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Research Article

EFFECT OF INFORMATION UTILIZATION ON FISH FARMERS' LEVEL OF PRODUCTION IN ABEOKUTA NORTH LOCAL GOVERNMENT AREA, OGUN STATE, NIGERIA

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ABSTRACT

The use of information on improved fish farming techniques has been seen to be ineffective due to the inability of the farmer to comprehend information passed across to them which is reflected on the continuous reduction in fish production and the reason why it seems like there is no positive effect of the information utilized by fish farmers on their productivity; hence, this study examined the effect of information utilization on fish farmers' level of production in Abeokuta north local government area, Ogun state, Nigeria. A total of 80 respondents were selected. Primary data were collected with the use of a well-structured questionnaire and interview schedule. Both descriptive and inferential statistics were employed for the study. Mean age of respondents was 46 years. Furthermore, majority were male which had tertiary education and kept Catfish. The mean income earned was #858, 275. Commonly used improved fish farming practices were feed formulation technique and feeding operation. This study found an average increase in output-to-input ratio to be 0.68 kg per fish fingerlings stocked (nearly two-fold increase; 0.29 kg per fish fingerlings) after utilization of information. Profit increase/improved income of fish farmers through information utilization on improved fish farming practices was found to be positively correlated with years spent schooling, stocking rate before information utilization, stocking rate after information utilization at 5% level of significance, and annual income while output before information utilization and output after information utilization at 1% level of significance. The study concluded that information utilization on improved fish farming practices had positively influenced (harvest) output of catfish farmers in the study area. The study recommends that extension agent to farmer ratio needs to be improved on, so that regular and prompt visits could be made to fish farmers to intensify information utilization on improved fish farming practices.

Keywords: Information utilization, Fish farmers, Level of production.

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INTRODUCTION

It has been acknowledged that farmers can use information on improved fish farming practices to advance their productivity and profitability as well as contribute to higher rates of agriculture, economic growth, and poverty reduction (Garba and Abdulumini 2014). Information is an indispensable factor in farming practices and the basis for extension service delivery. Accuracy of information implies that it is free from bias, timely, and relevant; timeliness means that recipients can get information when they need it, while relevance implies whether the piece of information specifically answers the users' question of what, why, when, who, and how. An individual consciously or unconsciously engages in information search to find appropriate information which can fill the information gap thereby regaining physiological and psychological balance.

Choo (2012) affirmed that people use information to create knowledge, but not just in the sense of data and facts but the form of representation that provides meaning and context for purposive action. In this regard, therefore, utilization of information remains an essential strategy for increased productivity and profitability. Utilization of information is very essential for increased productivity by fish farmers, Adefalu et al. (2013) identified the inadequate provision of information and training to fish farmers and scarcity of guidelines for fish farmers with no previous knowledge as one of the factors inhibitory to an adequate meeting of fish demand by Nigerian populace. Ogboma (2010), while studying fish farmers' access to agricultural information found that to cope with the pressure made on the protein demand occasioned by increasing population in Nigeria, it becomes compelling that information on fish farming and for fish farmers be provided since information is the driving and sustaining force for any development strategy and a necessary ingredient for success in all human endeavors. Furthermore, Ogboma (2010) concludes that formatting and packaging of fish farming information to suit end users are paramount while maintaining consistency and continuity in the delivery and diffusion of information. It would be imperative and gain if information utilized by fish farmers is made simple and constraints free.

Fish farming which is said to be predominant in the coastal states of Nigeria is currently one of the varieties of agricultural practices. Presently, there is observed increase in the population of fish farms and farmers. Fishing today is no longer restricted to the wild alone; fish farms are available nowadays even behind people's homes. To sustain this development, it becomes imperative that information on and for them be provided, this is because information is the driving and sustaining force behind any development strategy. The main objective of the study is to examine the effect of utilization on information on fish farmers' level of production. Specifically, objectives of the study are to: describe the socioeconomic characteristics of the respondents in the study area and identify the types of information on improved fish farming techniques utilized by the respondents in the study area. The study hypothesis states that there is no significant relationship between respondents' socioeconomic characteristics and effect of information utilization on fish farmers' level of production.

METHODS

Study area

The study was carried out in Abeokuta North Local Government area of Ogun State, a state created out of old Western State of Nigeria in 1976. Its headquarter is in the town of Akomoje, in the Iberekodo area of Abeokuta at at $7^0$12'N $3^0$12'E/7.200^{0}N3, 200^{0}E. It has an area of 808 km^2 with a population of 201,329 (NPC 2006). The Local Government first came into existence in 1981, as Abeokuta South Local Government

the same year to make up the defunct Abeokuta Local Government. It however re-emerged again on September 27, 1991. Abeokuta North Local Government area is situated within the tropics and located in the rain forest belt, bounded in the west by the Benin Republic, in the South by Lagos State and the Atlantic Ocean, in the East by Ondo State, and in the North by Oyo and Osun State. It also shares common boundaries with the following local governments: Odeda Local Government by north, Ewekoro Local Government by south, Abeokuta South Local Government by east, and Yewa North Local Government by west.

The people are predominantly farmers, most of who engage in cultivation of arable crop, while some engage in livestock and fishing. The major food-crop includes cassava, cocoyam, plantain maize, and vegetable, while palm produce and cocoa form the major cash crops of which the Abeokuta zones of Ogun State Agricultural Development Project's (OGADEP) unified extension services were purposively selected due to the fact that fish farming businesses are majorly embarked upon by the people in the zones. In recent times, however, the people of the area involved themselves in quarry business, artisan works, and handicrafts such as tie and dye making and pottery. The popular Adire fabrics are also produced in some areas of the local government. The Local Government has 16 wards; namely, Ago - Odo/Ikereku/IIawo Ward, Ikija ward, Ago Oko ward, Elega Housing/Imala ward, Iberekodo/Ilugun ward, Ita Ota/Gbagura, Ago Ika/Ijaiye Kukudi ward, Lafenwa/Afonta ward, Sabo/Ayetoro Garage ward, Oke Ago/Owu ward, Totoro/Oke Sokori ward, Ita Oshin/Olomore ward, Olorunda/Ijale ward, Imala Orile/Idi-Emi ward, and Ibara Orile ward**.** The population of the study consist of all fish farmers both male and female in Abeokuta North Local Government Area of Ogun State. A multistage sampling technique was adopted for this study. The first stage was the purposive selection of Abeokuta zones of Ogun State Agricultural Development Project's (OGADEP) unified extension services due to a larger proportion of fish farmers while the second stage involved random selection of five extension blocks (5) and the selection of two extension cells each from the five selected blocks thus making a total of ten extension cells and lastly, the random selection of eight respondents from each selected cells, thus a total of 80 respondents constituted the sample size for the study. Data for the study consist of both primary and secondary data while instrument for data collection was a well-structured interview schedule that consists of both open and close-ended questions and data collected were analyzed using both description and inferential statistics.

RESULTS AND DISCUSSION

Socioeconomic characteristics

Age

Table 1 shows that 7.5% of the respondents were below 30 years of age while 16.2% were between the age range of 30–39 and 35% were between the age ranges of 40–49. Furthermore, 36.3% were between the age range of 50–59 while 5% of the respondents were 60 years of age and above. The mean age was 46 years. This implies that 95% of the respondents are adults which are in their active productive age; hence, there exists a greater potential for increasing fish output in the area. This finding contradicts the findings of Olasunkanmi (2012) and Olaoye et al. (2016) that the mean age of fish farmers was 40 and 45 years. The reason for this particular age composition could be attributed to the fact that aquaculture is relatively new in the country. Furthermore, the result contradicts the findings of Ofuoku et al. (2008) that very few young people are involved in fish farming.

Sex

As shown in Table 1, the majority 68.7% of the farmers were male while 31.3% were female. This implies that fish farming business is male dominated in the study area and that sex has an influence regarding information utilization which may be due to the high human energy and physical exertion associated with fish farming activities, as it is evident from significantly low frequency of involvement of women in fish farming. Similar results of higher percentage of male involvement in fish farming were reported by Abiona et al. (2012) which is consistence with the result of Chioma and Adebayo (2012) that although women in Ilorin have shown willingness to participate in fish farming but are yet to involve in commercial fish farming and invest in it due to lack of funds.

Marital status

Similarly, Table 1 shows that 11.2% of the respondents were single while 78.8% of the respondents were married. Furthermore, 2.5% were divorced and 7.5% were widowed. This implies that the larger percentage of the respondents (78.8%) in the study area are married, this provides more hands for farming activities in the study area. This also shows that most of the fish farmers are men with household responsibilities which is likely to make them be willing to seek information that may enhance their income-earning capacity thereby improving their standard of living (Raufu et al., 2009).

Years spent schooling

Result presented in Table 1 revealed that 7.5% have no formal education while 2.5% spent between 1 and 6 years schooling and 36.2% spent 7–12 years schooling. Furthermore, 53.6% spent 13 years and above schooling. This implies that majority of the respondents are educated and will be able to make wise and rational decisions concerning their fish farming business.

Household size

Results presented in Table 1 show that 8.8% of the respondents have <3 persons in their household while 40% have between 3 and 4 persons in their household and 48.7% have between 5–6 persons in their household. Furthermore 2.5% have seven persons and above in their household with the mean household size been four persons. This implies that the respondents have small household size which may not be enough to handle the day-to-day activities on the fish farm.

Annual income

Table 1 shows that 18.7% of the respondents earn <#500,000 while 55% earn between #500,000-#999,000 and 17.5% earn #1,000,000-#1,499,999. Furthermore 8.8% earn #1,500,000 and above with a mean annual income of #858,275. This implies that fish farming is a lucrative business in the study area.

Fish farming experience

Result presented in Table 1 shows that 41.2% of the respondents have <5 years of fish farming experience while 33.8% of the respondents have between 5 and 9 years of fish farming experience and 17.5% of the respondents have between 10 and 14 years of fish farming experience. Furthermore, 7.5% of the respondents have 15 years and above experience in fish farming business with a mean fish farming experience of 6.5 years. This implies that majority of respondents could be regarded as new entrants into fish farming business which is in line with Olaoye et al. (2016) in their finding that majority of the respondents having 5 years of fish farming experience; however, Adefalu et al. (2013) opined that more years of farming experience are needed to facilitate the acquisition of skills in fish farming.

Pond type used

Table 1 reveals that 61.3%of the respondents utilized the earthen pond type while 38.7% utilized the concrete pond type. This implies that most of the fish farmers in the study area utilized the earthen pond. This finding is in line with Olaoye et al. (2014) that fish farmers practiced more through an earthen pond while Ogboma (2010) posited that fish farming is no longer limited to naturally created waters only, but it now extends to artificially created environments of raising fish such as plastic pond and tarpaulin pond.

Size of ponds

Table 1 shows that 11.2% of the fish farmers have <0.01 hectares while 40% of the fish farmers have between 0.01 and 0.05 hectares and 8.8% of the fish farmers have between 0.06 and 0.10 hectares. Furthermore, 40% of the fish farmers have 0.11 hectares and above with a mean pond size of 0.1 hectares. This implies that all the respondents are small scale fish farmers.

Type of fish farmed

Result in Table 1 shows that 72.5% of the fish farmers reared catfish while 8.8% reared tilapia fish and 18.7% reared both catfish and tilapia fish. This implies that almost all the respondents in the study area reared catfish. This finding corroborates the findings of Ogunlade (2007) and Ijatuyi (2010) that catfish have more resistance and are easy to farm in warm climates like the Nigerian tropical type.

Labor source

Further analysis presented in Table 1 shows that 28.8% of the respondents' source of labor is their personal efforts while <14% (13.7%) source of labor is hired labor and 36.3% of the respondents indicated family labor as their source of labor. Similarly, 17.5% of the respondents source of labor include the combination of personal efforts, hired, and family labor source. This implies that majority of the respondents have access to labor but from different sources made use of a variety of labor source; personal, hired, family, and a combination of all. This agrees with Okpeke et al. (2015) in the study carried out in delta state that majority of the respondents source of labor is the family labor.

Contact with extension agent

Table 1 also reveals that 45% of the respondents have contact with an extension agent while 55% of the respondents did not have contact with an extension agent. This implies that more than half of the fish farmers (55%) have no contact with extension agent; hence, the reason for less adoption of improved technologies in fish farming practices and underutilization of other fish farming information. This is contrary to the findings of Ogunremi et al. (2013) which showed that most of the fish farmers have contact with the extension agents while Olaoye et al., (2014) in their findings posited that extension agents are the highest source of information.

Member of social group

Table 1 shows that 47.5% of the respondents in the study area belonged to one social group or the other while 52.5% of the respondents do not belong to any social group. This implies that some of the respondents (47.5%) in the study area belong to one social group. This disagrees with the findings of Ijatuyi (2010) that majority (60%) of the respondents in the study area belonged to one social group or the other.

Types of information on improved fish farming techniques utilized by the respondents

Aware of fish farming-related information

As shown in Table 2, 93% of the respondents in the study area are aware of fish farming-related information while 6% are not aware of fish farming-related information and 1% gave no response. This implies that majority of the respondents are aware of fish farming-related information due to their level of education.

Use of information

Table 2 shows that 91% of the respondents made use of the information; they are aware of while 6% does not due to no awareness of the information. This implies that majority (91%) of the respondents made use of information due to the profitability effect of the information on their production.

Information type used

Table 2 revealed that 1.3% of the respondents used information on equipment and drug while 2.5% used information on fingerlings and 2.5% used information on stocking operation. Furthermore, 5% used information on water treatment while 40% used information on feed formulation technique and 20% used information on feeding operation. Furthermore, 21.2% used a combination of two or more information type relating to fish farming. This implies that majority (91%) of the respondents in the study area use different types of fish farming information to get a desired output and make profit too.

Frequency of use

From Table 2, 37.5% of the respondents use information always, while 32.5% use information often and 2.5% seldom uses information. Furthermore, 2.5% never use information. Furthermore, no response was recorded for 5% of the respondents. This implies that the respondents in the study area use information relating to fish farming at different frequencies due to how needed that they perceive the information useful to them.

Relevance of information

Table 2 shows that 31.2% of the respondents believed that the information utilized is highly relevant while 65% moderately relevant and 3.8% not relevant. This implies that information utilized by the respondents is relevant to their information need to get their target output and reduce the risk of loss to minimal.

Level of information utilization

As shown in Table 2, 20% of the respondents utilization of information was high, 71.2% was moderate while 8.8% was low. This implies that the respondents utilize information well enough which will influence their output after production.

Effect of information utilization on fish farmers' level of production

Before utilization of information

Stocking rate

Table 3 describes the effect of information utilization on fish farmers' level of production in the study area before the utilization of fish farming information; 45% of the respondents stocked below 1000 fish fingerlings while 15% stocked between 1000 and 1499 fish fingerlings and 22.5% stocked above 1500 fish fingerlings with a given mean of 1576 fish fingerlings. This implies that 45% of the respondents stocked below 1500 fish fingerlings due to low utilization of information, years of fish farming experience, and are regarded as new entrants which are in support of the study by Olaoye et al. (2016) which showed the majority having 5 years of fish farming experience requiring more years of experience. However, Adefalu et al. (2013) noted that more years of farming experience are needed to facilitate the acquisition of farming skills in farming production.

Output (kg)

Table 3 describes the effect of information utilization on fish farmers' level of production in the study area before the utilization of fish farming information; 56.2% of the respondents had an output below 500 kg of fish while 16.3% had an output of between 500 and 999 kg of fish. Furthermore, 10% of the respondents had an output of above 1000 kg of fishes, 17.5% of the respondents; no response was recorded with a given mean of 615 kg of fish. This implies that majority (56.2%) of the respondents had low output of <500 fishes; this means some of the stock was lost before harvest. The difference in stocking (input) and output (harvest) before utilization of information shows that the mean number of fingerlings stocked was 1576 and the mean output was 615 kg.

After utilization of information

Stocking rate

Table 3 describes the effect of information utilization on fish farmers' level of production in the study area after the utilization of fish farming information; 7.5% of the respondents stocked below 1000 fish fingerlings while 27.5% stocked between 1000 and 1499. Furthermore,

63.7% stocked above 1500 fishes and 1.3% no response was recorded with a given mean of 2886 fish fingerlings. This implies that as a result of information utilization by the respondents, more fish fingerlings were stocked than when they had low utilization information on fish farming production.

Output (kg)

Table 3 describes the effect of information utilization on fish farmers' level of production in the study area after the utilization of fish farming information; 2.5% of the respondents have an output of below 500 kg of fish while 46.2% had an output of between 500 and 999 kg of fish. Furthermore, 48.8% had an output of above 1000 kg of fish and 2.5% no response was recorded with a given mean of 1692 kg of fish. This implies that as a result of fish farming information utilized, there is an improvement on the output rate of the respondent unlike their output rate when they had not utilized fish farming information.

After the utilization of information, the mean number of fingerlings stocked was 2886 fingerlings and the mean output was 1692 kg. This indicates that there is an appreciable increase in the output (nearly two-fold increase; 0.29 kg per fish fingerlings) after utilization of information. The implication is that the utilization of fish farming information has a positive effect on the production output of fish farmers in the study area. This result is consistent with the findings of Ashaolu et al. (2006) and Akangbe et al. (2015) who observed that fish farming is profitable.

Tests of hypotheses

Ho1: There is no significant relationship between the socioeconomic characteristics of the respondents and effect of information utilization on fish farmers' level of production.

Relationship between the socioeconomic characteristics of the respondents and effect of information utilization on fish farmers' level of production.

Table 4 shows that educational background (X_2=23.54), membership of social group (X_2=6.75), contact with extension agent (X_2=9.85), access to labor (X_2=7.61), labor source preferred (X_2=32.91), access to fish farming information (X_2=9.63) at 5% level of significance shows significant relationship with effects of information utilization on fish farmers' level of production. This implies that the educational background, membership of social group, contact with extension agent, access to labor, labor source preferred, and access to fish farming information all play a significant role on the effects of information utilization on fish farmers' level of production in that an increase in these significant independent variables leads to a positive influence on the effects of information utilization on fish farmers' level of production. Furthermore, sex (X_2=3.46), marital status (X_2=6.36), religion (X_2=1.73), pond type used (X_2=3.75), culture system practiced (X_2=2.08), and type of fish kept (X_2=5.63) at 5% level of significance do not show significant relationship with effects of information utilization on fish farmers' level of production. In the case of these independent variables, the null hypothesis is accepted, this implies that there is no significant relationship between the sex, marital status, religion, pond type used, culture system practiced, type of fish kept, and effects of information utilization on fish farmers' level of production in the study area in that an increase in these variables has no influence on the effect of information utilization on farmers' level of production.

There is no significant relationship between the socioeconomic characteristics of the respondents and effect of information utilization on fish farmers' level of production.

Table 5 shows the results of Pearson product-moment correlation analysis which is as follows: Age is negatively correlated and significant at 5% level of significance to the effects of information utilization on fish farmers' level of production while fish farming experience is negatively correlated and significant at 5% level of significance to the effects of information utilization on fish farmers' level of production. Furthermore, years spent schooling, stocking rate before information utilization, stocking rate after information utilization is positively correlated and significant at 5% level of significance to the effect of information utilization on fish farmers' level of production while annual income, output before information utilization and output after information utilization is positively correlated and significant at 1% level of significance to the effect of information utilization on fish farmers' level of production. This implies that the lower the age and fish farming experience the higher the effect of information on fish farmers' level of production. Furthermore, the higher the years spent schooling, stocking rate before information utilization, and stocking rate after information utilization, the higher the effect of information utilization on fish farmers' level of production. Furthermore, household size, number of fish pond, and size of fish pond is positively correlated but not significant at 5% level of significance to the effect of information utilization on fish farmers' level of production in the study area. This implies that these variables do not affect the effect of information utilization on fish farmers' level of production.

Ho2: There is no significant relationship between information sources available and effect of information utilization on fish farmers' level of production.

Relationship between information sources available and effect of information utilization on fish farmers' level of production.

Table 6 shows that information sources available (X_2=54.89) at 5% level of significance show significant relationship with effects of information utilization on fish farmers' level of production. This implies that the information sources available affect the effects of information utilization on fish farmers' level of production in that the more the information sources available, the more the effect of information utilization on fish farmers' level of production.

CONCLUSION

None

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made;

1. The extension agent to farmer coverage needs to be improved on, so that regular and prompt visits could be made to fish farmers to intensify the utilization of improved fish farming practices.
2. Government should encourage the fish farmers by providing for them credit facilities at minimal interest rate, subsidized costs of improved fish feeds and fingerlings, and other improved fish production technology, thereby increasing their productivity.
3. Fish farming in the study area is male-dominated; hence, the female counterparts need to be encouraged to participate in fish farming because it is a means by which they can augment their income thus improving their standard of living.

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APPENDIX

Table 1: Respondents socioeconomic characteristics (n=80)

Socio economic variables	Frequency	Percentage	Mean
Age (Years)			
Below 30	6	7.5	
30–39	13	16.2	
40–49	28	35	46
50–59	29	36.3	
60 and above	4	5	
Sex			
Male	55	68.7	
Female	25	31.3	
Marital status			
Single	9	11.2	
Married	63	78.8	
Divorced	2	2.5	
Widowed	6	7.5	
Years spent schooling			
0	6	7.5	
1–6	2	2.5	
7–12	29	36.2	13
13>	43	53.8	
Household size			
<3	7	8.8	
3–4	32	40	4
5–6	39	48.7	
7>	2	2.5	
Annual income (#,000,000)			
<500	15	18.7	
500–999	44	55	#858,275
1M-1499	14	17.5	
5M>	7	8.8	
<500	15	18.7	
Fish farming experience (Yrs)			
<5	33	41.2	
5–9	27	33.8	
10–14	14	17.5	6.5
15>	6	7.5	
Pond type used			
Earthen	49	61.3	
Concrete	31	38.7	
Pond size (Ha)			
<0.01	9	11.2	
0.01–0.05	32	40	
0.06–0.10	7	8.8	0.1
0.11>	32	40	
Labour source			
Personal effort	23	28.8	
Hired	11	13.7	
Family	29	36.3	
Combination	14	17.5	
Contact with extension agent			
Yes	36	45	
No	44	55	
Duration of contact			
Fortnightly	13	16.3	
Weekly	3	3.7	
Monthly	20	25	
Membership of social organization			
Yes	38	47.5	
No	42	52.5	

Source: Field Survey, 2021

Table 2: Distribution of respondents by the types of information on improved fish farming techniques utilized

Characteristics	Frequency	Percentage
Aware of fish farming related information		
Yes	74	92.5
No	5	6.2
No response	1	1.3
Use of information		
Yes	73	91.2
No	5	6.3
No response	2	2.5
Information type used		
Equipment and drug	1	1.3
Fingerlings	2	2.5
Stocking operation	2	2.5
Water treatment	4	5
Feed formulation technique	32	40
Feeding operation	16	20
Combined	17	21.2
No response	6	7.5
Frequency of use		
Always	46	57.5
Often	26	32.5
Seldom	2	2.5
Never	2	2.5
No response	4	5
Relevance of information		
Highly relevant	25	31.2
Moderately relevant	52	65
Not relevant	3	3.8
Level of information utilization		
High	16	20
Moderate	57	71.2
Low	7	8.8

Source: Field Survey, 2021

Table 3: Distribution of respondents by effect of information utilization on their level of production

Characteristics	Frequency	Percentage	Mean
Before utilization of information Output (kg)			
Below 500	45	56.2	
500–999	13	16.3	
Above 1000	8	10	
After utilization of information Stocking rate			
Below 1000	6	7.5	
1000–1499	22	27.5	615
Above 1500	51	63.7	
No response	1	1.3	
Output (kg)			
Below 500	2	2.5	
500–999	37	46.2	
Above 1000	39	48.8	1692
No response	2	2.5	

Source: Field Survey, 2021

Table 4: Results of Chi-square analysis showing the relationship between respondents' socioeconomic characteristics and effects of information utilization on fish farmers' level of production

Socio economic characteristics	Chi-square value	DF	Decision
Member of social group	6.75	2	S
Contact with extension agent	9.85	2	S
Pond type used	3.75	4	S

Key: At 5% level of significance, DF: Degree of freedom, S: Significant, NS: Not significant

Table 5: Summary of the correlation coefficient of the relationship between the socio-economic characteristics of the respondents and effect of information utilization on fish farmers' level of production

Socio-economic characteristics	Correlation coefficient	Decision
Age	−0.542	Significant
Years spent schooling	0.437	Significant
Household size	0.822	Significant
Annual income	0.136	Significant
Fish farming experience	0.978	Significant
Size of fish pond	0.064	Significant
Output before information utilization	0.167	Significant
Output after information utilization	0.149	Significant

Key: * Correlation is significant at 5%, **Correlation is significant at 1%

Table 6: Results of Chi-square analysis showing the relationship between information sources available and effect of information utilization on fish farmers' level of production

Characteristics	Chi-square value	Degree of freedom	Decision
Information sources available	54.89	14	Significant

At 5% level of significance