan (HACCP)					++	Every Year
II	Food Safety & Quality Management Systems	ISO 22000	SAI Global	40	EU - Buyer	Volenteer	+++	2 times/Year
		BRC Global Food Standard (BRC)	BV - CB	40-50	USA - Buyer		++++	Every Year
III	Ethycal & Health Safety Management Systems	Sedex - SMETA - Social Audit	SGS - CB	40-50	USA - Buyer		+++	Every Year

Notes:

1. MMAF = Ministry of Marine Affair Fisheries (Kementerian Kelautan & Perikanan Indonesia)
2. Focus Group Discussion, 8 Copmanies
3. Total Responden = 59 Managers
4. Location = Gresik, Sidoarjo, Makassar, Ambon, Bogor - Indonesia
5. Condition = all actives

In this certification, the exporting company must prepare personnel, manuals, other required documents, to the cost of obtaining certification. But on the other hand, Indonesian export companies are faced with several problems including the number and market prices of products that have fallen, findings of quality rejections and food safety improvements, the need to have guidelines for surviving or increasing exports, having to carry out cost efficiency, improve quality control and the quality of raw materials and finished products, and the most important thing is the increasing number of demands from the buyer in product certification, processes, social aspects and the business environment. Responding to these problems, the guidelines that must be improved are the implementation of Food Safety Management Systems (FSMS) in the form of Good Manufacturing Practices (GMP) certification, Hazard Analysis Critical Control Point (HACCP) and the certification expected by the buyer in the form of ISO 22000 or the British Retail Consortium (BRC).) Global Food Standard, and Social Audit.

This research is limited to the types of Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Point (HACCP) certifications, ISO 22000, BRC Global Standard Food, and Social Audit which are usually requested by buyers from various countries. ISO (2020) is an independent non-governmental organization consisting of national standards bodies from 165 countries. The ISO 22000 certification on Food Safety Management is for any food company (size to product type) and is responsible for product safety and consumer welfare on the principle that the consequences of unsafe food are serious. The ISO 22000 food safety management standard helps organizations identify and control food safety hazards that lead to global food supply chain assurance and consumer confidence.

More want to be studied and researched: (1). Benefits of product or company certification to open market access for fishery product exports by Indonesian seafood export companies, and (2). Obstacles in fulfilling certification for companies.

II. Research methods

2.1. Research design

This research was conducted through surveys and Focus Group Discussions (FGD) by giving questionnaires to respondents who are experienced in implementing Food Safety Management Systems. The survey was conducted using a Likert-scale questionnaire (score 1-6) distributed online via google form, respondents were asked to provide their perceptions based on

certification experience in the company where they work. This study examines 4 objective criteria, namely 1) Benefits of certification for buyers (buyer); 2) Benefits of certification for companies; 3) Specific constraints on certification for companies, and 4) Constraints on certification requirements for companies. The four objective criteria refer to respondents' perceptions of their experiences with several certifications that have been followed, namely: GMP certification, HACCP certification, ISO 22000 certification, BRC certification, and Social Audit certification. This study examines 4 objective criteria, namely 1) Benefits of certification for buyers (buyer); 2) Benefits of certification for companies; 3) Specific constraints on certification for companies, and 4) Constraints on certification requirements for companies. The four objective criteria refer to respondents' perceptions of their experiences with several certifications that have been followed, namely: GMP certification, HACCP certification, ISO 22000 certification, BRC certification, and Social Audit certification.

The population of this study are all seafood product exporters. Meanwhile, the research sample was taken according to the criteria for seafood product exporter companies that have been certified by GMP, HACCP, BRC, ISO 22000, and Social Audit and have a minimum of 5 years experience in exporting seafood products. A total of 58 employees from 8 companies that meet the criteria for the five certifications were selected as respondents for this study.

The analysis used includes descriptive test of respondent profiles, questionnaire validity test using Pearson's r test statistic which refers to the r-table value where the questions in the questionnaire are declared valid when the r-Pearson value $>$ rtable (α , $df = n-2$). The research objectives were met through analysis of respondents' perception data using the Confirmatory Factor Analysis (CFA) model suitability test with IMB SPSS software version 25 and Partial Least Square (PLS) test with SmartPLS.

III. Results and Discussion

3.1. Good Manufacturing Practices (GMP) Certification

Employees from supervisors, managers, to directors of companies exporting seafood products in Indonesia see the importance of GMP certification for companies. This condition is supported by the highest loading factor value of the benefits of GMP certification for companies (at 0.808) among the three other GMP research variables. Meanwhile, employees from various work units have less specific constraints on GMP certification as indicated by the smallest loading factor value among other variables. However, if you look at the relationship between GMP and certification requirements constraints, the loading factor value between the two exceeds the specification constraints. This needs to be explored in more detail to find out the items that support it.

Table 2. GMP Certification Output

Criteria	Loading Factor	T-Statistics	P-Value	Information
GMP -> Benefits for buyers (BUYER)	0.799	14,038	0.000	significant
GMP -> Benefits for Companies	0.808	17,266	0.000	significant
GMP -> Specification constraints	0.338	1,937	0.029	significant
GMP -> Requirements constraints	0.639	6,946	0.000	significant

Source: PLS Test Results with SmartPLS 3.2.9

GMP certification becomes important to fulfill with the benefits felt by buyers other than on the basis of their request. Meanwhile, from the company's perspective, GMP certification is important to fulfill because it can form a better work culture. Employees in the company perceive that there are no significant obstacles to the specification of GMP certification, as evidenced by the insignificance of all items in this variable. The fulfillment of external training will be something that should be considered to be the main focus for the company, because the loading factor is the highest in the requirement constraint variable. Most of the employees have problems in fulfilling external training for GMP certification. The UK also enforces food safety certification, as stated in the research of Evans et al. (2020) which states that producers in the UK prioritize food safety certification because it is an important point for food producers there. However, it is constrained by knowledge, skills, time, cost and resources and communication and access to information. Assistance for certification can support three critical areas, where research findings indicate that it is necessary to develop support mechanisms to increase the absorption of food safety certification and accelerate the growth of the food sector. costs and resources and communication and access to information. Assistance for certification can support three critical areas, where research findings indicate that it is necessary to develop support mechanisms to increase the absorption of food safety certification and accelerate the growth of the food sector. costs and resources and communication and access to information. Assistance for certification can support three critical areas, where research findings indicate that it is necessary to develop support mechanisms to increase the absorption of food safety certification and accelerate the growth of the food sector.

Table 3. Dominant Items of GMP Certification Benefits

Criteria	Dominant Items	Loading Factor	T-Statistics	P-Value	Information
Benefits for the buyer (Buyer)	Mandatory Upon Customer Request [GMP]	0.859	20.451	0.000	Significant
Benefits for the Company	Building a better work culture [GMP]	0.785	8067	0.000	Significant
Specification constraint	No significant items	-	-	-	-
Requirement constraints	Fulfillment of external training	0.824	14,939	0.000	Significant

Source: PLS Test Results with SmartPLS 3.2.9

Wahidin, D., & Purnhagen, K. (2018) emphasized a strategy that has proven successful in bringing Indonesia to access export markets, especially shrimp, not only to European Union countries but also to other potential export markets. This began with the restrictions imposed by the European Union on the export of agricultural products of shrimp and nutmeg from Indonesia. Wahidin and Purnhagen suggested the choice of a strategy in the form of a legal comparison method and the FSO/ALOP (Food Safety Objective/ Appropriate Level of Protection) framework through a top-down approach based on the nature of the hazard, a national food control system and the availability of international standards that are sustainable and more appropriate in dealing with cases. chloramphenicol in shrimp which is prohibited for use in food-producing animals based on international standards.

3.2.Hazard Analysis Critical Control Point(HACCP) Certification

HACCP as an important certification from the other four certifications is seen by employees from the supervisory, manager, to director levels as something that needs to be implemented further because the benefits are felt especially for buyers. This is evidenced by the high value of the loading factor of the benefits of HACCP certification for buyers among the other three, which is 0.825. Employees in various work units do not experience technical problems that are too specific, but are indicated to have problems related to the requirements that must be met in the implementation of HACCP certification. Considering the requirement constraint points have a loading factor value greater than the specific constraint which has the smallest loading factor value (0.307). This needs to be investigated further to find out the item that causes the condition.

Table 4. HACCP Certification Output

Criteria	Loading Factor	T-Statistics	P-Value	Information
HACCP -> Benefits for the buyer (BUYER)	0.825	14,665	0.000	significant
HACCP -> Benefits for the Company	0.770	11.252	0.000	significant
HACCP -> Specific constraints	0.307	2.196	0.016	significant
HACCP -> Requirement constraints	0.679	6.16	0.000	Significant

Source: PLS Test Results with SmartPLS 3.2.9

The importance of HACCP certification with consideration of the benefits felt by the buyer is based on the fulfillment of the obligations of the customer's request to the buyer who is generally a wholesaler in the distribution channel that requires the availability of certification, one of which is HACCP from products imported from Indonesia. This condition is evidenced by the high value of the loading factor of this aspect (0.850) among others.

Table 5. Dominant Items of HACCP Benefits

Criteria	Dominant Items	Loading Factor	T-Statistics	P-Value	Information
Benefits for the buyer (Buyer)	Mandatory Upon Customer Request [HACCP]	0.850	27,413	0.000	significant
Benefits for the Company	Building a better work culture [HACCP]	0.883	22,190	0.000	significant
Specification constraint	No significant items	-	-	-	-
Requirement constraints	HACCP Certification - BKIPM KKP [Many Equipment Calibration]	0.856	11,527	0.000	significant

Source: PLS Test Results with SmartPLS 3.2.9

The company itself views the importance of HACCP certification because it is able to build a better work culture, where this condition is supported by the highest loading factor value for this item of 0.883. There are no technical constraints (specifications) experienced by employees from supervisory level, manager to director of a seafood product exporting company in Indonesia, but there are requirements constraints mainly due to the large number of equipment that must be calibrated. This result is supported by all items on the specification constraint which are not significant and the high number of equipment calibration items on the requirement constraint (0.856).

3.3. ISO 22000 Sertifikasi Certification

The results showed that the loading factor value of the benefits of ISO 22000 certification for companies was the highest (0.819) among others, thus employees at the supervisory level, managers, and directors of seafood product exporter companies in Indonesia saw the importance of ISO 22000 certification for companies. However, there are obstacles related to the requirements in implementing ISO 22000 certification for companies which are indicated by the loading factor point value being the highest compared to the specification constraints.

Table 6. ISO 22000 Sertifikasi Certification Output

Criteria	Loading Factor	T-Statistics	P-Value	Information
ISO22000 -> Benefits for the buyer (BUYER)	0.790	6,715	0.000	Significant
ISO22000 -> Benefits for Companies	0.819	8,869	0.000	Significant
ISO22000 -> Specification constraints	0.797	14.09	0.000	significant
ISO22000 -> Requirement constraints	0.806	11,475	0.000	significant

Source: PLS Test Results with SmartPLS 3.2.9

In more detail, it is shown in Table 7 that the obligation to fulfill ISO 22000 certification at the customer's request is the beginning of the perceived benefits of ISO 22000 certification for buyers. Meanwhile, from the company's point of view, the importance of ISO 22000 certification

is because problems can be identified and teamwork can be built properly. This condition is supported by the high value of the loading factor on the item of 0.928. Both specifications and requirements are experienced by employees in all work units of seafood product exporters in Indonesia. Auditors who are often difficult are identified as technical constraints (specifications) encountered, while the implementation of a comprehensive supplier audit is a requirement constraint experienced by employees in all work units of exporting companies in Indonesia. This condition shows that the majority of employees in the work units of exporting companies in Indonesia are indeed constrained by the complexity of the ISO 22000 certification audit process.

Table 7. Dominant Items of ISO 22000 Certification Benefits

Criteria	Dominant Items	Loading Factor	T-Statistics	P-Value	Information
Benefits for the buyer (Buyer)	Mandatory Customer [ISO22000] Upon Request	0.956	56,863	0.000	significant
Benefits for the Company	Problems can be identified [ISO22000]	0.928	16,795	0.000	significant
	Building Team Work [ISO22000]	0.928	11,741	0.000	significant
Specification constraint	What are the constraints of ISO 22000? [Auditors are often difficult]	0.954	47,163	0.000	significant
Requirement constraints	ISO-22000 Certification (SAI Global) [Complete Supplier Audit]	0.972	108.116	0.000	significant

Source: PLS Test Results with SmartPLS 3.2.9

The implementation of ISO 22000 was researched by Escanciano, C., & Santos-Vijande, ML (2014) in two companies with different levels, namely Micro, Small and Medium Enterprises (MSMEs) and exporters of the food industry in Spain. Micro, Small and Medium Enterprises (MSMEs) in Spain have implemented ISO 22000 and strengthened their competitive advantage by increasing efficiency as well as productivity and quality. The potential of MSMEs for food products, the high cost and not realizing the potential of implementing the ISO 22000 system by MSMEs for food products are the main obstacles to implementing ISO 22000, apart from being a standard system which is well known in Spain. Meanwhile, the implementation of the ISO 22000 system on food industry exporters in Spain was able to improve efficiency and food safety but there were obstacles and difficulties experienced by exporting companies during the implementation of the ISO 22000 system. Demands by customers to suppliers for the implementation of the Food Safety Management System (FSMS) made the majority of companies in Spain ISO 22000 certified. Companies that have implemented the ISO 9001 system will find it easier to implement ISO 22000 and this certification is a requirement to enter any market so it is one of the important requirements for exporting companies. This ISO 22000 certification is recognized by the Global Food Safety Initiative (GFSI) and has a reputation and

competitive advantages such as the British Retail Consortium (BRC), International Featured Standards (IFS),

3.4. British Retail Consortium (BRC) Certification

Employees view the importance of BRC certification for companies as evidenced by the highest loading factor value (0.735) among others, while the specifications and requirements constraints have the lowest loading factor values of 0.486 and 0.596, respectively. This condition shows that employees at various levels, including supervisors, management, and directors, feel the benefits of BRC certification for the company but do not experience significant problems in terms of technical (specifications) or requirements. Therefore, it is necessary to carry out further testing regarding the items that cause the significance of the four conditions.

Table 8. BRC Certification Output

Criteria	Loading Factor	T-Statistics	P-Value	Information
BRC -> Benefits for buyers (BUYER)	0.608	5.225	0.000	significant
BRC -> Benefits for the Company	0.735	8.326	0.000	significant
BRC -> Specification constraint	0.486	2.214	0.016	significant
BRC -> Requirement constraints	0.596	3.66	0.000	significant

Source: PLS Test Results with SmartPLS 3.2.9

The benefits felt by employees in all work units from the BRC certification are mainly because the implementation of the certification is able to shape and build a work culture in a better direction. This is indicated by the high value of the loading factor of the item, among others, which is 0.889. Meanwhile, the benefits for buyers are felt on the basis of the obligation to fulfill customer requests (loading factor value of 0.826). Although the employees did not experience significant technical problems (specifics) and requirements, in fact the complexity of implementing BRC certification and the existence of a comprehensive supplier audit process became technical constraints (specifications) and requirements felt by employees of seafood product exporter companies in Indonesia.

Table 9. Dominant Items of BRC Certification Benefits

Criteria	Dominant Items	Loading Factor	T-Statistic	P-Value	Information
Benefits for the buyer (Buyer)	Mandatory Upon Customer Request [BRC]	0.826	2.858	0.003	significant
Benefits for the Company	Building a better work culture [BRC]	0.889	4.938	0.000	significant
Specification constraint	What is the BRC constraint? [Complicated]	0.867	1,707	0.047	significant
Requirement constraints	BRC Certification - BV Certification Body [Complete Supplier Audit]	0.927	1,901	0.032	significant

Source: PLS Test Results with SmartPLS 3.2.9

Each country has constraints that are sometimes the same but also different regarding the implementation of BRC, as BRC certified companies in Thailand were studied by Chaoniruthisai, P., et.al., (2018) on 217 quality managers dominated by large companies. The result is that BRC certification is significant and is more effectively applied in companies that have implemented ISO 9001 and HACCP systems.

Meanwhile in Indonesia as researched by Doddema, M., et al. (2020) on product traceability of tuna processing companies in response to BRC Certification and EU IUU regulations. Responses are determined by the performance and engagement of social practices that make up the tuna value chain. The existence of a short-term adaptive response aims to control processing practices in the company. Practices beyond the control of the processing company, carried out by intermediaries and more rigid government officials. The demands of the US, Japan and China for traceability of seafood products depend on performance and engagement of practice in complex societal settings.

3.5. Social Audit Certification

Social Audit certification is considered important for companies by employees at the supervisory level, managers, to directors of companies exporting seafood products in Indonesia. This condition is supported by the highest loading factor value (0.765) among the other three. Meanwhile, the specification constraint becomes a constraint that is deemed insignificant as indicated by the smallest loading factor value but is still within the average range of other variables. Therefore, it is necessary to know more about the sources of benefits and constraints felt by the employee.

Table 10. Social Audit Certification Output

Criteria	Loading Factor	T-Statistics	P-Value	Information
SOC.AUDIT -> Benefits for buyers (BUYER)	0.717	6,549	0.000	significant
SOC.AUDIT -> Benefits for the Company	0.765	10.471	0.000	significant
SOC.AUDIT -> Specification constraints	0.676	7.279	0.000	significant
SOC.AUDIT -> Requirements constraints	0.745	10.112	0.000	significant

Source: PLS Test Results with SmartPLS 3.2.9

The Social Audit relationship which has been proven to be significant with benefits for the company and buyers as well as the specifications and requirements constraints is shown in more detail in Table 11 regarding the dominant items in each of these relationships. The benefits of Social Audit certification for buyers are a form of their obligation to fulfill their customers' requests, meanwhile through the implementation of Social Audit certification, companies can help identify problems. However, the lack of support for the team and the requirement to conduct external training are specifications and requirements constraints experienced by exporters of seafood products in Indonesia.

Table 11. Dominant Items of Social Audit Certification Benefits

Criteria	Dominant Items	Loading Factor	T-Statistics	P-Value	Information
Benefits for the buyer (Buyer)	Mandatory Upon Customer Request [Soc.Audit]	0.917	27,675	0.000	significant
Benefits for the Company	Problems can be identified [Soc.Audit]	0.852	8.915	0.000	significant
Specification constraint	What is the social audit constraint [Team lack of support]	0.907	32,945	0.000	significant
Requirement constraints	Social Audit Certification (Smeta) [Fulfillment of External Training]	0.944	57.74	0.000	significant

Source: PLS Test Results with SmartPLS 3.2.9

The supply chain is a global economy that creates social, environmental, responsible and sustainable burdens in the economic, political, social, legal, human rights, ethical and environmental fields (Gurzawska, A., 2020). The Sedex case study which is based on consideration of the dimensions of economic, environmental and social sustainability shows that there is a collaboration between buyers and suppliers that proposes 3 solutions including: 1) research and innovation support to the supply chain, 2) the basis for multi-stakeholder efforts in industry, government and non-governmental organizations. -government over the supply chain, 3) responsibility on individual companies, employees and the company's organization as a whole.

IV. Conclusion

The implementation of Food Safety Management Systems (FSMS) through GMP, HACCP, ISO 22000, BRC, and Social Audit certifications has benefits and obstacles that are felt by both seafood product exporters in Indonesia and buyers. The results of this study are also supported by Pipatprapa, A., et al. (2017) which states that market orientation, management quality and innovation have a significant effect on the green performance of 178 food industry managers in Thailand. Furthermore, it is known that green performance can be developed with market-based concepts, quality management capacity and innovation development partially mediated by market orientation. The influence of the partial role of the mediator is also supported by the quality of management and innovation, but there is no relationship between the quality of management and innovation. The managerial implication for the company is the need for quality management development for continuous manufacturing improvement and the competitiveness and profits of the company.

Casolani, N., et.al., (2018) analyzed the benefits and obstacles faced by Italian companies when implementing the ISO 22000 standard with a sample of 180 Italian food companies certified for at least 2 years. The main benefit of obtaining certification is increasing commercial opportunities and internal procedures. The main constraints for Micro-Small Companies in the early stages of certification are internal organizational changes and certification costs. Gawron and Theuvsen (2009) add that the ISO 22000 certificate is a form of food safety assurance in distribution channels in Italy that is perceived by buyers. The implementation of the Food Safety

Management System (FSMS) has become a mandatory issue in several commercial channels due to the fact that only 20% of Micro and Small Enterprises stated that they were not satisfied with the application of ISO 22000. Aggelogiannopoulos et al. (2007) and Karipidis et al. (2009) added that companies, especially Small and Medium Enterprises, need certification tools to improve skills and resources in implementing the Food Safety Management System (FSMS).

However, organizational capacity and staff constraints, availability of funds and budget, human characteristics, and system requirements are obstacles in implementing the certification. Relevant solutions that can be implemented include strengthening the Pre-Requisite Program (PRP), fulfilling infrastructure and facilities with a restructuring process, providing incentives, bonuses and awards or fines, development of employee skills and knowledge, comprehensive guidelines for employees with low skills and expertise, and increased training budgets. The limitation of this research is that this research can only be applied to companies certified by BRC, so it cannot be generalized to other Food Safety Management System (FSMS) certifications because the indicators are different and depend on the food subsector. The Food Safety Management System (FSMS) includes programs, plans, policies, procedures, practices, processes, objectives, methods, control measures, responsibilities, relationships, documents, records and interconnected resources to ensure products, processes and food are safe for consumption and human health (Pop, SZ, et al., 2018).

In Latin America, however, the implementation of Food Safety Management System (FSMS) certification is not widely used. They only apply the British Retail Consortium (BRC) certification and have different implementations in 14 South and Central Latin American countries (Rincon-Ballesteros, L., et al., 2019) and the majority are exporters. The main reasons for implementing the certification are to ensure product safety and welfare in accessing foreign consumers, including ethical, efficiency, legitimacy and commercial aspects. The barriers experienced are financial and factors in the business environment and relate to country-specific conditions. The government can provide public policies with more stringent requirements and a co-regulatory approach to increase food exports.

The complexity of the seafood sector and pressure on the industry to reform is taking place in Thailand. Alsamawi, A., et al. (2017) show that the case of Thai seafood provides information and experience that strong statistics, qualitative research and practices need to be carried out to minimize social impacts in global supply chains. The involvement of consumers, civil society, retailers, brands, and producers needs to be carried out in formulating a supply chain solution strategy for the given priority and price equality. Meanwhile, in Indonesia, the Social Audit is used as tangible evidence from buyers' questions to exporters or suppliers about the concern of Seafood in Indonesia in paying attention to ethics and human rights. One of the third parties in the Social Audit certification is the SMETA audit standard (Sedex, 2021 in <https://www.sedex.com/our-services/smeta-audit/>).

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