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Analysis of the Determinants of Fish Quality in Export Markets

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ABSTRACT

Quality of a product is ultimately defined by customers based on the conformance and performance of the product. Attainment of quality requires the performance of a wide variety of identifiable activities. The introduction of modern technology, highly skilled employees and other activities alone do not determine quality unless there is customers' involvements in the specification of quality determinants. This paper explained the importance of business relationships and customer involvements on the determination of quality fish products in export markets.

KEYWORDS: *fish quality, export market, quality determinants*

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1. INTRODUCTION

There is no short and precise definition of quality. Kotler (1996) defined quality as the totality of features and characteristics of a product or service that bears on its ability to satisfy stated needs. Juran (1993) also defined quality as conformance to requirements and fitness for use. A product to be exported must meet all the requirements demanded by the customers. The company determines its products in the qualification of the inspectors, the identification of the right fish grades and the type of packaging used for the different markets. Otherwise, the other activities starting from the landing site, the refrigerated trucks, the machinery in the processing room and other activities are the same with the local markets.

The close business relationships of the export firms with foreign customers, especially European countries, help in sharing information on what type of fish and amount to be exported, sanitation of the processing room, the qualification of quality inspectors and on how to pack,, that is, the size, shape and weight of the foam boxes used for packaging.

In this research paper, the researcher will conduct its study using case study. This helps for analytical generalization. In analytical generalization, the investigation is striving to generalize a particular set of results to some broad theory.

2. Literature review

Practitioners of the use the term "quality" to describe the notions of function, suitability, reliability, conformance with specifications, satisfaction with actual performance and high price. But this is highly confusing and quality is defined as the ability of the vendor to provide goods in conformance with specifications and may also refer to whether the item performs in actual use with the expectations of the original requisitioner, regardless of conformance with specification (Leeders etal, 1988). Most of the time, quality is measured by the close users of the product or service. To emphasize this relationship, Juran and Gryna (1995) defined quality as customers satisfaction and fitness for use. A customer is anyone who is impacted by the product. Customer satisfaction can be achieved through product features and freedom from deficiencies.

Value chain is a systematic way of examining all the activities a firm performs and how they interact each other, and this is necessary for analysing the sources

of competitive advantage. The competitive advantage stems from the many discrete activities a firm performs in designing, producing, marketing, delivering and supporting activities. Value chain disaggregates a firm into its strategically relevant activities in order to understand the behavior of costs and the existing and potential sources of differentiation.

The export firms (EFs) undertakes series of activities to change the raw fish into a finished product and ready for final consumption. These value activities are the physically and technologically distinct activities a firm performs. The value chain of EFs employ the purchase of raw fish, icing and inspection, storing and transport, processing and packaging, hiring inspectors and skilled labour force, and negotiating with the European wholesalers about the type and well being of the fish. The above value activities can be divided into primary and support activities according to the work they perform.

The **primary activities** are the activities involved in the physical creation of a product and its sales and transfer to the buyer as well as after sales assistance. In any firm these activities are divided into five generic divisions and each activity is divided into sub-activities. These are:

Inbound logistics: In the EFs, these activities are related to receiving raw fish from fish farmers, processing, storing in cold area, in the landing site, and transporting the raw fish to the processing area. There is also great inspection in the landing site to differentiate according to their species, check their state or condition of spoilage and keep in the store iced until it is transported. These inbound logistics are activities performed before the raw fish starts process.

Operation: Theses are activities involved in transforming inputs into outputs or final consumption, in case of fish production. The operational activities that are performed in the EFs are filleting or removal of the skin, gutting, which can be either head on or headless according to the order received; washing, inspection and packaging in foam boxes or in cartoons for export and local consumption respectively.

Outbound logistics: this is a means by which buyers can purchase the product and induce them to do so. In the EFs, these outbound logistics are performed after the fish is completely transformed from raw fish to finalized consumable fish. The activities are storing the fish in cold temperature, either frozen or in for fresh consumption in the export market, distributing to every part of the country and exporting abroad and so forth.

Marketing and Sales: These are activities associated with providing a means by which buyers can purchase the product and induce them to do so. In this case, the fish industry advertises especially an outdoor sign in its retailers and the restaurants that provide cooked fish for consumption.

Service: The EFs provide a transport service to local retailers and European wholesalers for the fast delivery of the fish and to be fresh in the market.

The **support activities** support the primary activities in the accomplishment of the process. As to many other processes or industries, the EFs has four broad categories of these support activities. These are:

Procurement: This refers to the purchase of inputs used in the firm's value chain. The inputs purchased in the EFs are the raw fish, ice for keeping the fish unspoiled and the foam boxes imported from abroad. Since the industry is designed for a specific purpose of fish production, there is as such input purchased to the industry.

Technology development: Every activity embodies technology, be it know-how, procedures or equipment. The EFs accommodate machinery, trucks and procedures for the processing of the fish. The machines are designed to new to process the fish in a desired and faster way for quick delivery. There are also procedures how to perform the activities in addition to the know-how of the process and the machines. All the equipment aside the machines are also part of this technology development category, which can be specified as the facilities used in the processing of the fish.

Human resource management: The industry hires employees from the marine biology and fishery department graduates and other specialists skilled in that specific task. There are also unskilled employees employed in the untechnical works. Training is mostly given in the work, no separate training is given outside the company. The compensation rate is different for the different activities and education level.

Firm's infrastructure: This deals with many activities performed in the industry starting from finance, accounting, general management of the EFs, governmental affairs and quality management. That means the availability of specialized accountants, managers and quality control units. In the EFs, there are two quality control units, in the ministry as inspectors and in the industry as quality control unit. The infrastructure, unlike the other activities, supports the entire chain and not the individual activities.

3. Analysis of the determinants of fish quality in export markets

Quality determinants in the fish industry means the operational techniques and activities that are used to fulfil requirements for quality. According to EFs, quality in the industry is specified as providing, safe fishery product for human consumption. The word also embraces a lot of meaning such as purity nutrition, consistency, honesty (in labelling) value and product excellence. The criteria the fish should have is that of A grade. This means that the whole of the properties of the fish and its process must meet the requirements, which result from its practical purpose. The A grade is given to fish with bright skin, clear eyes, smelling transparent. The determinants of quality of the above grades are the organoleptic assessment, chemical assessment, instrumental method, the overall process in the industry, the storage, transportation and the packaging and vessels. The A graded fish are exported to foreign markets.

The quality inspectors use their sensory organs to identify the quality of fish at the landing site, during arrival of fish. This method is used throughout the fish industry to judge on the quality of fish. The inspectors detect effectively the visible signs of quality deterioration by sight, smell and touch. The freshness of the fish is assessed by the general appearance, raw odour, colour of the gills, condition of the eyes and firmness of the flesh, from the literature point of view.

The chemical assessment of quality is also part of the sensory method performed during fish arrival at the landing site. The inspectors check, aside the physical appearance of the fish, whether there are chemicals appeared at the muscles of the fish through sense organs. The chemicals are present in the muscles as buds of water or some colour changes in the muscles, and if such chemicals are present, they indicate the sign of spoilage. The chemicals produced in the muscles are by autolytic enzymes, prefecture micro-organisms or by chemical relationships. During spoilage, these compounds are gradually accumulated in the flesh and are easily determined by sensory organs.

The instrumental method of testing quality fish is performed after the fish has passed a number of processes from the sensory method of testing up to final operational area. The processed fish, before sent to export, is tested at the landing site. There are qualified inspectors who have certificates from European inspectors unit and check the quality of fish in relation to the standards settled by Europeans. A sample is sent from every producer, retailer or wholesalers to the quality inspection unit for approval. This method is used to make sure the fish quality to be adequate at European markets. These inspectors make their first contact with the European inspectors for the quality of products and operational areas.

There are two types of storage in the industry, the chill room and the blast freezer with zero degree Celsius and -18^0C respectively. The chill room has a zero degree Celsius and is one of the criteria that distinguish storage as a quality determinant. The chiller is used to store fresh fish before process and export. They are containers that store processed and packaged fish before export. The temperature of the chill room fluctuates between 0^0C and 4^0C since there is the closing and opening of the stores now and then.

There are three types of packaging in exporting fish products.

First Packaging: The processed fish either fillet, whole gut or whole round, are weighted and put in plastic. The weight is mostly one or two kilograms at a time. There are two types of plastic packaging; the first is vacuum packed for fillets. This is special plastic used not to allow air of bacterial get into the fish and preserves freshness.

Second packaging: The second packaging is foam box which keeps the fish fresh for export. The fish covered by plastic is put in a foam box, fish between plastic filled with ice. First ice is put on the floor of the foam box then a fish covered with plastic and then an ice over it. This is mainly to keep the freshness of the fish.

Third Packaging: Finally, the foam boxes, mostly a bundle of ten boxes, are put in a big plastic being ready for loading. These are the main process is in validated.

There is a traditional method of transaction between the EFs and European traders. It is not known for sure whether they are wholesalers or retailers. But there was a contractual agreement of ordering and delivering fish quality products with the former fish products. The trade relationship is just continuing in the former manner. The main purpose of the relationship is profit maximization by the sale of fish products, get the access of quality inspection in the process, in exporting to many countries through quality production and helps in the modernization of processing facilities in the industry.

The activities performed in the industry are restricted to ordering of processed fish and payment of the delivered quantity and quality. The type of payment is a credit payment. The company informs the bank of destination the amount of exported fish and give the expected Euro value of the product and relive the

exact amount of money from the bank after the sale of the product. This is designed to control the dollar value entering the country.

There is no direct benefit from the relationship because there is no guarantee on the payment of the delivered fish and the continuation of the business relationship. There is no settled relationship, in that, there is no contractual agreement on the continuation and payment of exact amount. They may shift to other exported without informing the industry or may cease ordering fish products from the industry. The only benefit generated from the relationship is that, if any country is exporter of fish products to European Union Inspectors who control the processing activities and procedures in the industry. They give orders on the modernization of machinery and modifying the processing layout. The moment the inspectors approve the quality of production many countries enter into a contractual agreements for delivery fish products to their market and the industry, as a whole, gets the right to expand its distribution channel to many countries. The foreign countries depend on the contractual agreements of the European inspectors to start a business and make relationship.

4. Conclusion

From the data collected and the analysis made, the researcher concluded that the determinants of quality fish for export markets are performed accurately with the help of the European inspectors. There are different determinants of quality fish that are performed throughout the industry for the well being of the product. The determinants acquired through excessive interviews are organoleptic assessment, instrumental method, chemical assessment, packaging, storage, vessel and transportation.

Concerning the business relationship, the EFs do not have any formal contractual agreement with European wholesalers. The determinants of quality fish are not identified by them but by the European inspectors. Therefore, the business relationship does not contribute anything to the industry's quality fish production to European markets.

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