

# Students' Fish Consumption Pattern; A Case Study of Alvan Ikoku Federal University of Education, Owerri, Imo State

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## ABSTRACT

Investigation of students' fish consumption pattern (fish type preference, frequency of consumption and preservation type) of residents in five hostels of Alvan Ikoku Federal University of Education (AIFUE) was done using descriptive survey. Well-structured questionnaire were administered to male and female in their hostels using random sampling method to pick respondents from as many rooms as possible. The data obtained were analysed using employing SPSS statistical software version 29.0.2.0. Results reveal that for purchase and consumption, fresh fish (32.0%) was the most with *Clarias gariepinus* (46.7%) and *Scomber scombrus* (28.0%) as fish type most preferred. Weekly consumption of fish in however form (fresh, smoked, dried, canned etc.) shows that due to cost, schedule, taste preference and health reasons, consumption is done the most at 1 -2 fishes per week (57%, 58.6%, 47.6% and 66.6% respectively), but seldom due to the fish availability (46.6%) and hardly as a consequence of peer influence (22.2%). A positive correlation was noted for availability (r-value at .139) and peer influence (r-value at .122) on the time of fish consumption while a negative correlation was seen for schedule (r-value at -.081) and taste preference (r-value at -.236). In the same vain, a negative correlation (-.113) with non-significant values (0.168<sup>c</sup>) was recorded for cost and place of purchase. School market and local market were places patronized for fish for reasons of schedule, taste preference and health reason (32.6%, 28.6% and 41.7% respectively) and (58.7%, 59.5% and 52.1% respectively). Respondents (36.7%) agreed that the availability of fish was satisfactory, on the other hand, 53.3% strongly agreed, 26.7% agreed and as few as 12.0% and 1.3% of the respondents disagreed and strongly disagreed respectively to fish being more nutritious. While 33.3% agreed to fish being their major diet, 13.3% disagreed. The challenges to fish consumption included high cost, lack of storage facilities, unpleasant smell which got percentage frequencies of 46.7%, 38.7%, 30.7% respectively and the least for fear of bones.

**Key words;** Students, fish consumption, preference, Availability, Alvan Ikoku Federal University of Education

## INTRODUCTION

Fish is widely consumed in many parts of the world by humans due to its high content of good protein, characterized by an excellent amino acid composition and easy digestibility (Adel et al., 2019). Fish is an important dietary component of people around the world and represents a relatively cheap and accessible source of high-quality protein for poorer households (Adeyeye et al., 2015). It is one of the most widely consumed foods in the world, and it is only becoming more popular over time (Shahbandeh, 2023). In developing countries, Nigeria in particular, fish is a relatively cheap and an accessible protein source, suitable for complementing high carbohydrate-based diets of West African population (Adeyeye, et al., 2015; Ikutegbe & Sikoki, 2014).

Literature shows that the forms of processing of the purchased fish and food products were frequently in the form of smoked fish (19%), frozen fish (18%) and fresh fish (17%), whereas canned fish and live fish are purchased, respectively, by 11% and only 1% of students. The study also revealed that culinary preferences (60%), nutritional and health value (45%), price (44%) and the easiness to prepare (39%) turn out to be the most significant factors determining fish and fish products consumption (Kula and Śmiechowska, 2016). In tropical regions, conservation of fresh fish remains a problem because of the lack of adequate infrastructures, and environmental and climatic conditions that contribute to its spoilage and losses within few hours (Anihouvi, et al., 2012). Some products commonly used by students are fish, in their frozen state (cod, tuna, shiner or scumbia) and their smoke dried state (cat fishes and tilapia). This study investigated students' fish consumption pattern (fish type preference, frequency of consumption and preservation type) of those resident in five hostels of Alvan Ikoku Federal University of Education. There is currently a paucity of information of this sort, which will help inform marketers, government and other stakeholders on fish type to sell within the immediate environment, import the most and ensure consumer safety respectively. The school environment, a community on its own, provides a unique context influenced by regional preferences, cultural factors, and availability of fish. This research highlights and allows for insights into how local factors impact fish consumption and perception.

## METHODOLOGY

### Area of study

Alvan Ikoku Federal University of Education is an institution of higher learning situated along the banks of Nworie River. The school is located along Orlu road, having common boundary with Federal University of Technology Teaching hospital, Owerri. It has within its environment many hostels accommodating students and numerous food restaurants and eat-outs. Students within the hostels besides from consuming food cooked outside, predominantly cook within the hostel kitchen, making use of fish products that must be preserved in one form or the other, considering the present economic situation of Nigeria. Owerri municipal, a region within which this school is located do not exhibit any form of taboo against fish consumption.

### Design of the study

Descriptive survey design was adopted according to (Ofoha et al., 2009). This afforded the researchers the opportunity to extrapolate necessary information from the respondents after randomly sampling students resident within the numerous hostels of the university.

### Instrument and method of data collection

Well-structured questionnaire were administered to 150 randomly sampled students resident in the different hostels (B,C, D, F and G) constituting of two male hostels and three female hostels to elicit information on which fish is preferably consumed, how often it is consumed, in what form it is preferred and what challenges inhibited its consumption in school. Samples of 30 students per hostel were randomly done whereby respondents from as many rooms as possible were involved in the study. Questionnaires were distributed by the researchers and their resource persons (constituting of students who had been properly educated on the objectives of the research), explanations were done where needed and the duly filled questionnaires collected on the spot to reduce incidence of loss. Distribution of questionnaires happened between December 2025 and February 2026 with the printout questionnaires having an attached appendix showing details of these fishes talked about in their picture form. Permissions were initially sought and received from the students' Affairs Units of the institutions to engage students. This was also translated to the hostel wardens who allowed for the distribution of questionnaires in the hostels. Ethical considerations were observed as only students within these hostels who were willing to respond to the questionnaire after explanations were randomly selected as respondents.

### Statistical Analysis

Data obtained were analysed using descriptive tools of frequency tables, cross tabulation and presented using charts and tables. Few of the analyses were cross tabulated. Analysis was done employing SPSS statistical

software version 29.0.2.0 since the responses were subjective in nature and many of the questionnaire items had options of multiple responses.

## RESULTS

### Demographic data of respondents

Research has shown over the years that consumption of fish has economic, health, medicinal and various other benefits. Fish has also been reported as an animal product containing important nutrients essential for keeping consumer’s hearts and brain healthy (Adeosun, 2006.). Results show that Bio data of students indicated sixteen departments were represented (Fig 1) and constituted of 40% male and 60% female drawn from six hostels (Table 1). Information obtained reveal that 43.3% of the students in school hostels were between the ages of 21-25 years followed closely by students within the age bracket of 26-30 and only 1.3 % above 30 years. This is evident as seen in the level of students as a majority (41.3%) were in 200 level and the least number of respondents being from 100 level (8.7%).

Table 1; Demographic information of respondents

Variable	Options	Frequency	Percent (%)
<b>Age of Respondents</b>	<b>16-20</b>	41	27.3
	21-25	65	43.3
	<b>26-30</b>	42	28.0
	<b>Above 30</b>	2	1.3
	<b>Total</b>	<b>150</b>	<b>100</b>
<b>Gender</b>	<b>Male</b>	60	40
	<b>Female</b>	90	60
	<b>Total</b>	<b>150</b>	<b>100</b>
<b>Level of Study</b>	<b>100</b>	13	8.7
	<b>200</b>	62	41.3
	<b>300</b>	42	28.0
	<b>400</b>	33	22.0
	<b>Total</b>	<b>150</b>	<b>100</b>
<b>Hostel</b>	<b>B</b>	30	20.0
	<b>C</b>	30	20.0
	<b>D</b>	30	20.0
	<b>F</b>	31	20.7
	<b>G</b>	29	19.3
	<b>Total</b>	<b>150</b>	<b>100</b>

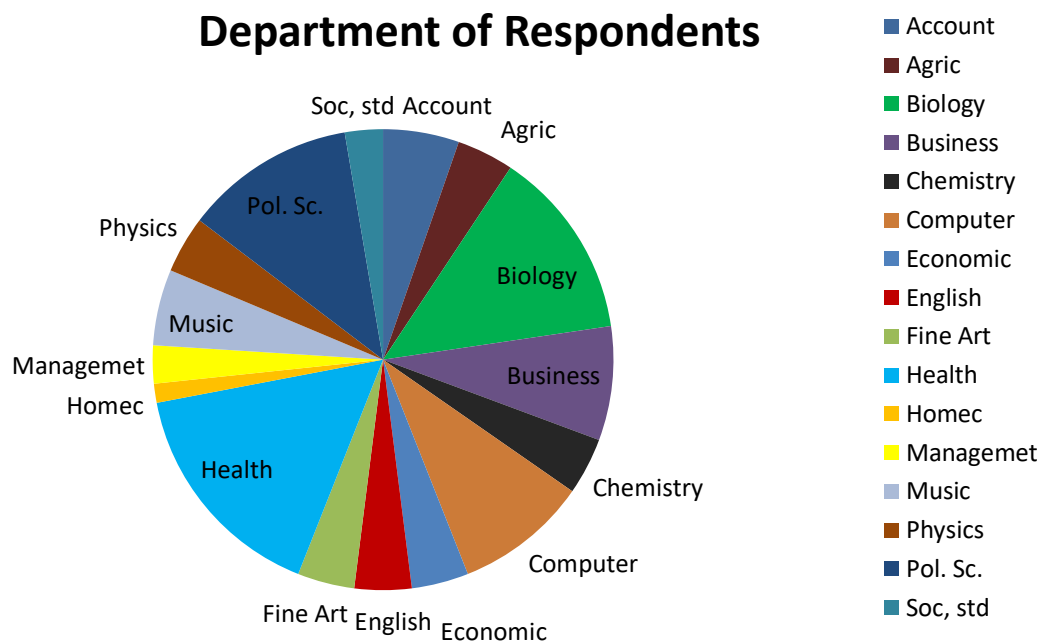


Fig 1; Chart showing a cross section of departments of respondents

### Fish type preference

Results for fish type preference (Table 2) revealed that preference was most for fresh fish (32.0%) which was indicated as *Clarias gariepinus* (46.7%) and *Scomber scombrus* (28.0%) for fishes most preferred for purchased and consumption. Only 4.0% of respondents had no preference for fish whereas 2.0% preferred to purchase *Gymnachus niloticus*. While reasons for preference of these fishes and their purchase varied, taste and nutritional value of the fish stood out amongst other reasons with a percentage value of 52.7% and 35.3% respectively. On the other hand, it is worthy of note that Convenience/ease to prepare (8.7%) and Habit/culture (8.0%) were the least of the reasons for fish preference.

Table 2; Frequency of responses for fish type preference

Variable	Options	Frequency	Percent (%)
<b>Preference of fish type</b>	Preference for fresh fish	48	32.0
	Preference for frozen fish	43	28.7
	Preference for smoked fish	44	29.3
	Preference for dry fish	27	18.0
	Preference for canned fish	11	7.3
	Preference for none	6	4.0
<b>Purchase preference</b>	<i>Trachurus trachurus</i>	26	17.3
	<i>Scomber scombrus</i>	42	28.0
	<i>Gadus morhua</i>	23	15.3
	<i>Clarias gariepinus</i>	70	46.7

	Tilapia zilli	20	13.3
	Heterotis niloticus	21	14.0
	Gymnarchus niloticus	3	2.0
<b>Reason for preference</b>	Taste	79	52.7
	Price affordability	22	14.7
	Convenience/easy to prepare	13	8.7
	Nutritional value	53	35.3
	Availability around the Hostel	19	12.7
	Habit/culture	12	8.0

**Frequency of fish consumption**

Weekly consumption of fish in however form (fresh, smoked, dried, canned etc.) shows that due to cost, schedule, taste preference and health reasons, consumption is done the most at 1 -2 fishes per week (57%, 58.6%, 47.6% and 66.6% respectively), but seldom due to the fish availability (46.6%) and hardly as a consequence of peer influence (22.2%) even as it revealed a total response of only 9 for all time intervals. On a general outlook, weekly consumption showed a positive correlation to all factors influencing its consumption even as fish is hardly consumed daily for whatever factor that must have prompted the frequency of its consumption at other times (Table 3). Results also reveal that fish is consumed the highest during lunch and dinner due to schedule (41.3% each), lunch due to taste (42.9%) and during dinner due to health reasons. Fish is however scarcely consumed during breakfast and seldom as a snack/anytime. A positive correlation was noted even as availability (r-value at .139) and peer influence (r-value at .122) has little effect on the time of fish consumption while a negative correlation was observed for schedule (r-value at -.081) and taste preference (r-value at -.236) of the consumers. In the same vain, a negative correlation (-.113) with non-significant values (0.168<sup>c</sup>) was recorded for cost and place of purchase. This is shown in the percentage frequencies of place of purchase which revealed that school market and local market were places patronized for fish for reasons of schedule, taste preference and health reason (32.6%, 28.6% and 41.7% respectively) and (58.7%, 59.5% and 52.1% respectively), where the former are percentage frequencies of responses for school market while the latter is for local market.

Table 3; Cross tabulated results on factors influencing fish consumption and consumption parameters

		<b>Factors that Influence fish consumption</b>					
<b>Consumption Parameters</b>		<b>Cost</b>	<b>Availability</b>	<b>Schedule</b>	<b>Taste preference</b>	<b>Health reasons</b>	<b>Peer influence</b>
<b>Weekly consumption</b>	<b>Daily</b>	9.5%	0.0%	10.8%	16.6%	2.0%	0.0%
	<b>3-5 times a week</b>	0.0%	13%	6.5%	11.9%	4.1%	22.2%
	<b>1-2 times a week</b>	57%	46.6%	58.6%	47.6%	66.6%	22.2%
	<b>Once in two weeks</b>	19.2%	6.6%	13.0%	21.4%	18.7%	22.2%
	<b>Rarely</b>	14.3%	33.3%	10.8%	2.3%	8.3%	33.3%
	<b>Total responses</b>	21	15	46	42	48	9

<b>R-value</b>		.040	.138	-.081	-.236	.058	.122
<b>(Approx. Sig.)</b>		0.626	0.091 <sup>c</sup>	0.324 <sup>c</sup>	0.004 <sup>c</sup>	0.481 <sup>c</sup>	0.138 <sup>c</sup>
<b>Time of Fish Consumption</b>	<b>Breakfast</b>	14.2%	13.3%	8.7%	11.9%	4.2%	0.0%
	<b>Lunch</b>	19.1%	40.0%	41.3%	42.9%	33.3%	33.3%
	<b>Dinner</b>	38.1%	26.7%	41.3%	33.3%	41.7%	44.4%
	<b>Snack/anytime</b>	28.6%	20.0%	8.7%	11.9%	20.8%	22.2%
	<b>Total responses</b>	21	15	46	42	48	9
	<b>R-value</b>	.081	-.038	-.101	-.129	.124	.074
	<b>Approx. Sig.</b>	0.323 <sup>c</sup>	0.643 <sup>c</sup>	0.217 <sup>c</sup>	0.116 <sup>c</sup>	0.130 <sup>c</sup>	0.369 <sup>c</sup>
<b>Place of purchase</b>	<b>School market</b>	38.1%	20.0%	32.6%	28.6%	41.7%	33.3%
	<b>Local market</b>	61.9%	46.7%	58.7%	59.5%	52.1%	44.4%
	<b>Supermarket</b>	0.0%	13.3%	0.0%	12.4%	2.1%	0.0%
	<b>Street Vendors</b>	0.0%	20.0%	8.7%	9.5%	4.2%	22.2%
	<b>Total responses</b>	21	15	46	42	48	9
	<b>R-value</b>	-.113	.191	-.004	.056	-.136	.078
	<b>Approx. Sig.</b>	0.168 <sup>c</sup>	0.019 <sup>c</sup>	0.958 <sup>c</sup>	0.495 <sup>c</sup>	0.097 <sup>c</sup>	0.343 <sup>c</sup>

Note; Approx. sig. is by Pearson’s R Correlation based on normal approximation

### Preservation type

If fishes were to be purchased in quantity, they needed to be stored in the right form and as such, the results revealed that fish were purchased in the most minimal quantity (1-2 fish) and mostly as buy and use with the most responses especially for the reasons of better taste (26.7%), cost (26.9%) and hygiene (25.0%) or sundried if quantities were not entirely utilized basically for the purpose of hygiene, ready availability and better taste (31.5%, 18.5% and 18.5% respectively) if the quantity purchased is not entirely utilized. In few cases, fish are purchased in 3-5 quantity and basically sundried as a means of storage. Hardly was fish purchased in a quantity more than 1-2 (Fig 2). Ease of use appeared to be the least reason for preservation of fish in the hostels with the least responses for all the preservation methods listed in the course of the research. This is portrayed in Fig 3 which revealed that most respondents do not store fish, followed by often storing and the least being that they don’t use fish.

Table 4; Cross tabulated values for methods of fish preservation used in the hostels and reasons for their preference

<b>Method of Fish Storage</b>	<b>Reasons for preference of preservation type</b>						<b>Total responses</b>
	<b>Longer shelf life</b>	<b>Better taste</b>	<b>Hygienic</b>	<b>Cheaper</b>	<b>Easy to use</b>	<b>Readily available</b>	
Refrigerator/Freezer	0.0%	25.0%	50.0%	0.0%	25.0%	0.0%	<b>04</b>

Shared hostel freezer	57.1%	14.3%	14.3%	0.0%	0.0%	14.3%	<b>07</b>
Sun drying	11.1%	18.5%	31.5%	16.7%	3.7%	18.5%	<b>54</b>
Buy and use	3.7%	26.7%	25.0%	26.9%	2.8%	14.8%	<b>108</b>
No storage	0.0%	20.0%	20.0%	0.0%	0.0%	60.0%	<b>05</b>
<b>Total</b>	<b>14</b>	<b>42</b>	<b>48</b>	<b>38</b>	<b>6</b>	<b>30</b>	

**Fish purchased at a time and method of storage**

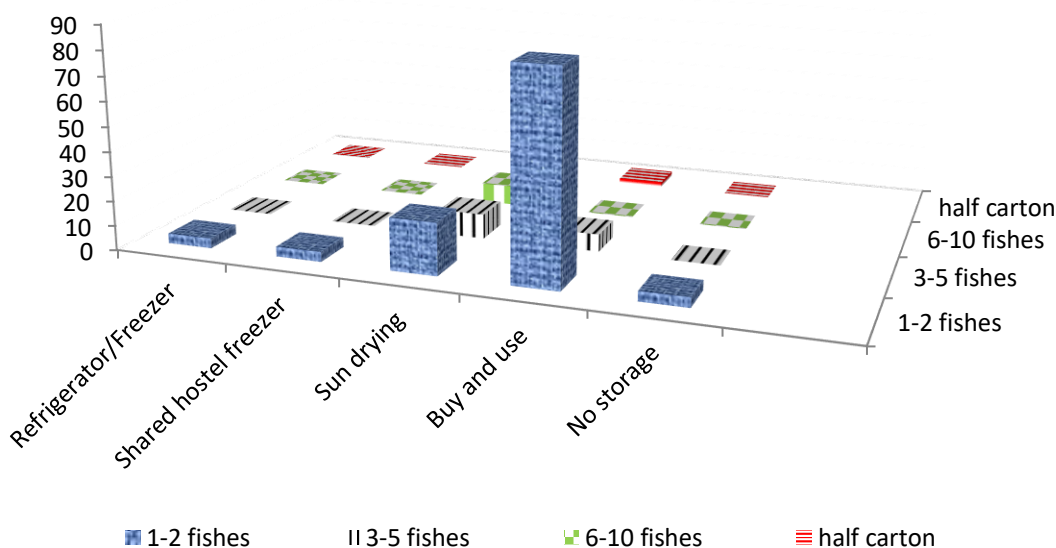


Fig 2; Quantity of fish purchased at a time and method of storage

**Frequency of fish storage for use in school**

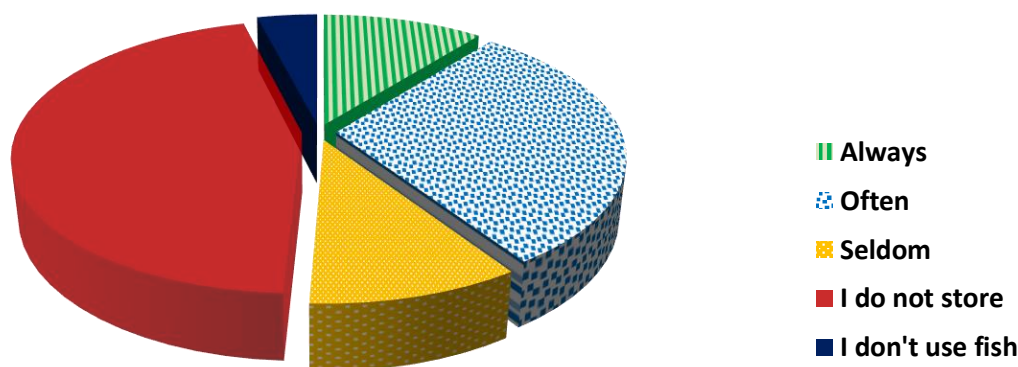


Fig 3; Chart showing the extent students store fish in the hostel for use in school

**Students' attitude to fish consumption**

Finally, students' attitude to fish consumption reveals that students strongly agreed to fish being a major diet, more nutritious and that its availability around the school environment is satisfactory (Fig 4). 36.7% respondents agreed that the availability of fish was satisfactory followed closely by 29.3% who strongly agreed to the assertion. Only 1.3% strongly disagreed to the satisfactory availability of fish within the school environ. On the other hand, with regards to fish being more nutritious, 53.3% strongly agreed, 26.7% agreed and as few as 12.0% and 1.3% of the respondents disagreed and strongly disagreed respectively. 33.3% agreed to fish being their major diet compared to meat while 32.0% of the responses were neutral to the assertion. However, 18.7%

strongly agreed with 13.3% of the respondents disagreeing to fish being a major part of their diet. The challenges to fish consumption (Table 5) includes high cost, lack of storage facilities, unpleasant smell which got percentage frequencies of 46.7%, 38.7%, 30.7% and the least, fear of bones and preparation time (6.7% each). Hostel policy on cooking and storage of food also contributed to the constraints (12.0%).

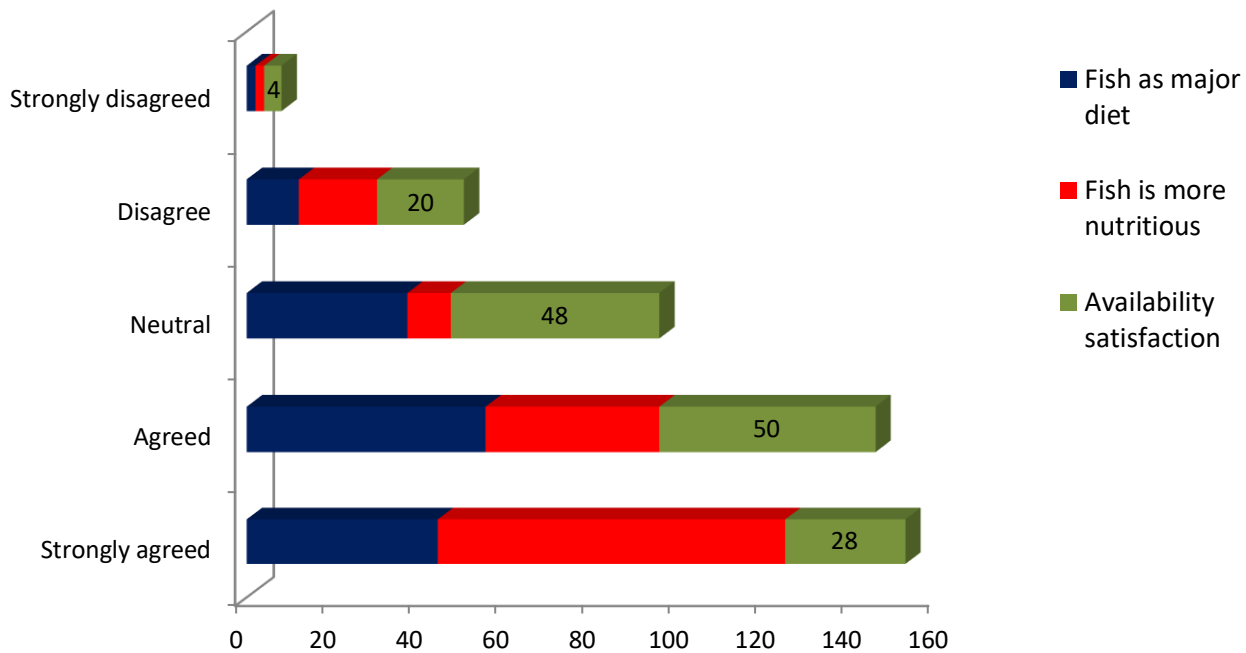


Fig 4; Bars showing general attitude of students towards fish consumption

Table 5; Percentage responses on challenges limiting the consumption of fish

Challenges and constraints	Frequency (%)		Total Responses
	Yes	No	
<b>High Cost</b>	46.7	53.3	150
Poor availability	10.7	89.3	150
<b>Lack of Storage facility</b>	38.7	61.3	150
<b>Unpleasant smell</b>	30.7	69.3	150
<b>Preparation time</b>	6.7	93.3	150
<b>Fear of bones</b>	6.7	93.3	150
<b>Hostel policy</b>	12.0	88.0	150
<b>Quality/spoilage</b>	56.7	43.3	150

## DISCUSSION

Research has shown that lack of quick storage facilities and price variation are major constraints to availability of fish (Abiodun and Abiodun, 2021). Preference mostly for fresh fish (32.0%) being *Clarias gariepinus*, *Scomber scombrus* (28.0%) and *Trachurus trachurus* according to their preference gives a general view of the most preferred fish for purchased and consumption. Reasons for this selection are evident in the research as

being for their taste and their nutritive content. This may mean that the compositions of student in Alvan Ikoku Federal University of Education are highly enlightened on the positives to consuming fish. Clearly, only 4.0% of respondents had no preference for fish and the least percentage of respondents, for Habit/Culture show that there is almost no bias (taboo) in fish consumption within the locality. This agrees with the study of Abiodun and Abiodun (2021) which revealed that majority of the students in Kwara State were aware of the high nutritious value of fish. Likewise, Oyibo, et al (2020) established that taste of fish has a coefficient of 1.31 showing a positive relationship on consumption at 10% level of significance, implying that every unit increase in the value of taste will lead to an increase of 1.31 units in fish consumption.

Robert and Juan (2012) in their submission reported that fish is more consumed than beef in Imo State, in the Southern part of Nigeria. The weekly consumption of fish which revealed that it was consumed once or twice in the week was basically due to cost and seldom due to availability as revealed in a positive correlation between availability and time of consumption. Owerri is an environment that harbours numerous students, business persons and civil servants. It is an environment that is seen buzzing with entertainment, fish being one of its highlights (in the form of point and kill or in the grilled form) and basically *Clarias gariepinus* (catfish), for persons seeking leisure or its frozen counterpart, now grilled or fried- *Scomber scombrus* (scumbia). Results reveal that the consumption is mostly during lunch and dinner due to schedule and closely due to taste and health reasons. Obviously, every opportunity presented for consumption of a form of protein was seized, and seized by fish. School market and local market which are close to the school environment aided in ease and increased purchase of these fishes. This result negates the findings of Abiodun and Abiodun (2021) who asserted that the reduced fish consumption which was noted could be associated with low availability of fish in the region as 14% of the respondents showed that consumption of fish was low due to the availability of other alternatives and the manner fish is usually displayed for sales. Accordingly, respondents in a very large proportion signified their willingness to eat more fish when its availability increases. Oyibo, et al (2020) confirmed that preference for fish was mostly from places that prepare fish with beautiful value additions, thus patronage in the southeast was more from eateries, joints, and bars among others to enjoy more palatable taste of fish in desired forms. In addition, Can, et al. (2015) reported taste, religion, household size and age of family members as significant factors at 95% confidence interval in their investigation into the factors influencing purchase decision of sea food.

Maintenance of fishes commonly seen in our local markets requires the availability of consistent supply of electricity and availability of refrigerating devices at all times (Onyeonula et al., 2024b). In tropical regions, conservation of fresh fish and even locally processed ones remains a problem because of the lack of adequate infrastructures, environmental and climatic conditions that contribute to its spoilage and losses within few hours or weeks (Anihouvi, et al., 2012; Onyeonula et al., 2024a). The results revealed that fish were purchased in the most minimal quantity (1-2 fish) and mostly as buy and use or sundried for quantities that are more. This was also reflected in the method of storage (do not store fish- Fig. 2) occasioned by the need to maintain taste and cost indicating that there was hardly a good advanced way of fish preservation within or around the hostel. Despite the fact that consumption of fish is on the positive, preservation still remains a bottleneck which in a long-run reduces intended quantity of consumption and nutrient availability especially for young growing minds. This agrees with the findings of Abiodun and Abiodun (2021), that among other factors, lack of quick storage facilities is a major constraints to availability of fish.

The students' attitude to fish consumption reveals that students strongly agreed to fish being a major diet, more nutritious and that its availability around the school environment is satisfactory (Fig 4). However the most challenges to its consumption included high cost, lack of storage facilities, unpleasant smell which negates the assertion initially provided that cost was not a factor for its preference. This indicates that students have sufficient knowledge of the benefits of fish consumption and are ready to consume as availability is not a challenge, but such positive interest are limited in ways. This agrees with the findings of Abiodun and Abiodun, 2021 where they noted that majority of their respondents (students) agreed to the option that public consumption of fish is satisfactory (29%) and 22% of them were of the opinion that it is affordable and it should be consumed often. Although majority of the respondents from the findings of Dalhatu and Ala (2010) were aware of high nutritious value of fish, they still ate more beef than fish.

## CONCLUSION

Fish, which is a commodity of high nutritive value especially for the growing age bracket constituting of students of high institutions is appreciated by the students and consumed despite the constraints faced as a result of its purchase and preservation. This is indicated in the fact that the students buy in small quantities and consume immediately. Availability of fish around the school environment was also impressive as it was never a constraining factor to fish consumption. Cost however limited its efficient purchase and usage. It is recommended that other species of fish be readily available around the school area and fish market in particular be established within the town as Imo state harbours numerous high institutions/ students of growing age. Government and other stakeholders should also device means of subsidizing the prices of fish especially within the school community to allow for more patronage. School authority should provide cold rooms within its vicinity to encourage bulk buying and storage so as to reduce cost of purchase for students.

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