Full Length Research Paper

Preliminary studies on the factors influencing consumers' preference for shrimp and prawn in Degema Local Government Area of Rivers State, Nigeria

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A descriptive survey was conducted to investigate the factors influencing consumers' preference for shrimp and prawn in Degema Local Government Area of Rivers State, Nigeria. One hundred and fifty (150) consumers of fifty (50) each were randomly selected from three (3) major shrimp and prawn/fish markets from Biile, Obuama, and Tombia located at the shores of the river banks. The instrument used for data collection was a structured questionnaire. Data were analyzed using frequencies, percentages and mean statistics. Results of the socio-demographic characteristics of the consumers revealed that majority were males, married, literate within the age of 45years and above. They purchased the products from these stationed markets and mostly preferred eating the products while smoked. Further results revealed that consumers preferred shrimps and prawns compared to other animal protein sources due to their familiarity with shrimps and prawns and fair knowledge of their existence within their environment, which has prompted them to taste the products. Some of the factors that influenced consumers' preference for shrimps and prawns are their availability, taste and nutrient composition and associated health benefits. Therefore, it is recommended as a major protein source food of good health benefit by consumers in the area.

Keywords: Shrimps, prawns, consumers, preference, Degema Local Government Area

INTRODUCTION

Shrimps and prawns also described as one of the most predominant shell fishes are commercially important species of marine and freshwater crustaceans that belongs to the order decapoda, due to the possession of exo-skeletons and ten legs (Jimoh and Lemomu, 2010). However, it is perfectly clear that shrimp and prawns are actually two distinct animals. They can be distinguished in that, prawns have claws on three of their five pairs of legs, while shrimps have claws on two of their five pairs of legs. Their gills and body shape are different too. They are very similar in appearance and the terms are often used interchangeably in commercial farming and wild fisheries. Similarly, in terms of cooking them, they are virtually identical (Jimoh and Lemomu, 2010).

The mangrove habitats are mostly rich in shrimp and prawn resources (Kannupandi et al., 2003). Furthermore, commercial shrimp and prawn fishery yields are greater in the coastal areas as may be experienced in Degema Local Government Area in Rivers State, with luxuriant mangrove forests than where mangroves are absent (Cliffe and Akinrotimi, 2015). Shrimps and prawns are important types of seafood that are consumed worldwide. In Nigerian the domestic seafood market for shrimp and prawn is a mix of the modern and the traditional. However, the majority of the population in the rural communities and those in poorer urban areas depend upon the traditional markets, mostly selling traditional products derived from the rural fisher folks (Syama Dayal et al., 2013). Shrimps and prawns as a very perishable

product, is mostly sold smoked, while the fresh/live products are sold close to the points of their capture. The distribution relies upon small traders who buy and deliver small quantities of fresh/dried/smoked seafood to rural markets using local transport (Syama Dayal et al., 2013).

Food helps human beings maintain good health by providing all the essential nutrients. Consequently, consuming a variety of seafood in balanced proportions will prevent deficiency diseases and chronic diet-related disorders (Syama Dayal et al., 2013). Shrimps and prawns have been reported as one of the most delicious sea foods consumed the world over in traditional meals for which the populaces of Degema Local Government Area in Rivers State are not an exception. Contrarily, there is scarcity of documented information on the consumer preference for these high protein foods in the area under investigation.

Statement of problem

Shrimps and prawns can be served either cooked or smoked. They could also be prepared as a sauce, soup or stew in most dishes served in most Nigerian homes. From a nutritional standpoint, shrimps and prawns are high in protein, low in saturated fat and calories, and have a natural flavour (Syama Dayal et al., 2013). Shrimps and prawns have also been identified as a rich source of vitamin B_{12}, selenium, omega-3 highly unsaturated fatty acids (HUFA) and astaxanthin, a potent natural antioxidant (Venugopal, 2009). Despite the several nutritional characteristics of shrimp and prawn based on which it can be considered as a healthy food, there is reluctance among dieticians or related scholars and health professionals to properly enlighten the rural populace, especially those in Degema Local Government Area in Rivers State. This gesture has prompted the preliminary survey of the factors affecting consumers' preference for shrimp and prawn in Degema Local Government Area of Rivers State, Nigeria.

Significance of the study

It is believed that the study would assist to remove the identifiable barriers which will hinder the consumption of shrimp and prawns among the people of Degema Local Government Area of Rivers State in Nigeria.
Furthermore, this study will:

(a) Promote the consumption of shrimps and prawns and their related products.
(b) Create awareness of the nutritional value of shrimp and prawn and their products.
(c) Enlighten consumers on the potential health benefits of incorporating shrimps and prawns in their food menus.

Objective of the study

The main objectives of this study are to investigate the factors influencing consumers' preference for shrimp and prawn in Degema Local Government Area of Rivers State, Nigeria. The specific objectives are:

(i) To analyze the socio-economic characteristics of shrimp and prawn consumers.
(ii) To ascertain the level at which shrimps and prawns is preferred to other protein sources and reasons behind their preference.
(iii) To estimate the familiarity of shrimps and prawn consumption by the populace of Degema Local Government Area of Rivers State.
(iv) To determine the factors that influences the consumption of shrimps and prawns in Degema Local Government Area of Rivers State.
(v) To analyze the constraints to the consumption of shrimps and prawns in relation to other animal protein sources.

METHODOLOGY

Research design

This study is a survey research conducted to appraise the factors affecting Consumers' preference for shrimp and prawn in Degema Local Government Area of Rivers State, Nigeria.

Study area

The study focused on identifying the consumers' preference for shrimps and prawns and factors that influenced its consumption in Degema Local Government Area of Rivers State in Nigeria. It covered consumers in six (6) communities (Bille, Bukuma, Degema, Ke, Obuama and Tombia) out of the eleven (11) communities (Bille, Bakana, Bukuma, Degema Consulate, Degema, Elem ama, Ke, Obuama, Old Bakana, Tombia and Usokun) in Degema Local Government Area of Rivers State.

Population of the study

The population of the study consists of one hundred and fifty (150) shrimp and prawn consumers purposively selected from three (3) major shrimp and prawn/fish markets (Biile, Obuama and Tombia) located at the shores of the river banks in Degema Local Government Area of Rivers State, Nigeria.

Sample size and sampling technique

A total of one hundred and fifty (150) shrimp and   prawn

consumers were used for the study. The random sampling technique was used to purposively select fifty (50) consumers from each market to represent the sample population for the study.

Research instrument

The instrument used for data collection was a structured questionnaire and direct interviews to elicit information from shrimp and prawn consumers on their preference for these protein sources. The questionnaire comprises of four sections. Section A was used to provide information on the socio-economic characteristics of the consumers. Section B was used to elicit information on the level of preference and familiarity to shrimps and prawns. Section C was used to elicit information on the factors that affects the preference for shrimps and prawns by the consumers. Section D was used to provide information on the constraints to the utilization of shrimps and prawns. The question items in Sections B, C and D of the questionnaire were responded to on a 4-point Likert scale of Strongly Agree (SA) – 4; Agree (A) – 3; Disagree (D) – 2 and Strongly Disagree (SD) – 1.

Validity and reliability of instrument

The structured questionnaire used as instrument for data collection in this study was designed and submitted to experts who were familiar with the study for consideration. The items in the questionnaire were considered to elicit relevant information required to fulfill the objectives of the study.

Data analytical procedure

Data were analyzed using frequencies, percentages and mean statistics with the mean established at 2.5 (i.e. 4 + 3 + 2 + 1 = 10 divided by 4). Any item having the mean of 2.5 and above was considered as an "Agreed response" whiles the one with the mean less than 2.5 was considered as a "Disagreed response" respectively, for the responses to the question items on Sections C and D. The responses reported by the respondents were further substantiated by personal observations by the researcher.

RESULTS AND DISCUSSION

Socio-demographic characteristics of the shrimp and prawn consumers

Table 1 presents the socio-demographic characteristics of the respondents (shrimp and prawn consumers) used in the study. The results obtained revealed that higher proportions (60%) of the consumers were males and majority of them were married (53.3%).

Similarly, a greater number of the consumers (43.3%) fell within the age brackets of 44 years and above and majority of them were reported to be literate (56.7%), with majority (53.3%) of them having a house hold size of 4 – 6 persons. As regards the means of sale/purchase of the shrimps or prawn majority of the respondents explained that they obtain the products from the markets (56.7%) as against those that buy the products from hawkers (23.3%) and restaurants (20.0%) respectively and are always interested (93.3%) in consuming and preferred consuming the products especially when they are smoked (53.3%) as against ordinary cooking (46.7%). Similarly, a good number (66.7%) explained that they consume the products 1 – 2 times per week.

The findings of this study as regards the socio-demographic characteristics in terms of the educational status of shrimp and prawn consumers is in agreement with Erdoğan *et al.* (2011) who in their study explained that the consumption of sea food does not discriminate between the non-educated or primary school-educated respondents, the high school or the university degree participants or consumers. They explained that all of them consumed sea foods irrespective of their educational levels. However, the more educated people seem to develop better attitudes towards the consumption of sea food because of their level of enlightenment/training and the health benefits derivable from the consumption of sea foods.

The responses of the consumers as it concerns their socio-demographic characteristics in terms of age and shrimps or prawn consumption revealed a positive relationship within these two. Thus, this study is in agreement with the findings of Erdoğan *et al.* (2011) who also revealed a positive relationship between seafood consumption and age. Furthermore, Storey and Forshee, (2007) also found a significant increase in seafood consumption frequencies of those up to 45 years and older. Their findings were based on the fact that, older people are more health conscious than their younger counterparts and tend to eat less, and choose a diet that may reduce cardiac disease. Therefore, they are compelled to consume more fruits, vegetables and fish (Blisard *et al.*, 2002). The responses of the consumers as regards frequency of consumption of shrimp and prawn in this study was in agreement with the findings of Erdoğan *et al.* (2011), who explained that in US consumers of sea foods consume them 1 – 2 times per week.

Level of preference and familiarity to shrimps and prawns

Table 2 provides the responses of the respondents as it relates to their preference and consumption of shrimps and prawns. The consumers agreed that they preferred shrimps and prawns compared to other animal protein sources; they are familiar to shrimps and prawns because

Table 1. Socio-demographic characteristics of Respondents.

Question item	Response	No. of Respondents	Percentage
Sex	Male	90	60
	Female	60	40
	Total	150	100
Marital status	Married	80	53.3
	Single	70	46.7
	Total	150	100
Age	Below 24 years	5	3.3
	25 – 34 years	50	33.3
	35 – 44 years	30	20.00
	45 years and above	65	43.3
	Total	150	100
Educational status	Illiterate	65	43.3
	Literate	85	56.7
	Total	150	100
House hold size	0 -3	10	6.7
	4 – 6	80	53.3
	7 – 9	50	33.3
	Above 9	10	6.7
	Total	150	100
Means of sale/purchase of shrimps or prawn	Market	85	56.7
	Hawking	35	23.3
	Restaurants	30	20.00
	Others	0	0.00
	Total	150	100
Means of preparation/consumption of shrimps or prawn	Smoked	80	53.3
	Cooked	70	46.7
	Others	0	0.00
	Total	30	100
Interest in shrimps or prawn	Yes	140	93.3
	No	10	6.7
	Total	150	100
Frequency of shrimps or prawn	Daily	35	23.3
	1-2 times per week	100	66.7
	Ones per month	10	6.7
	Cannot remember	5	3.3
	Total	150	100

Field Report, 2019

Table 2. Level of preference and familiarity to shrimps and prawns.

ITEM	4	3	2	1	ΣF	N	X	Decision
I prefer shrimps and prawns compared to other animal protein sources.	380	45	40	20	485	150	3.23	Agree
I am familiar to shrimps and prawns because I have seen them before.	260	240	10	0	510	150	3.40	Agree
I am familiar to shrimps and prawns because I have tasted them before.	300	90	80	5	475	150	3.17	Agree
I am familiar to shrimps and prawns because I have eaten them before.	320	105	20	25	470	150	3.13	Agree

Field Report, 2019

they have a fair knowledge of their existence within their environment, and they have tasted them by eating them.

Factors affecting the preference for shrimps and prawns by consumers

Table 3 provides the responses of the respondents as it relates to the factors that affects their preference for shrimps and prawns. They all agreed that most of the factors that will influence or affect their preference for shrimps and prawns are: their availability, taste and nutrient composition, the ease of chewing them, they do not contain fat and their associated health benefits. They however, disagreed that the products are cheap. The responses by the consumers of shrimps and prawns reveal that its taste is a key factor that will affect the consumption of the products by consumers and this is in agreement with the reports of Bredahl and Grunert, (1997) who explained that the taste and preference towards

Table 3. Factors that affects the preference for shrimps and prawns.

ITEM	4	3	2	1	ΣF	N	X	Decision
Cheapness	80	120	100	35	335	150	2.23	Disagree
Availability	180	195	70	5	450	150	3.00	Agree
Very tasty/nutritious	240	135	50	20	445	150	2.97	Agree
Not tough	160	165	70	20	415	150	2.77	Agree
Very familiar with it	200	150	80	10	440	150	2.93	Agree
Do not contain fat	220	135	70	15	440	150	2.93	Agree
It's perceived health benefits	140	180	60	25	405	150	2.70	Agree

Field Report, 2019

Table 4. Constraint to the utilization of shrimps and prawns.

ITEM	4	3	2	1	ΣF	N	X	Decision
Very expensive	320	150	30	5	505	150	3.37	Agree
Not always available	80	315	50	0	445	150	2.97	Agree
Taboo/religious belief associated with its consumption	220	60	60	45	385	150	2.57	Agree
Tedious in processing them	80	315	50	0	445	150	2.97	Agree
Personal dislike	220	60	80	35	395	150	2.63	Agree
Described as an unhealthy animal protein source	100	75	80	60	315	150	2.10	Disagree

Field Report, 2019

shrimps and prawns are known as the most important predictors to the consumption of the products. Similarly, the preference for the products may be due to its nutritive value and health benefits. This is because, they are high in protein, has lower calories, total fat, and saturated fat when compared to other protein-rich animal foods and this can decrease the risk of heart attack, stroke, and hypertension (Reames, 2012). On the contrary the consumers disagreed that the products are cheap. This is in agreement with the reports of Kreider *et al.* (1993) that seafood is more expensive than poultry, beef and pork and attributed this to lower household incomes of the consumers.

Constraint to the utilization of shrimps and prawns

Table 4 provides the responses of the respondents as it relates to the constraints to the consumption or utilization of shrimps and prawns by consumers. The consumers agreed that the constraints for their inability to utilize shrimps and prawns are that, it is expensive, not always available, the taboo/religious belief associated with its consumption, the tedious nature of their processing and personal dislikes by some consumers. It was, however disagreed that perceiving them as unhealthy animal proteins could be a constraint to their consumption. The findings of this study are in agreement with those of Erdoğan *et al.* (2011) who explained that dislike of shrimps or prawn and other sea foods may arise depending on many other factors such as consumers' attitudes, knowledge and preferences, allergic problems, bones and being vegetarian. The other reasons declared were troublesome to prepare and price (Hicks *et al.*,

2008; Kreider *et al.*, 1993). However, Xiang-guo, (2002) also mentioned that the expensive nature of shrimps and prawn is not considered as an important constraint affecting their utilization or purchasing decisions but that what is paramount is its quality and associated health benefits.

Conclusion and Recommendations

Shrimps and prawns also described as one of the most predominant shell fishes are commercially important species of marine and freshwater crustaceans. They are highly nutritious due to the presence of highly essential omega-3 and omega-6 fatty acids. They are a healthful choice for people of all ages, growing children, pregnant women, active adults, and the elderly. The consumers agreed that they preferred shrimps and prawns compared to other animal protein sources. This is because they are familiar to shrimps and prawns and have a fair knowledge of their existence within their environment, as well as tasted them by eating. The factors that influence or affected their preference for shrimps and prawns are: their availability, taste and nutrient composition, the ease of chewing them, they do not contain fat and possess other associated health benefits. They however, disagreed that the products were cheap. The consumers agreed that the constraints for their inability to utilize shrimps and prawns are that, it is expensive, not always available, the taboo/religious belief associated with its consumption, the tedious nature of their processing and personal dislikes by some consumers. It was, however disagreed that perceiving them as unhealthy animal proteins could be a constraint to their consumption.

Therefore, it is recommended as a major protein source food of good health benefit.

Authors' declaration

We declared that this study is an original research by our research team and we agree to publish it in the journal.

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