

## Comparative Analysis of Fish Farming Information Needs among Fish Farmers in Lagos and Osun State, Nigeria

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### Abstract

*Despite government efforts to boost fish production, there still exist a wide gap between demand for fish and domestic supply in Nigeria. This study aims to analyse the fish farming information needs among fish farmers. This study was conducted in the Lagos and Osun States. The population of the study consists of all registered fish farmers both male and female, with functional fish farms and who are into table size fish farming in Lagos and Osun States, Nigeria. A multistage sampling procedure was employed for the selection of 300 respondents for this study. The data for this study was collected from the respondents using a well-structured questionnaire and interview schedule while the data obtained was subjected to both descriptive and inferential statistical tools. Descriptive statistical tools employed include; frequency counts, percentages and means, while the inferential statistical tool used for testing the stated hypothesis was t-test. The study identified that the fish farmers in the different region have distinct and specific information needs while both groups are faced with common constraints such as high price of inputs, unavailability of credit facilities and limited market. The t-test result shows significant disparities in the information requirements between the two groups. It was recommended that customized information packages should be developed for the fish farmers based on their sociodemographic characteristics and specific needs.*

**Keywords:** Comparative analysis, fish farming, information needs, fish farmers

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### Introduction

Nigeria commands a place of pride in fish production in Africa, ranked 64th among other countries in fish consumption (Ashley-Dejo *et al.*, 2019) and second to Egypt in terms of fish production (FAO 2020). This advance in fish production has been possible due to substantial increase in inland fish production, particularly pond aquaculture, which is considered as the fastest growing fishery subsector in Nigeria (Ashley-Dejo *et al.*, 2019). Bolorunduro, (2016), observed that Nigeria is the largest aquaculture producer in south of the Sahara. The country fishery industry is a huge employer of labour with almost 2.08 million people as service providers (Oluwatayo and Adedeji, 2019). Fish farming is an important agricultural activity in Nigeria contributing to the country's economy, food security and sustainability and satisfying the global demand for fish products. In Nigeria, the role of fish farming in achieving household

and national food security and poverty alleviation cannot be over-emphasized (Salau, *et al.*, 2014). In recent years, increased knowledge and awareness of human requirements for healthy growth have focused increasing attention on the unique roles of livestock and fisheries in developing rural economies in tropical Africa which involves the development of agriculture. Fish farming, an artificial method of raising fish for human consumption is an ancient practice that can still provide profitable means of livelihood for both rural and urban dwellers (Salau, *et al.*, 2014). Fish farming is one of the major components of agricultural activities playing a significant role in nutrition, foreign exchange earnings, a viable source of food and a source of income to the fish farmers. It contributes to the development in the areas of employment with over 41 million people worldwide, the vast majority of whom live in developing countries (Wuyep & Rampedi, (2018). Similarly, FAO (2020) posited that aquaculture and fisheries combined accounted for 17% of animal-source protein for human consumption.

Fish farming offers enormous opportunities for creating employment, generating revenue, reducing poverty, and enhancing food security (Wuyep & Rampedi, 2018). Due to its high protein content and the fact that it contains vital nutrients for boosting the health of persons with illnesses like cardiovascular diseases and others, fish is a common food in every family in Nigeria. Fish farming generates employment directly and indirectly in terms of people employed in producing fishing output and other allied businesses. It also generates income for all categories of people involved in fish farming and thus contributes to the national income. Compared with livestock, it requires less space, time, money and has a higher feed-conserving rate (Nwakuche *et al.*, 2019). Fish farming is regarded as a key agricultural and food-producing sector throughout the world however, the growth recorded is still very poor which makes it difficult to realize the major goal of fish farming in Nigeria which is to improve our local fish production due to a lack of necessary and needed technical information as well as a lack of basic knowledge in the science of fish farming that will enhance high productivity. Fisheries sector contribute about 1.2 million metric tonnes, amounting to 0.48% to Agriculture Gross Domestic Product (Oluwatayo and Adedeji, 2019). Fish catch and production are not keeping pace with growing demand due to rapid population and the country is witnessing great shortage of fish production which is increasing daily due to rapid growth of human population. To salvage this situation, development of fish production through fish farming is mandatory. Throughout history, agriculture has been known to be one of the oldest industries among human beings and it also remains one of the main pivots on which human health stands. Protein is available from many sources and is invaluable to human health. One of the sources of protein in the human diet is animal protein commonly obtained from meat. Studies have reported an increasing shortage of animal protein, especially meat due to factors beyond consumers' affordability (Ijatuyi 2010; Adefalu *et al.* 2013).

Zilberman *et al.* (2012) stated that among other things in recent past, increased population has encouraged the drastic changes in livestock consumption and production patterns, therefore paving the way for what can be referred to as "food revolution". This implies that other sources of protein intake have to be sought for, of which fish is the most common. Olaoye *et al.* (2016) discussed that fishery continues to maintain its crucial position through its contribution to agriculture's share of Gross Domestic Product in Nigeria. The rapid increase in the human population of Nigeria has resulted in a huge increase in the demand for animal protein which is essentially better in quality than plant protein and contains all essential amino acids for body

growth (Awoyemi and Ajiboye, 2011). The average protein intake in Nigeria which is about 19.38 g per caput consumption per day is far below FAO requirement of 75 g per caput consumption per day. The contribution of 7g from animal source is below recommended minimum of 35 g per caput consumption per day expected from animal products (Oladimeji *et al.*, 2014). The average Nigerian consumes roughly 41% of their total protein from fish, which is less than the average global intake of 13.3 kg per person per year (Balami, Sharma and Karn, 2019; Ashley-Dejo, and Adelaja, 2022). Fish farming like other sectors of agriculture makes use of production factors most especially land, labour, capital and management. Information is another production factor worth mentioning because without adequate and relevant information, there can be no increase or improvement in production. One major or basic objective of information is that it must help in solving problems hence, information is an indispensable factor in the practice of fish farming and it is the basis of extension service delivery. According to Webler (2022), information resolves uncertainty and manifests as patterns. Although complex, most observable phenomena are not random but are instead associated with deterministic, chaotic systems. Haruna, *et al.*, (2015) opined that access to adequate information is very essential to increased agricultural productivity, especially fish farming hence when acquired and effectively utilized by the fish farmers will help to increase culture fish production and translate into a higher income, improved standard of living in rural and by extension the nation's economy. Among the measures taken to promote fish farming is the use of mass media to get relevant information to the farmers.

Various attempts were made by the government to expand the supply of fishery products in the country and despite government efforts to boost fish production, there still exist a wide gap between demand for fish and domestic supply in Nigeria (Ashley-Dejo *et al.*, 2017a; Ogunmefun and Achike, 2018). However, as the industry continues to grow and evolve, fish farmers face numerous challenges related to production techniques, diseases control, feed management, market opportunities and environmental concerns which could be linked to lack of or inadequate information hence, to address these challenges, fish farmers require reliable and updated information to make informed decisions. This study therefore intends to analyse the fish farming information needs among fish farmers in Lagos and Osun State. Specifically, it intends to describe the socio-demographic characteristics of the respondents, identify the types of fish farming-related information needed by the farmers in the different study areas and identify the constraints associated with fish farming in the study areas. It was hypothesized that there is no significant difference in the fish farming information needs of fish farmers in Lagos and Osun State.

## **Methodology**

This study was conducted in Lagos and Osun States located in the south-western part of Nigeria. Lagos State occupies 3,345 square kilometres and shares boundaries with Ogun State both in the north and east and is bounded on the west by the Republic of Benin and in the south, it stretches for 180 kilometres along the coast of Atlantic Ocean while Osun State with Osogbo as the state capital, occupies an area of land of about 14,875 square kilometres and shares boundaries with Kwara State in the north, in the east partly by Ekiti State and Ondo State, in the south by Ogun State and in the west by Oyo State. The 2 States are essentially a Yoruba speaking environment, mostly farmers producing food crops such as yam, maize, cassava,

cowpea and cocoyam while other income generating activities also abound in the 2 States. The population of the study consists of all registered fish farmers both male and female, with functional fish farms and who are into table-size fish farming in Lagos and Osun State, Nigeria. A multistage sampling procedure was employed for the selection of respondents for this study in the selected state. In the first stage, two states were randomly from states that constituted South-Western Nigeria, namely Lagos and Osun states. There are three (3) distinct fishing zones in Lagos State: the Western, the Eastern and the Far-eastern zones with to a total of 16 blocks: Western zone (6blocks), Eastern zone (4blocks) and Far-eastern zone (6blocks).

Western zone consist of six (6) blocks namely, Apa, Badagry, Ikeja, Ojo, Ibeshe-Riverine and Ikoga while Eastern zone consist of four (4) blocks which are Igbogbo, Odogunyan, Imota and Ikorodu and the Far Eastern zone consist of six (6) blocks namely, Epe, Eredo, Agbowa, Itoikin, Ibeju and Lekki. Secondly, a simple random sampling technique was used in selecting two (2) fishing zones from Lagos state (due to high concentration of fish farmers) which are the Far Eastern zone and the Eastern zone and the selected zones consist of six (6) and four (4)fishing blocks each thus making a total of ten (10) fishing blocks. Furthermore, a random selection of three (3) fishing blocks in the selected zones accounting for three (3) fishing blocks per zone was selected. Lastly, thirty percent (30%) of the total number of registered fish farmers (552) was selected from each block amounting to eighty-three (83) fish farmers from Far Eastern zone and eighty-three (83) fish farmers from the Eastern zone of Lagos State amounting to one hundred and sixty-six (166) fish farmers from the zone. Osun state was divided into three (3) agricultural zones and thirty-one (31) extension blocks. These are Osogbo (12) blocks, Iwo (7) blocks and Ife/Ijesha (12) blocks. A simple random sampling technique will be used in selecting two (2) agricultural zones from Osun state and these are Osogbo zone and Ife/Ijesha zone. The selected zones consist of twelve (12) blocks each. Random selection of fifty percent (50%) of the total number of blocks in the zones amounting to six (6) extension blocks each and twelve (12) blocks for the two (2) selected blocks.

Lastly, a random selection of thirty percent (30%) of the total number of registered fish farmers was selected from each block i.e. sixty-seven (67) fish farmers from Osogbo zone and sixty-seven (67) fish farmers from Ife/Ilesa zone hence a total of one hundred and thirty-four (134) fish farmers from Osun state hence, a total of three hundred (300) fish farmers constituted the sample size for the study. Both primary and secondary data was used for the study. Primary data was collected with the aid of a well-structured questionnaire and interview schedule. Data was analysed using descriptive such as frequency counts, percentages and means and inferential statistical tool used in testing the stated hypothesis was a t-test.

## **Results and Discussion**

### **Respondents' socio-demographic characteristics**

Results presented in Table 1 show that in Lagos State, 38.6% the fish farmers were between the age range of 40-49 years while 34.9% were between the age range of 50-59 years and 22.3% of them were between 30-39 years. Also, 1.2% are below 30 years and 3% are 60 years and above with a mean age of 47 years. Similarly, in Osun State, 54.5% of the fish farmers were between the ages of 40-49 years while 18% were between 50-59 years, 24.6% falls within the age range of 30-39 years and 2.9% were 60 years and above with a mean age of 44 years. This

implies that they are considered as productive and economically active and are likely to be more technologically inclined and agile young men and women who possessed the physical strength to sustain rigorous and arduous tasks required in fish farming. The study findings is in line with Attah, Otene and Waya (2020) and Olaoye, et al (2020) who found out that fish farmers mean age was 44 years and 47 years.

The Table further shows that 37.4% fish farmers in Lagos State had household size of between 5-6 persons, while 35.5% of them had household size of between 3-4 persons, 18.7% had household size of 7 persons and above and 8.4% had household size of between 1-2 persons with the mean household size of 5 persons. Also, 48.5% of the Osun State fish farmers had household size of between 5-6 persons, 29.9% had household size of between 3-4 persons while 14% had household size of 7 persons and above and 11.1% had household size of between 1-2 persons with a mean household size of 5 persons. This implies that the respondents in the study areas have medium-size household which shows the availability of family labour to assist in the fish farming business. This finding collaborate with Tavershima, Ugwuh and Ameh (2022) who found out that fish farmers mean household size was 5 persons. Also similar to the finding of Adebessin (2011) that most fish farmers have a family size of between 3 and 5.

The Table also showed that 51.8% of the fish farmers in Lagos State spent 13 years and above in formal education while 36.2% spent between 7-12 years and 10.8% spent between 1-6 years with 14 years as the mean year spent in formal education. Similarly, 52.9% of the respondents in Osun State spent 13 years and above in formal education while 44.1% of them spent between 7-12 years and 1.5% spent between 1-6 years and 14 years as the mean year spent in formal education. This indicates that majority of the respondents in Lagos (98.8%), and Osun State (98.5%) spent a significant number of years having formal education. This finding is in tandem with the reports of Ifejika, Uzokwe, and Oladosu (2013) that majority of fish farmers had 16 years of formal education and that of Ashley-Dejo, Olaoye, Olaoye and Adelaja (2017) that the fish farmers spent above 15 years in school.

As shown in Table 1, 50% of the fish farmers in Lagos State had less than 10 years of experience in fish farming, 28.9% had between 10 to 14 years of experience while 11.5% had between 15 to 19 years of experience and 9.6% had 20 years of experience and above with 10 years as the mean years of experience. Similarly, 58.2% of the fish farmers in Osun State had less than 10 years of experience, 33.6% had between 10 to 14 years of experience while 7.5% had between 15 to 19 years of experience and 0.7% had 20 years of experience and above with 8 years as the mean years of experience. This indicates that with the respondents' years of experience is quite encouraging as most of them have been in the business for a long time hence, they should have good skills and better approaches to fish farming business. The finding supports the reports of Gbigbi, and Achoja (2021) and Iruo, et al (2018) that the mean farming experience of fish farmers was 8 years and 9 years respectively but negate the findings of Hundeyin-Agoro (2011) that the mean of the year of experience in farming is between 3 and 4 years.

Other result presented in table1 shows that 80.7% of the fish farmers in Lagos State had pond size less than 1hectare, 18.1% had between 1-2hectares and 1.2% had 3 hectares and above with a mean pond size of 0.48ha. Similarly, 91.8% of the Osun State fish farmers had pond size less than 1 hectare, 5.9% had between 1-2 hectares and 2.3% had 3 hectares and above

with a mean pond size of 0.45ha. This finding indicates that majority of the respondents in Lagos State (80.7%) and Osun State had pond size that is less than 1h. This indicates that the fish farmers operate on a small-scale or subsistence level. This finding supports the works of Sophea, et. al., (2023), Galib, et. al., (2013) and Adhikary, et. al. (2018) that the fish farmers operate moderate fish farms.

Result presented in Table 1 shows that 45.7% of the respondents in Lagos State had ponds ranging from 4-6, 28.9% owned between 1-3ponds while 13.3% owned between 7-9 ponds and 12.1% owned 10 ponds and above with 5 ponds as the mean number of ponds owned. Also, 52.2% of the respondents in Osun State had between 4-6 ponds, 38.8% had between 1-3 ponds, 4.5% had between 7-9 ponds and 10 ponds and above respectively with 4 as the mean number of ponds. This indicates that the common number of ponds owned by the respondents in Lagos State (73.3%) and Osun State (90.7%) ranges between 1-6 ponds. This finding is in line with the report of Iruo, et. al. (2018) and Olaoye, Ojebiyi, Soyoye and Makinde (2020) that the mean number of ponds owned by the fish farmers was 5 and 6.

**Table 1: Distribution of respondents by socio-demographic characteristics (n=300)**

<b>Characteristics</b>	<b>Lagos State (n=166)</b>	<b>Osun State (n=134)</b>
<b>Age(yrs)</b>		
<30	2(1.2)	Nil
30-39	37(22.3)	33(24.6)
40-49	64(38.6)	73(54.5)
50-59	58(34.9)	24(18)
60>	5(3.0)	4(2.9)
<b>Mean</b>	<b>47yrs</b>	<b>44yrs</b>
<b>Household size</b>		
1-2	14(8.4)	15(11.1)
3-4	59(35.5)	40(29.9)
5-6	62(37.4)	65(48.5)
7>	31(18.7)	14(10.5)
<b>Mean</b>	<b>5people</b>	<b>5people</b>
<b>Years of formal education</b>		
No formal education	2(1.2)	2(1.5)
1 to 6	18(10.8)	2(1.5)
7 to 12	60(36.2)	59(44.1)
13>	86(51.8)	71(52.9)
<b>Mean</b>	<b>14yrs</b>	<b>14yrs</b>
<b>Fish farming experience(Yrs.)</b>		
<10	83(50)	78(58.2)
10 to 14	48(28.8)	45(33.6)
15 to 19	19(11.5)	10(7.5)
20>	16(9.6)	1(0.7)
<b>Mean</b>	<b>9.5yrs</b>	<b>8.4yrs</b>
<b>Fish farm size (ha)</b>		

<1	134(80.7)	123(91.7)
1 to 2	30(18.1)	8(5.9)
3>	2(1.2)	3(2.3)
<b>Mean</b>	<b>0.48ha</b>	<b>0.45ha</b>
<b>Number of ponds owned</b>		
1-3	48(28.9)	52(38.8)
4-6	76(45.7)	70(52.2)
7-9	22(13.3)	6(4.5)
10>	20(12.1)	6(4.5)
<b>Mean</b>	<b>5 ponds</b>	<b>4 ponds</b>

Percentage (Figures in parenthesis)

Source: Field Survey, 2023

### Types of fish farming-related information needed by the farmers in Lagos State and Osun State

Result presented in table 2 shows that the fish farming information commonly needed by the Lagos State fish farmers which includes; record keeping ranked 1<sup>st</sup> with a weighted mean score of 2.71, fish diseases control and treatment ranked 2<sup>nd</sup> with a weighted mean score of 2.61 and fish feed formulation ranked 3<sup>rd</sup> with a weighted mean score of 2.57 while in Osun State, the fish farming information always needed by the fish farmers were fish feed formulation ranked 1<sup>st</sup> with a weighted mean score of 2.41, pond construction ranked 2<sup>nd</sup> with a weighted mean score of 2.35 and fish diseases control and treatment ranked 3<sup>rd</sup> with a weighted mean score of 2.33. This implies that in Lagos State, the types of fish farming information needed by the fish farmers were record keeping, fish diseases control and treatment and fish feed formulation while that of Osun State were fish feed formulation, pond construction and fish diseases control and treatment.

This finding is in line with the work of Ijatuyi, Abiolu and Olaniyi (2016) that the greatest information needs of fish farmers was on feed formulation techniques, feeding operation, method of improving fingerling breeds and stocking operation. Similarly, this finding further support of the reports of Ajala, et. al., (2017) that majority of fish farmers practice disease prevention, control and management. On feed formulation and production/sourcing this finding gives credence to Ashley-Dejo, et. al., (2013) findings that majority of fish farmers engage in it. The result on record keeping is in agreement with Hundeyin-Agoro (2011) findings that majority of fish farmers in this study area keeps record, a factor contributing to high productivity, income and fish farm efficiency.

**Table 2: Distribution of respondents by types of fish farming information needed (n=300)**

Types of fish farming information needed	Lagos State (n=166)		Osun State (n=134)	
	WMS	Rank	WMS	Rank
Pond Construction	1.87	15 <sup>th</sup>	2.35	2 <sup>nd</sup>
Fish diseases control/treatment	2.61	2 <sup>nd</sup>	2.33	3 <sup>rd</sup>
Fish feed formulation	2.57	3 <sup>rd</sup>	2.41	1 <sup>st</sup>

Fish processing/storage	2.04	10 <sup>th</sup>	2.16	5 <sup>th</sup>
Record keeping	2.71	1 <sup>st</sup>	2.11	6 <sup>th</sup>
Fish farming management	2.51	4 <sup>th</sup>	2.09	7 <sup>th</sup>
Fish pond management	2.35	5 <sup>th</sup>	1.97	13 <sup>th</sup>
Water quality management	2.12	7 <sup>th</sup>	2.24	4 <sup>th</sup>
Fish species selection	1.90	12 <sup>th</sup>	1.87	14 <sup>th</sup>
Fish stocking ratio	1.77	17 <sup>th</sup>	1.63	17 <sup>th</sup>
Fish feeding/ Management	2.11	8 <sup>th</sup>	2.01	10 <sup>th</sup>
High fish production maintenance	2.07	9 <sup>th</sup>	2.03	9 <sup>th</sup>
Successful fish farming skill equipment	1.87	15 <sup>th</sup>	1.99	11 <sup>th</sup>
Effective fish farming management supply	1.97	11 <sup>th</sup>	1.82	16 <sup>th</sup>
Environmental sustainability of fish farm	1.90	12 <sup>th</sup>	1.84	15 <sup>th</sup>
Fish harvesting/landing	1.89	14 <sup>th</sup>	1.99	11 <sup>th</sup>
Effective farming marketing strategies	2.14	6 <sup>th</sup>	2.05	8 <sup>th</sup>

WMS: Weighted Mean Score

Source: Field survey. 2023

### Constraint types encountered by the fish farmers

The result presented in table 3 revealed that in Lagos State, constraints encountered by the fish farmers were high price of input ranked 1<sup>st</sup> with a weighted mean score of 1.83, followed by unfavourable market price situation ranked 2<sup>nd</sup> with a weighted mean score of 1.74 and unavailability of credit facilities ranked 3<sup>rd</sup> with a weighted mean score of 1.54 while in Osun State, high price of input ranked 1<sup>st</sup> with a weighted mean score of 1.31, followed by unfavourable market price situation ranked 2<sup>nd</sup> with a weighted mean score of 1.23 and unavailability of credit facilities ranked 3<sup>rd</sup> with a weighted mean score of 1.02. This indicates that high price of input, unfavourable market price situation and unavailability of credit facilities were the common constraints associated with fish farming in both States.

This implies that the high price of inputs and unfavourable market price situation can significantly reduce the profit margins for the fish farmers thus making it difficult for the farmers to cover their cost and sustain their operations in the long run. Unavailability of credit facilities can limit the ability of the fish farmers to invest in their operations and expand their businesses which can hinder their ability to take advantage of market opportunities and grow their enterprises. The combination of high price of inputs and unfavourable market price situation may discourage the fish farmers from investing in new production leading to a decline in overall fish production.

This finding is in tandem with the report of Oyebanjo, et. al., (2020) that the major constraints confronted by the fish farmers includes high cost of inputs, inadequate fund, pilferage on farm, attack of predators. Similarly, Yassien, et. al., (2022) reported that part of the constraints facing



fish farmers include, lack the accessibility to credit and financial support, the high prices of feeds, and lack of marketing information and lack of fry quality. In another study, Shubham, et.al., (2023) reported that the most severe and major constraints facing the fish farmers include high cost of inputs, lack of financial assistance, inadequate access to markets, insufficient marketing infrastructure and lack of extension services. Also, Salam, et. al., (2020), also reported that some of the severe constraints encountered by fish farmers include high cost of inputs, unavailability of credit facilities and insufficient marketing facilities.

**Table 3: Distribution of the respondents by types of constraints encountered in fish farming in Lagos and Osun State**

Constraints types	Lagos State (n=166)		Osun State (n=134)	
	WMS	Rank	WMS	Rank
Unfavourable market price situation	1.74	2 <sup>nd</sup>	1.23	2 <sup>nd</sup>
High price of inputs	1.83	1 <sup>st</sup>	1.31	1 <sup>st</sup>
Lack of skilled labour	1.24	7 <sup>th</sup>	0.94	4 <sup>th</sup>
Unavailability of credit facilities	1.54	3 <sup>rd</sup>	1.02	3 <sup>rd</sup>
Poor storage of fry	1.31	4 <sup>th</sup>	0.78	8 <sup>th</sup>
High incidence of poachers	1.25	6 <sup>th</sup>	0.84	7 <sup>th</sup>
Lack of extension services	0.78	8 <sup>th</sup>	0.91	5 <sup>th</sup>
Limited market	1.28	5 <sup>th</sup>	0.91	5 <sup>th</sup>

WMS-Weighted Mean Score

Field Survey, 2023

### Testing of hypothesis

**There is no significant difference in the fish farming information needs of fish farmers in Lagos and Osun State.**

### Difference in the fish farming information needs of fish farmers in Lagos and Osun States

The t-test result presented in table 4 shows that there is a statistically significant disparities in the information requirements between the two groups. In practical terms, this imply that the fish farming information needs of farmers in Lagos State and Osun State are distinct and specific to their respective contexts in other words, there is a varying needs in terms of information related to fish farming practices, market trends, regulations or other relevant aspects of fish farming. This finding is in line with work of Benard, Dulle and Hieromin, (2018).

**Table 4: Summary of t-test analysis showing the difference between fish farming information needs among fish farmers in Lagos and Osun State**

Variable	Mean	t-value	p-value	Decision
Fish farming information needs between Lagos and Osun State fish farmers	38.95 35.74	4.186	0.000	Significant

Significant at 5% level of significance

Source: Field Survey, 2023

### Conclusion and Recommendations

In conclusion, the study reveals that fish farmers in Lagos State and Osun State have distinct information needs which highlighted the importance of tailoring information dissemination strategies to meet the specific needs of the fish farmers in the different regions and influenced by factors such as age, years spent schooling, years of experience in fish farming and pond size. Both groups are faced with common constraints such as high price of inputs, unavailability of credit facilities and limited market hence, the following recommendations are made based on the findings of the study;

1. Customized information packages should be develop for the fish farmers based on their socio-demographic characteristics and specific needs.
2. Enhancing financial support mechanisms for the fish farmers to overcome constraints related to resource limitations.
3. Conducting regular surveys and assessments to monitor changing information needs and adapt information delivery strategies accordingly.
4. Establishing collaborative platforms involving government agencies, research institutions and private organizations to facilitate knowledge sharing and address information gaps.

### References

- Adebesin, A. A. (2011). Fish production, poverty alleviation and cooperative success of Erie Cooperative Fish Farm at Ijebu-Ode, Ogun State, Nigeria.
- Adefalu , L. L., Aderinoye-Abdulwahab, S., Bello, O. G, Olorunfemi, O.D/, Oba, S. A.( 2013): Information needs of fish farmers in Ilorin metropolis, Kwara State, Nigeria. *Journal of Agriculture, Food and Environment*, 9(2): 1-5
- Adhikary, R. K., Al Faruk, A. H., Bhuiyan Md. N. M. and Abdulla-Al-Asif1 (2018): Contribution of aquaculture on livelihood development of fish farmer at Noakhali, Bangladesh. *Asian-Australas. Journal of Bioscience and Biotechnology*. 3 (2), 106-121.

- Ajala, A. O., Kolawole, E. A., Owolabi, A. O. and Faseyi, S. A. (2017): Analysis of training needs of fish farmers in Ikorodu Local Government Area of Lagos state, Nigeria. *Nigerian Journal of Animal Production*, 44(5): 45 – 57
- Ashley-Dejo S. S. and Adelaja O. A. (2022): Economics of catfish hatchery farmers and its contribution to household poverty alleviation in Nigeria. *Agricultural Tropica Et Subtropica*.;55 (1):19-29
- Ashley-Dejo, S. S., Olaoye, O. J. and Adelaja, O. A.(2017): Comparative evaluation of economic benefits of adopters and non-adopters of improved fish production technologies in Oyo State, Nigeria. © Nigerian Society for Animal Production, *Nigerian Journal of Animal Production*. Pg. 230-247
- Ashley-Dejo, S. S., Olaoye, O. J., and Adelaja, O. A. (2017a). Analysis of profitability of small-scale catfish farmers in Oyo State, Nigeria. *Malaysia Journal of Animal Science*, 20(2):11-24.
- Ashley-Dejo, S. S., Omoniyi, I. T., Olaoye, O. J., Adelaja, O. A. and Idi-Ogede, A. M. (2019). Analysis of profit efficiency and its determinants among Catfish hatchery farmers in Oyo State, Nigeria. *The Nigeria Journal of Agricultural Extension*, 20(2):24 – 36.
- Ashley-Dejo, S.S., Olaoye, O.J., Fakoye, E.O., Ikeweinwe, N. B., Idowu, A.I., Bolarinwa, K.K. and Adelaja, O. A. (2013): Limitations to the adoption of recommended aquaculture production technologies by small scale fish farmers in Oyo State, Nigeria. *Global Journal of Science Frontier Research Agriculture and Veterinary*, Volume 13, Issue 9, Pp. 29-37.
- Attah, Otene and Waya (2020) in their work titled: Assessment of Internet And Mobile Phone Usage in Enhancing Fish Farming in Makurdi Local Government Area of Benue State, Nigeria.
- Awoyemi, T. T., and Ajiboye, A. J. (2011). Analysis of Profitability of Fish Farming Among Women in Osun State. *Nigeria Journal of Economics and Sustainable Development*, 2 (4) : 1 - 8 (Online) Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1005.7460&rep=rep1&type=pdf> on 05/05/2017.
- Balami S, Sharma A, and Karn R. (2019): Significance of nutritional value of fish for human. *Malaysian Journal of Halal Research*;2(2):32-34
- Benard, R., Dulle, F.W. and Hieromin, L.A. (2018): "Information needs and accessibility by fish farmers in the southern highlands of Tanzania", *Global Knowledge, Memory and Communication*, Vol. 67, No. 4/5, pp. 209-225. <https://doi.org/10.1108/GKMC-08-2017-0070>. Publisher: Emerald Publishing Limited.
- Bolorunduro, P. I. (2016). Fisheries extension service in Nigeria: the good, the bad, the ugly and the way forward. Inaugural lecture, Department of Livestock and Fisheries, National Agricultural Extension Research Liaison Service, Ahmadu Bello University, Zaria. Pp.1 – 74.

- Edet, E. O., Udoe, P. O. and Uwah, E. D. (2018): Costs and return analysis of fish farming in Calabar metropolis, Cross River State, Nigeria. *Global Journal of Agricultural Sciences* Vol. 17: 23-31 ISSN 1596-2903. DOI:<https://dx.doi.org/10.4314/gjass.v17i1.3>. [www.globaljournalseries.com](http://www.globaljournalseries.com)
- Food & Agriculture Organisation (2020): Chicken genetic resources used in smallholder production systems and opportunities for their development. P. Sørensen. FAO Smallholder Poultry Production Paper, No. 5. FAO, Rome. Available at: [www.fao.org/docrep/013/al675e/al675e00.pdf](http://www.fao.org/docrep/013/al675e/al675e00.pdf)
- Galib, S. M., Mohsin, A. B. M., Chaki, N., Fahad, M. F. H., Haque, S. M. M. (2013): An overview of the traditional rice-prawn-fish farming in Kalia of Narail district, Bangladesh. *Journal of Fisheries* 1(1): 1-6.
- Gbigbi, T. M. and Achoja, F. O. (2021): Backyard fish farm features and farmers personal characteristics as correlates of profitability of aquaculture in Nigeria. *Ege Journal of Fisheries and Aquatic Sciences*. Volume: 37 Issue: 3, 223 – 228. <https://doi.org/10.12714/egejfas>.
- Haruna, M. A., Obaroh, I. O. Yahaya, A. and Muhd. I. U. (2015): Access of fisheries information to fish farmers in Hadejia, North Western Nigeria. *European Journal of Physical and Agricultural Sciences* Vol. 3 No. 2, ISSN 2056-5879. Progressive Academic Publishing, UK Page 49 [www.idpublications.org](http://www.idpublications.org)
- Hundeyin-Agoro, O.C. (2011): The Socioeconomic Analysis of Small Scale Fish Farming Enterprise in Lagos State Fish Farm Estate, Ikorodu, Nigeria.
- Ifejika, P. I., Uzokwe, U. N., & Oladosu, O. I. (2013). Training needs of table size fish farmers operating in Niger State, Nigeria
- Ijatuyi, E. J., Abiolu, O.A and Olaniyi, O. A (2016): Information Needs of Fish Farmers in Osun-State, Nigeria. *Journal of Human Ecology*, 56(3): 309-317. DOI: 10.1080/09709274.2016.11907068
- Ijatuyi E. J. (2010): Analysis of Information Sources Used by Fish Farmers in Ife Central Local Government Area of Osun State. BSc Project. Ogbomoso, Nigeria: Ladoke Akintola University of Technology
- Iruo, F. A., Onyeneke, R. U., Eze, C. C., Uwadoka, C. and Igberi, C. O. (2018): Economics of Smallholder Fish Farming to Poverty Alleviation in the Niger Delta Region of Nigeria. *Turkish Journal of Fisheries and Aquatic Science*. Published by Central Fisheries Research Institute (SUMAE) Trabzon, Turkey in cooperation with Japan International Cooperation Agency (JICA), Japan, [http://doi.org/10.4194/1303-2712-v19\\_4\\_06](http://doi.org/10.4194/1303-2712-v19_4_06)
- Kainga P. E., Adesope O. M., Ijeoma M. C., and Ugwu J. E.(2016): Adoption of proved Fish Production Technologies by Fadama III users in Bayelsa, Nigeria. Proceedings, 21st Annual National Agricultural Extension Society of Nigeria, held at the University of Ibadan, Ibadan (16th-21st April, 2016). ISSN: 1595 – 1421

- Namonje-Kapembwa, T. and Samboko, P. (2020). Is aquaculture production by small-scale farmers profitable in Zambia?. *International Journal of Fisheries and Aquaculture*, 12(1), 6-20.
- Nwakuche, E. I., Akinyoade, O. F., Akalonu, G. C., Oyelade, O. A., and I. O. Opowoye (2019): Problems Facing Fish Farming Business in Kwara State: A Case Study of Four Local Government. *Continental Journal of Sustainable Development*; 10 (2): 27 – 34. ISSN: 2251 – 0486 DOI: 10.5281/zenodo.3547751.
- Ogunmefun, S. O. and Achike, A. I. (2018): Technical efficiency of pond fish production in Lagos State, Nigeria. *MOJ Food Process and Technology*, 6(1):104 – 111.
- Oladimeji, Y. U., Omokore, D. F., Abdulsalam, Z., and Damisa, M. A. (2014): Structure and profitability differentials among fishermen in Kwara State, Nigeria. *Journal of Environmental Issues and Agriculture in Developing Countries*.6, (1): 2141-2731.
- Olaoye o. J., Ojebiyi W. G., Soyoye V. O. and Makinde, K. O. (2020): Comparative analyses of socio-economic characteristics of Nigerian agricultural insurance corporation (naic) participants and non-participants fish farmers in Ogun State, Nigeria. *Ife Journal of Agriculture*, Volume 32, Number 3. Pp.141-155
- Olaoye OJ, Ezeri GO, Akegbejo-Samsons Y, Awotunde JM, Ojebiyi WG (2016): Dynamics of the adoption of improved aquaculture technologies among fish farmers in Lagos State, Nigeria. *Croatian Journal of Fisheries*, 74(2): 56-70.
- Oluwatayo, I. B. and Adedeji, T. A. (2019): Comparative analysis of technical efficiency of catfish farms using different technologies in Lagos State, Nigeria: a Data Envelopment Analysis (DEA) approach. *Agriculture and Food Security*, 8(8):1-9.
- Onyeneke, R. U., Iruo, F. A. and Eze, C. C. (2020): Employment Creation and Constraints to Fish Farming in the Niger Delta Region of Nigeria. *Internal Journal of Environmental Sciences and Natural Resources*. 23(2): pp.048-051. IJESNR.MS.ID.556108. DOI:10.19080/IJESNR.2020.23.556108
- Oyebanjo, O., Ologbon, O. A. C., Akerele, E. O., Awotide, D. O. and Ogundipe, S. O. (2020): Factors affecting productivity of pond fish farming in Ibadan/ Ibarapa agricultural zone, Oyo State, Nigeria. *African Journal of Science and Nature*, Vol. 11, 53-63:
- Salam, M. A., Hussain, S. M., Oinam, G. and Debnath, B. (2020): Perceived Constraints of Fish Farmers in Adoption of Scientific Fish Farming in Manipur. *Journal of Krishi Vigyan (Special Issue)*: 231-235.
- Salau, E .S, Lawee, A.Y, Luka, G.E and Bello, D (2014): Adoption of improved fisheries Technologies by fish farmers in Southern agricultural zone of Nasarawa State, Nigeria; *Journal of Agricultural extension and Rural Development*, 6(11), pp. 339-346.
- Shubham, P. K., Chahal, B. S., Ghanghas, A. K., Rohila, Mukteshwar, R., Arulmanikandan, B. and Rohtash, K. (2023): Constraints Perceived by Farmers in Fish Farming: A

Review Analysis. International Journal of Environment and Climate Change, Volume 13, Issue 11, Page 1546-1550.

Sophea Tim, Isabelle Providoli, Teamhy Sien, Soksophors Yim, Soben Kim and Hanspeter Liniger (2023): Strengthening climate resilience of rural communities by co-producing landscape-specific integrated farming systems in Ca Saurabha Kar, mbodia, Journal of Land Use Science, 18:1, 152-175, DOI: 10.1080/1747423X.2023.2190740

Tavershima, T., Ugwuh, M. G. and Ameh, D. E. (2022): Economic Effect of Improved Fish Production Technology on the Output of Fish Farmers in Otukpo Local Government Area of Benue State, Nigeria Official Publication of Direct Research Journal of Agriculture and Food Science: Vol. 10(8) Pp. 185-205. ISSN 2354-4147

Webler, F. S (2022): "Measurement in the Age of Information" (<https://doi.org/10.3390/info13030111>) Information. 13 (3): 111. doi:10.3390/info13030111 (<https://doi.org/10.3390/info13030111>) .

Wuyep, S. Z. and Rampedi, I. T.(2018): Urban fish farming in Jos, Nigeria: Contributions towards employment opportunities, income generation, and poverty alleviation for improved livelihoods. Agriculture. 8(7):110.

Yassien, S.A., Abd El-Rahim, S.A., Osman, M.F., Hamouda, R.E., Soliman M.A.M. and Nageib, R. M. (2022): Factors affecting aquaculture farms' profitability and constraints facing fish farmers in Egypt. Egyptian Journal of Aquatic Biology and Fisheries, Vol. 26(2): 519–527.

Zilberman D, Otte J, Roland-Holst D, Pfeiffer D (Eds.) 2011. Health and Animal Agriculture in Developing Countries. Springer Science & Business Media, P. 36.