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Fish Consumption Pattern and Marketing Efforts in Arba Minch Town, Gamo Gofa Zone, Ethiopia

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Abstract: ***Malnutrition is the serious problem in developing countries where access to varieties of food is limited to few and repetitive food items. Fish consumption plays important role in reducing the problem of malnutrition, if consumed both at commercial places and at home.This paper investigated the fish consumption status and pattern in Arba Minch town (well known by fish resource in Ethiopia). Consumption variations between differed demographic categories and the status of fish marketing were assessed.Descriptive research method has been employed primary data collected through questionnaire from 115 fish consumers selected conveniently at commercial establishments (hotels, restaurants, dining rooms, and resorts). The result of X^2-test of independence showed statistically significant association between two demographic variables (education $X^2(1) = 20.023, \alpha = 0.05$, $P = 0.000$and income$X^2(1) = 26.366$, $\alpha = 0.05$, $P = 0.000$) andrespondent's consumption status. TheCramer's V (0.417 and 0.479) test of strength of the associations was found moderate. The overall fish consumption status is low, and the current marketing efforts were found poor. It can be recommended that commercial food establishments can enhance fish consumption by promoting fish nutritional and health value using outdoor promotion tools, diversifying the fish products in their menu and preparing food contest.***

Keywords: Fish, Consumption pattern, Marketing efforts, Commercial establishments

1. Introduction

No doubt that fishery plays important role in socio-economic aspect of the people. It contributes to the household well-being through ensuring food security and income (Gianelli et al., 2018). It was reported that world fish consumption increases from 67% in the 1960s to 87%, or more than 146 million tonnes, in 2014. It helps millions of poor to get animal protein over the world. Unsaturated fats found in fish plays important role in protection against cardiovascular diseases and infants' brain and nervous system development.It has also contributes to economic growth (FAO, 2016: FAO, 2018).

"An estimated 56.6 million people were engaged in the primary sector of capture fisheries and aquaculture in 2014, of whom 36% were engaged full time, 23% part time, and the remainder were either occasional fishers or of unspecified status. In 2014, 84% of the global population engaged in the fisheries and aquaculture sector was in Asia, followed by Africa (10%), and Latin America and the Caribbean (4%). Women accounted for 19% of all people directly engaged in the primary sector in 2014, but when the secondary sector (e.g. processing, trading) is included women make up about half of the workforce. (FAO, 2016)"

This discloses that the fish has indispensable role in improving and scaling up the nutrition system of many poor in developing nations. In addition, fishery, particularly secondary fishery activities can contribute to women's economic activity engagement.

Fishery in Ethiopia is traditional mainly dominated by male fisherman capturing, transporting, processing and selling fish with few fish retailer (Amare et.al, (2018); Sime, (2015); Tewabe, (2015)). Starting from 1993 when Ethiopia lost its coastline due to Eritrea separation, only inland water bodies used for capture fishery. In 2014, with 30% fulltime employment in primary capture fishery 45,000 fishersand 700 people in aquaculture were engaged (FAO, 2015). The major inland fish sources of the country are rivers, lakes, reservoirs and small water bodies.

The fisheries potentials of these major sources accounted 51, 481 tones/year: 23,342 tones/year from major lakes (Tana, Ardibo and Lugo, Ziway, Langano, Abijata, Shalla, Awassa, Abaya, Chamo, Turkana); 4,399tonnes/year from major reservoirs and dams (Koka, Fincha-Amerti, Beseka, Denbi, Melka-Wakena, Aba-samuel, Alwero dam, Hashengie, Small Abya, and Wedecha); 1,952 tones/year from Small water bodies(Southern region (Cheleloka Swamp), Gambella (swamps and flood plains),Small reservoirs and ponds); and 21,788 tones/year from rivers (Janko, 2014).

However, the production for the year 2013 showed a total of 38,400 tones/year. The import represents 3.8Million USD and theexport reflects 0.4 million USD (FAO, 2015). These indicate underutilization of fisheries potentials and presence of excess demand. The fish demand is increasing from time to time in all parts of the world, which can be considered as initiating opportunities for fisheries development and marketing. The government of Ethiopia endorses Fisheries Development and Utilization Proclamation (No. 315/2003) to boost the fish production, fishery management and aquatic resource conservation.The aims were to conserve fish biodiversity and its environment as well as to prevent and control over-exploitation of the fisheries resource; to increase the supply of safe and good quality fish and to ensure a sustainable contribution of the fisheries towards food security; and to expand aquaculture development. However, due to poor implementation this resources have be overexploited by traditional practice of legal fishers and illegal fisheries practices with no conservation of it (Janko, (2014); Dereje, (2014); Wakjira, Tolemariam and Kim, (2013); Amare et.al, (2018); Sime, (2015); Dereje, (2015)).

The study area, Arba Minch town found in South Nations, Nationalities and People Regional State (SNNPRS), Gamo

Gofa Zone, Ethiopia, is well known by fish resources of its Abaya (600tons/year) and Chamo Lakes. Lake Chamo (4500 tons/year) is the second largest lake of fish production potential in Ethiopia next to Lake Tana (10,000 tons/year). Despite its potential and contribution to vast employment opportunities, nutrition for local communities, and contribute to the production potential of the country, these lakes are facing the same problems. Many researches have been conducted regarding these problems and suggested possible solutions (ibid). Even if fish has been consumed fresh in most fish farming localities of Ethiopia, the consumption rate were lowand rarely used for commercial purposes (Janko,2014). Ethiopia represents the world lowest country in annual per capita fish consumption in 2010 (FAO, 2015). Debebe concluded that fish consumption in the study area was higher than the national figure (Sime, 2015). These researchers have also been reported that the fish consumption was seasonal following the fasting period. However, these works have not addressed the fish consumption pattern at commercial places (outside the home) and home consumption as family menu. The food consumption pattern can be one of the factor that affect the demand and sales of a particular food items.

For most people consuming food outside the home might not be preferred due to various factors such as personal preference of eating at home, income shared by family members, the attitude towards quality of product outside and fear related to health problems. Many argued that the outside food consumption at commercialplace can be affected by income and time constraints for preparing food and consuming, family size and economies of scale in preparing at home, perception of eating out, and cultural factors (Baker, (1980); pollak, (2011); Narine, &Badrie, (2007); Ali, &Nath, (2013)). Still these can be different for differing tastes and eating habits. In addition, the fish consumption pattern might be different for differing gender, age, education, family size, and marital status. For instance research by Rezende and Avelar concluded as "gender was not a major differentiating factor in determining eating out behaviors" (Rezende and Avelar, 2012). Moreover, the marketing factors that might affect fish marketing were not studied well. Therefore, the present research was conducted to fill these gaps considering one known fish producing area, Arba Minch Town in Ethiopia. In general the main purpose of this research was to assess the fish consumption pattern and marketing efforts of Arba Minch town, Gamo Gofa, Ethiopia.Thus, (i) the status of marketing efforts in effect at the study area to promote fish consumption and marketing have been described and (ii) the hypothesis that fish consumption status at commercial place is independent of demographic variables have been tested.

2. Methods and Materials

This research is descriptive by its nature where the figures and facts collected from the participants were presented as it exists in reality. Quantitative data was collected using five-point Likert scale (from 1 very low to 5 very high) questionnaire distributed to respondents selected from fish consumers at commercial fish handler's sites: hotels, restaurants, and small dining rooms in container, fisheries cooperatives restaurants. Using dropdown substitution method the researcher conveniently selected 120 consumers. In order to systematically reduce the error in sampling, the researchers first identified known fish handlers (hotels and lodges, restaurants, small dining rooms in container, and fisheries cooperatives sales outlets). Then the customer peek time was identified as lunch time (11:30AM-2:00PM) and from 5:00PM-6:30PM. These places and times were convenient to get large number of fish consumers. From the total 120 questionnaires, 115 questionnaires were correctly filled whereas the remaining 5 questionnaires were found incomplete. Data was presented using descriptive statistics (percentage tables, mean and standard deviation). In order to test the hypothesis, X^2(chi-square) test of independence and Cramer's V test of variables association were used.

3. Discussion and Results

Community Awareness about the Importance of Fish

Buyers considered different factors at different stages of purchase decision. Awareness of the consumer is the first stage of any new product adoption. Before a buyer accepts the product for regular use s/he should get the first product exposure (awareness). This exposure makes an individual to look for information that replied the what, why, how, how much and when questions about the product (Kotler, Wong, Saunders and Armstrong, 2005, P.287; Muddassir, (2016)). In this section the researchers discussed the community's awareness about importance of fish in insuring food security, level of awareness and sources of information about fish.

Awareness about Role of Fish in Ensuring Food Security

Table 1: Awareness of role of fish

Awareness about importance of fish in ensuring food security?	Frequency	Percent
No	14	12.2
Yes	101	87.8
Total	115	100.0

Source: Survey, (2017)

Based on the collected data, 87.8% of the respondents have awareness about the importance of fish in ensuring food security. This indicated that the communities have awareness with regard to the importance of fish in ensuring food security.

Source of Information about Fish

The respondents get to know about fish importance through the information they obtained from different sources mentioned in table 2 below.

Table 2: Source of information about fish

Source of information	Descriptive statistics					
	Yes	No	Total	P*	(1-P)**	Total
Newspaper	6	109	115	5.2	94.8	100
TV and Radio	19	96	115	16.5	83.5	100
Professionals	22	93	115	19.1	80.9	100
Word-of-mouth	45	70	115	39.1	60.9	100
Education	12	103	115	10.4	89.6	100
Internet	4	111	115	3.5	96.5	100

Source: Survey, (2017) *P = percent of Yes
**(1-P) = percent of No

The respondents reported that the potential sources of information that helped them to get information about fish were word-of-mouth, professionals, Tv and Radio, education, newspaper, and internet, respectively in the order of most frequently selected sources by the respondents. This concept related to the level of promotional activities undertaken by the marketers (fish handlers). Thus, the fish products were not promoted effectively through media.

Level of Community's Awareness

The level of awareness about the product plays crucial role in the buyers purchase decision. Awareness itself will not result in purchase rather leads the buyer to develop interest to find more information and know about the product, which may then evaluate and make a decision to purchase (Kotler et al, 2005, P. 287). In the study area, the level of community's awareness about the importance of fish remained low with the mean of 2.68 as indicated in the table 3. The majority (37.4%) of the respondents replied as their level of awareness is low followed by 25.2% who replied medium.

Table 3: Level of community's awareness

	Percent*					Descriptive Statistics	
Awareness about fish importance	Very Low	Low	Medium	High	Very High	Mean	Std. Deviation
	13	37.4	25.2	17.4	7	2.68	1.120

Source: Survey, (2017)
***N=115**

It can be concluded that the low community's awareness level might result in low fish consumption habit in the study area. This is consistent with the finding of Shahzad which revealed positive association between consumer's awareness and the product adoption. The individual with higherproduct awareness is more likely to adopt the product. In contrast, the lower consumer's awareness resulted in lower probability to adopt (Shahzad et. al. 2018).

Fish Consumption Pattern

Fish Consumption at Commercial Places

The data was collected conveniently from the fish consumers at primary commercial establishment specialized in fish menu like hotels, cooperatives sales branches, restaurants and small dining rooms. Though many factors like income, age, culture and etc. affects eating out, there is cultural association between eating out and gender (Can et al., (2015); Ali, Nath, (2013);Rezende and Avelar, (2012);Narine, Badrie, (2007)).

Fish Consumption

Difference by Gender and Age

In Ethiopia, there was a masculine perception that makes females at home. The researchers felt that this affected the result with regard to fish consumption pattern by sex. The result revealed that 87% of the respondents was male and only 13% was female. The number of males observed consuming fish at commercial establishments was larger than the numberof female.

Table 4: Gender and Age of the respondents

	Gender			Age		
Statistic	Female	Male	Total	15-24	25-54	Total
Frequency	15	100	115	32	83	115
Percent	13.0	87.0	100.0	27.8	72.2	100.0

Source: Survey, (2017)

However, the X^2-test of independence of gender category and fish consumption status showed statistically insignificant (($X^2(1)$ =3.095, $\alpha = 0.05$, P =0.079) association between the variables. Thus, the individual status of fish consumption at commercial establishments is independent of his/her sex category.

Age is another factor that affects the income of a person and consumption pattern outside the home. The data showed that the majority (72%) of the respondents aged between 25-54, and 28% of the respondents aged from an age 15–24. From this one can conclude that the number of fish consumers at the food commercial centerswas dominated by age range from 25-54, followed by persons aged from 15-24.Accordingly, the assumption was made if a person age level (category) associated with his/her fish consumption status at a commercial center. The test revealed that ($X^2(1)$ =.016,$\alpha = 0.05$, P =0.899) no statistically significant association was found between a person's age and his/her fish consumption level at outside.

Fish Consumption Difference by Education

Table 5: Education level of the respondents

Statistics		Frequency	Percent
Education level	Elementary School (1-8)	13	11.3
	Secondary & Preparatory (9-12)	26	22.6
	College Diploma	20	17.4
	First Degree	43	37.4
	Second Degree & Above	13	11.3
	Total	115	100.0

Source: Survey, (2017)

The data about fish consumption by education level of the respondents indicated that first degree holders, secondary and preparatory (grade -12) complete and college diploma holders take over the largest shares of the fish consumers at the commercial places, respectively. If there is relationship between education level and food consumption rate at outside the home, there would be an increase in a person's food consumption level with the increase in his/her education level. The test conducted with this sampled data publicized that there is statistically significant ($X^2(1)$ = 20.023, $\alpha = 0.05$, P = 000) relationship between a respondents education level and his/her fish consumption status at commercial places. However, the X^2 would not tell the strength of the association, so that the Cramer's V test of the strength of the association between the variables indicated was used and indicated the value of 0.417. The Cramer's V is always between 0 & 1. For interpretation 0.417 lies in a range between 0.25 and 0.75, which means moderate association exists between the two variables.

Fish Consumption by Marital Status and Family Size

Marital status is the demographic factor that determines a person's purchase decision and family consumption. Fish consumption is not different from this.

Table 6: Marital status and family size of the respondents

Marital Status	Descriptive Statistics	
	Frequency	Percent
Single	60	52.2
Married	53	46.1
Divorced	1	.9
Widow/er	1	.9
Total	115	100
Family size		
< 3	67	58.3
3-6	43	37.4
6-9	5	4.3
Total	115	100

Source: Survey, (2017)

Table 6 above indicated that the majority (52.2%) of the respondents was single, and 46.1% was married. This may leads to the conclusion that if fish consumption at outside the home is associated to the marital status. X^2 test of independence was conducted and exposed that ($X^2(1)$ = 0.017, $\alpha = 0.05$, P = 0.896). As a result, it can be concluded that there is no statistically significant relationship between a person's marital status and fish consumption status at commercial food centers.

The data about respondent's family sizerevealed that majority (54%) of the respondents reported less than 3 family members followed by a group of respondents (41%) with 3 to 6 family members. Taking this data, the 95% test of independence between family size and their fish consumption status at commercial place was conducted. The result of the test leads to the decision that not to reject the assumption. Because P = 0.311 ($X^2(1)$ =1.025) is greater than $\alpha = 0.05$, there is no statistically significant association between a person's family size and his/her fish consumption status at commercial centers. This can be true if all members of the family have their own income. The other way, if the source of family income depends only on a single person to be shared by all members of the family, their consumption level will be affected by the number of members.

Fish Consumption by Employment Type and Income

The consumption level of the respondents was also analyzed with regard to the difference in respondent's employment type (government, private, self-employed) and his/her income levels (low, medium and high).

Table 7: Employment type and Income of the respondents

Statistics	Employment Type	
	Frequency	Percent
Gov't	47	40.9
Privately employed	52	45.2
Self-employed	16	13.9
Total	**115**	**100**
Income	Frequency	Percent
601-1650	26	22.6
1651-3200	21	18.3
3201-5250	38	33.0
5251-7800	16	13.9
7801-10900	14	12.2
Total	115	100

Source: Survey, (2017)

The data in table 7 disclosed that private employees dominated the participants of the research by 45.2% succeeded by government employees with 40.9%. The data about income level of the respondents seems distributed in the same proportion in each category. Here also the assertion was made if the fish consumption level of the respondents is independent of their employment type and income level.

The test shown that income level ($X^2(1)$ =26.366, $\alpha = 0.05$, P =0.000) was statistically found significant. Hence, Income level (low and high) significantly associated with fish consumption level at commercial places. The Cramer's V for the test was 0.479, which indicates the existence of moderate association. A person with low income will consume less and a person getting high income is expected to consume more. However, there is no statistically significant association between employment type and consumption. Whether a person has employed in government, private or once own business does not affect his/her fish consumption at commercial places (($X^2(1)$ =1.287, $\alpha = 0.05$, P =0.525).

Overall Fish Consumption Pattern

Fish provides different nutritional values for family. It is customary that most families consume fresh fish. This enables family members to get important vitamins (D, A and B) and minerals (including calcium, iodine, zinc, iron and selenium) (FAO, 2016). The status of fish consumption determined by the frequency of fish consumption in any conditions, including fish in family menu, and fish consumption as compared to other equivalent food items (milk, eggs and meat).

Table 8: Overall fish consumption pattern

Descriptive Statistics	N	Mean	Std. Deviation
Frequency of Fish consumption	115	2.42	1.076
Including fish in family menu	115	2.12	1.001
Fish consumption compared to other equivalent foods	115	2.20	.975
Overall Fish consumption	115	2.64	1.086

Source: Survey, (2017)

The respondents replied that the regularity of their fish consumption was low (2.42). The extent of including fish in their family menu was report as low with average of 2.12. Compared to other equivalent foods (eggs, milk, and meat), the consumption of fish remains low (2.20). Overall, the fish consumption trend of the respondents averaged 2.64. This is very close to low rate. In conclusion, community in the study area has poor fish consumptionhabit.

Description of Fish Marketing Status

Marketing efforts in effect behind a product has crucial role in the success of the product and in affecting the demand level for the product. For instance use of different promotion mix boosts the sales of a product (Chaudhuri et al, 2018). In this section, different marketing issues will be discussed in the context of fish consumer. These includes the product quality, qualities of equipment and technology used for production and fish handling mechanisms, promotion efforts, fish distribution and supply, fairness of fish price and consumer's satisfaction with the fish marketing.

Table 9: Summary of Statistics on Marketing Efforts

No.	Marketing Efforts	n	Mean	Std. Deviation
1.	Perceived Quality of Production Facilities	115	2.43	.757
2.	Fish Supply and Distribution	115	2.55	.638
3.	Fish Promotion	115	2.43	.624
4.	Fish Price	115	3.86	.596
5.	Fish Quality	115	3.10	.635
6.	Consumer Satisfaction	115	2.86	.762

Source: Survey, (2017)

Perceived Quality of Production Facilities

The respondents were asked to rate the quality of different facilities (equipment, consumption premises, fish carrying facilities, fish handling and processing tools, use of modern tools, and appropriateness and quality of fish store that are used by fish handler as indicated in the table 9 above. The data revealed that all the issues raised under this question rated 2.43. This means the fish production facilities used by the fish marketer were of low quality: low quality equipment, not clean consumption premises, poor quality carrying, handling and processing facilities, inappropriate and low quality storage and traditional tools. The use facilities of low quality deteriorate the expected customer value, particularly at the service consumption point with high customer contacts. Very critically, at food consumption point's consumer directly correlates the quality with health problems. This consumer experience reduces the consumer repurchase intention.

Fish Supply and Distribution

Product supply and distribution are among important factors affecting the success of the product. Availability of the product at the right time and right customer place affects both demand of the product and the purchase decision of the buyer. The product on the shelf that consumer see affects the choice of the product over the substitute products. Product distribution supports the purpose of promotion and sales. Therefore, the researchers investigated the supply and distribution rate of fish in the study area. The respondents reported that the supply and distribution of fish in the study area was low (mean = 2.55). Thus, the availability of the fish product at consumer's destination area,accessibility of fish all the time and the availability of different supplier option were low. Moreover, the participant disclosed that they cannot find fish at the right time, sufficient quantity, and fair price. From this the researchers conclude that the fish supply in the area needs improvement to make it accessible at the time, place and quantity, the users prefer.

Fish Promotion

Promotion is necessary to improve the product demand and sales through enhancing awareness, reminding and persuading the consumer (Familmaleki, Aghighi, Hamidi, 2015). For these purposes, marketers are expected to prepare and enforce the messages at different stage of consumer buying decision and product life cycle.

The data revealed that the level of fish promotion of the study area was low (2.43). Availability of information about fish, clear and understandable message, appropriate communication media and frequency of communication were obtained low rate responses while awareness about the importance of fish and known source of information got medium rate responses. From this, it can be concluded that the fish promotion activities required marketer's emphasis as an area of improvement.

Fish Quality

Fish has been consumed fresh in Ethiopia. This is also the same for the study area as indicated by the respondents. The respondents replied medium (mean = 3.10) (see table 9) for the question related to the freshness of the fish and the overall fish quality.The fish quality is described by the spoilage, fragrance, durability and damage to fish physical appearance (redness, shrink, loss of moisture). Therefore, the researchers concluded that the fish quality at the study area was good as the consumer can found fresh fish with no spoilage, bad fragrance, better durability and no physical damage.

Fish Price

As indicated in table 9, the responses of the participants for questions related to the rate of fish price were high. The response averaged 3.86. From this the researcher concluded that the fish price in the study area was high.

Fish Consumer Satisfaction

Table 9 showed that the respondents were moderately (2.86) satisfied consuming fish. This can be related to the availability of fresh or good fish quality that might compensate the satisfaction with high price, and low level of other marketing efforts. Moderate consumer satisfaction affects the future demand for the product and it wouldn't be a guarantee for the success. Hence, it requires improvement.

4. Conclusion

Fishery sector has a contribution to the socio-economic development of the community through offering employment opportunities in both primary and secondary fishing activities, source of family income, and family food menu. However, fishery practices in Ethiopia is regarded as traditional and dominated by small scale primary fishing activities and very few secondary marketing activities (retailing, distribution, transporting, storing and processing). Though the demand for fish shows increase, the consumption level is low and the pattern is limited to some fishery practicing areas and major cities. This paper investigated the status and pattern of fish consumption at commercial places and home among different demographic categories in Arba Minch town, which is well-known with fish resources. It also described the marketing efforts in effect to promote fish consumption and marketing in the study area. The results indicated that fish consumption status at the study area was low. The fish consumption patterns at commercial establishments were statistically found indifferent for gender (P =0.079), age (P =0.899), marital status (P = 0.896), employment type (P =0.525), and family sizes (P = 0.311). Thus, using 95% confidence X^2-test of independence, there were no statistically significant association found in between these demographic variables and the consumption pattern.The test showedsignificant moderate associations between education level (P = 0.000, Cramer's V=0.417), income (P = 0.000, Cramer's V =0.479) and consumption pattern. The fish marketing of the study area was described by low quality of fish production and

handling facilities, low promotion and distribution efforts, high price, fresh fish and moderate customer satisfaction. These revealed that current status of fish marketing will not guaranty the sustainability of fish product and its consumption.

5. Recommendation

The researcher suggested that those commercial food establishments can enhance the sales benefits of fish by promoting fish focusing on its nutritional and health value. This can be achieved through using outdoor promotion tools, diversifying the fish products presented in their menu all the timeand preparing food contest. In general marketing activities related to fish needs emphasis from all the actors.

6. Limitation and Future Research Implication

The current research fail to discuss the factors that affect fish consumption and marketing other than marketing efforts like cultural variables, religious variable, and consumer preferences specific to the study area. It did not used statistical models important to test the relationship and the strength of association between marketing strategies and consumption level. Hence, the title is still open for further study.

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