

Consumer Preferences of Seafood Types in Belgium, Spain and Italy

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Abstract

Fish or seafood is an important element of the Mediterranean diet and also a part of the traditional European diet. Belgium, Spain, and Italy are the major seafood export destinations of India, in Europe in terms of value (US \$ millions) and in terms of Quantity (in MT). Surveying the seafood consumers in these market will help the country identify the seafood needs and expectations of the consumers in these countries. Information was collected from the consumers through a structured questionnaire. Consumers were asked to rank their preference of seafood type. The mean ranks of the consumers of the three countries were compared with a drawing of a spider chart. The seafood types mainly categorised in the questionnaire were fish, shrimp, mussel, crab, lobster, squid and cuttlefish. Data of 294 respondents was collected from seafood consumers of Belgium (148), Spain (87), and Italy (59). The data was collected from Brussels seafood expo 2016. These results are significant for the marketers and producers of the seafood industry to help plan efficient marketing strategies and build new business opportunities. Exporting seafood on the basis of preferences of the consumers will fetch more value for the country during export.

Keywords: Consumer Behaviour, Seafood, Seafood Preferences, Spain, Belgium, Italy

Introduction

Fish is widely available (IOM, 2007) and it is generally perceived as a healthy food product by nutritionists, food scientists, food and health policy makers and consumers (Verbeke, Sioen, Pieniak, Van Camp, & De Henauw, 2005; Pieniak *et al.*, 2009). Mozaffarian and Rimm (2006) found out that consumption of fish species higher in n-3 PUFAs reduces the risk of coronary heart diseases (CHD) deaths by 36 % and reduces total mortality by 17%. Peter, Chopra, and Jacob (2013) in their review on the health benefits of omega-3-fatty acids have pointed out the preventive roles

and benefits of omega-3-fatty acids in dyslipidaemia, overall cardiac health, and arteriosclerosis and also the non-cardiac benefits. Seafood proteins are known to be highly digestible in the gastrointestinal tract. High ileal digestion results in lower loss of essential amino acids into the colon and less protein fermentation in the colon which in turn lowers the formation of toxic compounds (Borresen, 2008). Since consuming seafood is a part of maintaining a healthy diet, consumer research on seafood is valuable for the health authorities and marketers.

India exports seafood to Japan, USA, South East Asia, European Union, China, Middle East and Others. Europe is one of the major export markets of Indian seafood. Fish is an important element of the Mediterranean diet and also a part of the traditional European diet (Birch & Lawley, 2012). During the financial year 2014-2015, India exported 10,51,243 MT of seafood which is valued at Rs. 33,441.61 crores and USD 5511.12 million. The quantity of seafood exported to Europe is 1,88,031 MT and is valued at 1106.67 USD million. That accounts to 18% of the total quantity (in Metric tonnes) of seafood exported from Indian and 20 % of the total value (in million US \$) received from seafood export. In Europe, Belgium, Spain, and Italy are the major consumers of Indian seafood, quantity wise and value wise. Studying the consumer preferences of seafood in the major export destinations of Indian seafood industry will help it plan efficient marketing strategies and build new business opportunities.

Objectives

The objective of this paper is to present the seafood preferences of consumers in Spain, Belgium, and Italy with regard to type of seafood (fish, shrimp, cuttlefish, squid, mussel, crab, and lobster).

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The paper also tries to understand the needs of these markets which will help us send the right seafood product to these countries.

Methodology

The paper involves the use of primary and secondary data. Secondary data were collected from Marine Product Export Development Authority of India (MPEDA), journal articles, research papers, and magazines. The seafood export data of 20 years from 1995-2015 were collected to find out the potential seafood export markets of India. From these statistics it was concluded that Europe is a major export market for Indian seafood. India exports seafood to 26 countries in the European Union. The seafood export statistics of these 26 countries for 15 years from 1995-2015 were collected from MPEDA. Spain, Belgium, and Italy are the three countries to which major share of Indian seafood is exported quantity wise and they are the countries from which the major share of revenue or value is earned for seafood export from India.

The sample size of the study was decided based on the proportion of quantity of seafood exported to Spain, Belgium, and Italy for a period of 20 years by the formula $n \geq Z^2 PQ / d^2$, where n = the size of the sample, Z^2 = level of confidence $(1.96)^2$, d^2 = error $(.05)^2$, P = proportion of quantity of seafood in percentage (0.18), $Q = 1 - P$. Based on the formula, the sample size required is 227 from all the three countries together. $227 = 0.18 (1 - 0.18) (1.96)^2 / (.05)^2$

Primary data were collected from the natives of Belgium, Spain, and Italy, above 18 years of age who understand English, directly from the respondents and also through mail. The author visited Belgium, and also participated in Brussels Seafood Expo 2016 held from April 26 to April 28, 2016 and started the survey. The natives of Spain and Italy who came to participate in show were approached to collect their preferences of seafood with the help of the survey instrument, questionnaire. The details of the participants from Spain, Italy, and Belgium were collected from the information centre at the expo. The contacts of the respondents were also collected and the questionnaires were mailed to the respondents after the expo. The survey lasted from April 2016 to September 2016, including the direct survey and email survey questionnaires returned.

Sequential snowball sampling technique was followed to collect the required samples. In this technique the existing respondents recruit future respondents from among their acquaintances till the desired sample size is achieved. In simple words the existing respondents guide the surveyor or help the surveyor to news respondents via mail or in person. Data from 294 respondents were collected from Belgium (148), Spain (87), and Italy (59). Distribution of questionnaires were done by the following methods.

- The questionnaires were handed over to the respondents and asked to be filled out by them and collected later from the stalls at expo.
- The questionnaires were read out to the respondents.
- The help of volunteers were also used to get questionnaire forms filled.
- The contacts of respondents were taken and questionnaires were mailed to them after expo.

Questionnaire Content

Self-administered questionnaires are less subject to socially desirable bias (Yeager, Krosnick, Chiat Chang, Javitz, Levendusky, Simpser, & Wang, 2011). The questionnaire was developed in English. The seven seafood types were chosen for the study which are fish, shrimps, mussel, crab, lobster, squid, and cuttlefish based on the seafood types exported from India. The respondents were asked to rank their preferences on a scale 1 to 7 where 1 is the most preferred and 7 is the least preferred.

Statistical Analysis

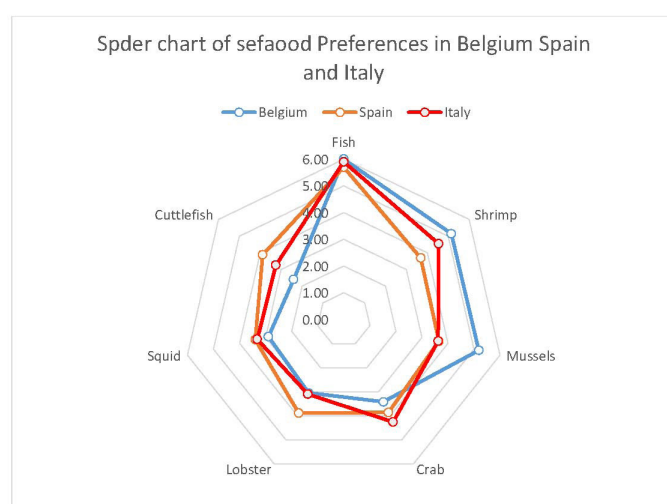
The mean ranks of the seven seafood types in each country were calculated first. Then mean rank of the seafood preferences in each country was converted into scores by the formula, maximum rank + 1 – mean rank, to avoid negative polarity in the spider graph. The score data of seafood preferences in each country was used to plot the radar graphs. The ranks of the seven seafood types of each country are arranged radially around a point. The value of each seafood type is depicted by a node on the spoke. A line is drawn connecting the data values for each spoke and hence it shows all the data value at one stretch. The colour coding for each country helps to visually correlate and contrast the seafood type preferences in each country. All statistical calculations were done using Ms Excel.

Table 1: Mean Rank of the Seafood Preferences in Three Countries

Country	Fish	Shrimp	Mussel	Crab	Lobster	Squid	Cuttlefish
Belgium	2.00	2.85	2.82	4.58	4.95	5.11	5.60
Spain	2.30	4.31	4.35	4.14	4.12	4.60	4.12
Italy	2.10	3.46	4.37	3.75	4.90	4.68	4.75

Table 2: Mean Score of the Type of Seafood Preferred in the Three Countries

Country	Fish	Shrimp	Mussel	Crab	Lobster	Squid	Cuttlefish
Belgium	6.00	5.15	5.18	3.42	3.05	2.89	2.40
Spain	5.70	3.69	3.65	3.86	3.88	3.40	3.88
Italy	5.90	4.54	3.63	4.25	3.10	3.32	3.25

**Fig. 1: Spider Chart of Seafood Preferences in Belgium, Spain, and Italy**

Note: Score values on a seven point frequency scale (a higher score corresponds with a high preference frequency)

Results

The seafood preferences for the seven seafood types in three countries show a similar pattern with the exception of mussel, cuttlefish, and shrimp. The preference for fish is more or less same amongst the consumers in all the three countries. The score values of all the three countries for fish preferences is the highest and are near 6.0. The score value of preference for fish by Belgian consumers is 6.0, Italians consumers is 5.90, and of Spanish consumers is 5.70. For shrimp the highest preference is shown by Belgian consumers with a data value of 5.15 followed by

the preference of consumers in Italy and Spain. The data value of Italian consumer's preference is 4.54 and that of Spanish consumers is 3.69 for shrimp. The graph shows higher preference for shrimp among Belgian respondents than among Spanish and Italian respondents.

There is an exceptionally high preference for mussels among Belgium consumers over Italian and Spanish consumers. Italy and Spain show almost similar value of 3.63 and 3.65 on the plot for mussels whereas the Belgian consumers score value for mussels is 5.18. The mean score for preference for crab in Italy is 4.25 and that in Spain and Belgium is 3.86 and 3.42. Italian respondents show the most preference for crab, followed by respondents in Spain and then respondents in Italy. Belgians show the least preference for lobster among the three countries. The score for the preference for lobster among Belgian respondents is 3.05. The highest preference for lobster is shown by the Spanish seafood consumers with a value of 3.88. The Italians show a slightly less preference than Spanish consumers for lobster with a value of 3.10. In the case of Squid the most preference is shown by Spanish and Italian consumers and then by Belgian consumers. The mean score value of Spanish consumers ranking and Italian consumers ranking is 3.40 and 3.32 and Belgian consumers ranking is 2.89. The value of Spanish consumers ranking for cuttlefish is 3.88 and that of Italians is 3.25 while that of Belgian consumers is 2.40.

Discussions

Considerable differences exist between participants from the three countries with regard to their preferences of the seven different seafood types. In all three countries

the highest preference is indicated by the respondents for fish. This result is in agreement with Vanhonacker, Pieniak, and Verbeke (2013) who in their research of eight European countries – Portugal, Italy, Sweden, UK, Greece, Czech Republic, Romania, and Germany, stated that consumers of all eight countries indicated highest consumption frequency for fish. Fish is the favourite seafood product and most consumed seafood product by European consumers. Belgium respondents reported the highest preference for Shrimp and mussels. The respondents from Italy ranked the highest preference for crab. Spanish seafood consumers showed the highest preference for lobster, squid and cuttlefish. Relatively low preference for fish, mussels and shrimp was reported by Spanish consumers. Belgian consumers exhibited relatively low preference for crab, lobster, squid and cuttlefish than Italian and Spanish consumers.

Conclusion

The present study concentrates on consumer preferences of seven seafood types in three European countries. Studies on consumer preferences for seafood in European countries are widely documented in literature, however not with specific purpose of enhancing Indian seafood. The findings of this study are mainly descriptive and provide insights for future research. Preference for fish differed slightly between countries and should be taken into account in efforts to explore opportunities to trade fish products. The export of mussels can be done in more innovative ways and new products ideas can be developed as there is clear preference for mussels in Belgium. Further research can be conducted to find out how the mussels are preferred to be eaten. The exporters can send the mussels in the required form to consumers. The findings on consumer preferences of seafood among major export destination countries of Europe are relevant to decide on new marketing strategies towards these countries and also useful for seafood exporters, marketers and government authorities.

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