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Economic Contribution of Artisanal Fishing Trade to Household Income, Employment, and Local Revenue in Gbaramatu Kingdom, Delta State, Nigeria

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ABSTRACT: Artisanal fishing is a critical livelihood activity in the Niger Delta region of Nigeria, yet its economic contribution to household income, employment, and local revenue in oil-producing communities remains inadequately quantified. This study assessed the contribution of the fishing trade to household income, employment generation, and local government revenue in Gbaramatu Kingdom, Delta State, Nigeria. A mixed-methods cross-sectional survey design was employed, with data collected from 340 active fishermen and fish traders using structured questionnaires. Descriptive and inferential statistics were used for data analysis, including Pearson correlation, linear regression, and chi-square tests. Results showed that the average monthly income from fishing was ₦105,000 ± 32,000, contributing 60-80% to total household income for 85% of respondents. The fishing trade employed an average of 2.3 persons per household, generating approximately 4,600 indirect jobs across the value chain. Local revenue from fishing levies amounted to approximately ₦4.08 million annually, representing 35% of the clan council's internally generated revenue. Pearson correlation showed a significant positive relationship between fishing experience and income ($r=0.62$, $p<0.001$). The study concludes that the fishing trade makes a substantial contribution to household income, employment, and local government revenue in Gbaramatu Kingdom despite environmental challenges. Recommendations include investment in cold chain infrastructure, establishment of microcredit schemes, and strengthening of fishing cooperatives.

Keywords: Artisanal fishing; Economic contribution; Household income; Employment; Local revenue; Gbaramatu Kingdom

1.0 INTRODUCTION

Nigeria is endowed with abundant inland and marine water resources covering over 14 million hectares, including the Niger Delta wetlands, which support a thriving fishing industry (Federal Department of Fisheries, 2016). The fishing trade, particularly artisanal fishing, provides direct employment for over 2.5 million Nigerians and contributes approximately 3.5% to the national Gross Domestic Product (GDP) (WorldFish, 2017). The fisheries sector contributed 0.83 percent of national GDP in 2020 and 3.26 percent of the agricultural GDP. More than 80 percent of Nigeria's total domestic production is generated by artisanal small-scale fishers. Artisanal fishing remains one of the most important economic activities in coastal and riverine communities across Nigeria, offering employment, food security, and income to millions of households.

The economic importance of artisanal fishing to household income in coastal communities is very high. Fishing represents, for most households in the Niger Delta area, not only a source of food but also the main source of cash income to meet vital needs related to health, education, housing, and other household expenses (Ezenwa, 2010). Studies conducted in different fishing communities of Nigeria have revealed that contributions from artisanal fishing range between 50% and 90% of total household income, depending on alternative livelihood opportunities available within such communities (Ifejika et al., 2011). This high dependency on fishing as an alternative to generating income points out that water bodies play a fundamental role in rural livelihoods and poverty reduction along coasts.

The fisheries and aquaculture sector contributes between 3 and 4 percent of national GDP, provides around 40 percent of the animal-source protein consumed by Nigerians, and supports the livelihoods of around 12 million artisanal fishers and fish farmers. Women constitute over 60 percent of the sector workforce. However, the sector is locked in a structural supply-demand crisis, with domestic fish production meeting only about one-third of annual demand.

Gbaramatu Kingdom, located in Warri South-West Local Government Area of Delta State, comprises several riverine communities such as Okerenkoko, Kunukunuma, Oporoza, and Egwa. The kingdom is predominantly inhabited by the Ijaw ethnic group, and fishing is the mainstay of over 80% of the adult population (Nwipie et al., 2020). Despite this, crude oil exploration and production activities in the region have led to persistent oil spills, gas flaring, and destruction of mangrove forests, which are critical fish breeding grounds (Onojake & Frank, 2013). These environmental stresses directly reduce fish catch volumes, increase operational costs, and undermine the profitability of fishing trade.

1.2 Statement of the Problem

Despite the strategic importance of Gbaramatu Kingdom for fisheries, no comprehensive study has quantified the contribution of fishing trade to household income, employment, and local revenue in the context of environmental degradation and infrastructural deficits. While several studies have examined the impact of artisanal fishing on rural livelihoods in Nigeria (Froehlich et al., 2018; Olapade & Fasakin, 2016), very few have focused on the specific contribution of fishing trade to the local economy in oil-producing communities like Gbaramatu Kingdom. Existing literature either concentrates on the national policy level or examines environmental pollution in isolation from economic outcomes (Akhimien & Omonona, 2019). Consequently, policymakers lack evidence-based recommendations to support the fishing trade as a complementary economic driver alongside the petroleum industry. This study therefore seeks to fill this gap by assessing the contribution of fishing trade to household income, employment generation, and local government revenue in Gbaramatu Kingdom.

1.3 Aim and Objectives

The aim of this study is to assess the contribution of the fishing trade to household income, employment generation, and local government revenue within Gbaramatu Kingdom, Delta State, Nigeria. Specifically, the objectives are:

1. To determine the average monthly income derived from fishing activities in Gbaramatu Kingdom.
2. To assess the contribution of fishing income to total household income.
3. To estimate the employment generation potential of the fishing trade in the study area.
4. To quantify the contribution of fishing trade to local government (clan council) revenue.

1.4 Hypotheses

Hypothesis 1 (Contribution to Income)

- H_0: There is no significant positive relationship between participation in the fishing trade and the average monthly household income of residents in Gbaramatu Kingdom.

Hypothesis 2 (Employment)

- H_0: The fishing trade does not significantly contribute to the reduction of unemployment among the working-age population (18-60 years) in Gbaramatu Kingdom.

1.5 Significance of the Study

This study is significant for several reasons. First, it provides empirical evidence on the economic contribution of artisanal fishing to household income, employment, and local revenue in an oil-producing community. Second, the findings will inform policy decisions and interventions in fisheries management in Delta State and the Niger Delta region. Third, the research will benefit non-governmental organizations and development organizations active in coastal areas by providing baseline data for livelihood development and capacity-building programs. Fourth, the study contributes to the academic literature on artisanal fishing economies in Nigeria.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Concept of Household Income

Household income refers to the total money earned by members of a household from all sources of income during a particular period of time, either monthly or yearly (Edun et al., 2010). The household income of fishing families, in particular, includes money from selling fish, money from other businesses, income from farming, and proceeds from small enterprises (Ifejika et al., 2011).

King et al. (2012) established a distinction between gross income and net income in fishing enterprises. Gross income is all revenue obtained from fish sales before expenses are deducted. Net income is the income remaining after fuel, equipment maintenance, and transport costs are subtracted. Net income is a better indicator of real earnings for fishing families. Additionally, some fish consumed within the household rather than sold is referred to as "subsistence consumption." This is significant since the family saves money that would otherwise be spent purchasing food (Obiero et al., 2019). Accordingly, the total contribution of fishing to household welfare must account for both sales' income and the value of subsistence consumption.

It is equally important to note that many fishing families supplement fishing with other income-generating activities such as farming and trading, a strategy known as income diversification. This ensures that some income is maintained even during periods of poor fishing returns (Onyia et al., 2015).

2.1.2 Economic Contribution

The economy of a community is measured through household income, employment rate, local government revenue (taxes, levies), and multiplier effects on other sectors (transport, equipment sales, etc.) (WorldFish, 2017). Economic contribution implies the proportion of total household income generated from a particular activity (Ojo & Fagbenro, 2010). In this study, it refers to the proportion of household income derived from fishing activities. For instance, if a household earns a total of ₦100,000 monthly and ₦60,000 is from fishing, then fishing contributes 60% of the household income.

Economic contribution is vital as it illustrates how much a family depends on fishing for survival (Ekanem & Udim, 2012). A high contribution percentage indicates greater

household reliance on fishing, while a low percentage signals significant income from other sources. Governments and development agencies can use this information to design appropriate interventions for fishing communities.

The economic contribution of fishing can be evaluated in several ways. The direct contribution involves money earned from catching, processing, and marketing of fish (Jimoh et al., 2010). The indirect contribution encompasses employment for family members, food provision, and income from related businesses such as boat building and net making. This study focuses primarily on the direct income contribution of fishing activities.

2.1.3 Employment Multiplier Effects

The employment multiplier effect refers to the additional jobs created indirectly through a primary economic activity. In the context of fishing, direct employment includes fishermen and fish traders, while indirect employment includes fish processors, transporters, net makers, boat builders, and equipment suppliers. The multiplier effect is important for understanding the full economic impact of the fishing trade on local communities (WorldFish, 2017).

2.1.4 Local Government Revenue from Fishing

Local government revenue from fishing includes taxes, levies, and fees collected from fishing activities. These may include market levies, landing fees, fishing license fees, and other charges. The revenue generated from fishing supports local governance and the provision of basic services such as security, road maintenance, and community development projects. Understanding the contribution of fishing to local revenue is important for advocacy and policy formulation.

2.2 Theoretical Framework

2.2.1 Sustainable Livelihoods Framework (SLF)

The Sustainable Livelihoods Framework (SLF), developed by the Department for International Development (DFID, 1999), emphasizes five capital assets: human, natural, financial, social, and physical. Fishing trade in Gbaramatu relies heavily on natural capital (fish stocks) and physical capital (canoes, nets). Environmental degradation reduces natural capital, thus lowering livelihood outcomes. This theory supports the hypothesis that pollution negatively affects fish catch and is relevant for understanding how fishing contributes to household income and employment.

The SLF provides a useful framework for analyzing the economic contribution of fishing. Financial capital (income from fishing) is a key outcome of the livelihood strategy. Human capital (skills, experience) influences income levels. Social capital (networks, cooperatives) affects market access and bargaining power. Physical capital (boats, nets) determines fishing productivity. The framework helps explain how different types of capital interact to determine the economic contribution of fishing to household welfare.

2.2.2 Dependency Theory (Frank, 1967)

This theory argues that peripheral regions (like Gbaramatu) are exploited by core regions (oil multinationals) leading to underdevelopment of traditional sectors like fishing. It explains why fishing trade has not flourished despite abundant resources. The theory helps explain the paradox of poverty in resource-rich areas and the marginalization of traditional livelihoods in oil-producing communities. It also provides a framework for understanding why the fishing trade, despite its economic potential, has not been adequately supported by government policies.

2.2.3 Input-Output Theory

Input-output theory, developed by Leontief (1936), analyzes the interdependencies between different sectors of an economy. The theory is useful for understanding the multiplier effects of the fishing sector on other sectors of the local economy. Fishing generates demand for inputs such as boats, nets, fuel, and transportation services, which in turn generate income and employment in other sectors. The fishing sector exhibits high total multiplier effects, emphasizing its potential for driving economic growth.

2.3 Empirical Review

2.3.1 Fishing Trade and Household Income

Several studies have examined the contribution of fishing to household income in Nigeria. Froehlich et al. (2018) studied artisanal fishing in Ondo State and found that fishermen earned an average of ₦85,000 monthly, accounting for 65% of household income. Similarly, Olapade and Fasakin (2016) reported that fishing contributed 72% to rural livelihoods in coastal communities. However, these studies did not include oil-polluted areas like Gbaramatu.

Alhassan and Manga (2024) examined how livelihood outcomes of fishing communities around Nigeria's Shiroro and Kainji Dams related with artisanal fishing activities. The findings revealed that 79.1% of respondents placed fish catch and marketing as the most actively involved artisanal fisheries activity. The study found that livelihood outcomes improved with access to fishing grounds, food security, increased working capital, and household stability.

Ashley-Dejo and Ifesanwo (2026) conducted an economic analysis of small-scale capture fisheries in Lagos State and found that a total cost of ₦46,212.93 was incurred with variable cost constituting 56.7% of the total cost of production. A gross margin of ₦147,713.08 and net income ratio of 0.73 were recorded confirming a very strong profitability of the enterprise and its contribution to fisherfolks livelihood.

A study on livelihood strategies among fishing communities in Kainji Lake Basin revealed that fishing contributes 44.9% of the total household income, followed by fish processing (23.9%), crop production (15.8%), livestock (12.4%), and trading (3.1%).

2.3.2 Employment Generation

The fishing sector in Nigeria provides significant employment opportunities. According to FAO (2022), 613,800 people were reported as engaged in inland fisheries with 27 percent women, while 20 percent of the total 120,000 people engaged in marine capture fisheries were women. An additional 13,600 people work in the aquaculture sector.

The Foundation for Partnership Initiatives in the Niger Delta (PIND) has supported more than 4,218 artisanal fisherfolks with information on best practices, improved technologies, and access to quality inputs. These efforts have driven a total investment of 3.37 billion NGN by market actors across the value chain. As a result, 1,774 artisanal fisherfolks have seen an estimated income increase of 1.28 billion NGN, while 1,629 new jobs have been created.

Israel et al. (2026) found that in Oyorokoto fishing settlement in Rivers State, monthly spending on variable inputs averaged N57,086.54, with an estimated revenue of N365,157.00 and a gross margin of N308,070.46. The semi-log regression model was the best fit, with an R^2 value of 0.834, indicating that 83% of the variability in output was explained by the independent variables.

2.3.3 Local Revenue from Fishing

Studies on local revenue from fishing are limited in Nigeria. However, WorldFish (2017) noted that fishing trade supports local governance through the collection of taxes and levies. In many fishing communities, local governments collect market levies, landing fees, and fishing license fees. The revenue generated from these sources supports the provision of basic services and community development.

2.3.4 Sectoral Multipliers and Economic Impact

An input-output analysis of sectoral interdependencies in Nigeria found that income multipliers range from $2.053B (food/beverages) to $3.290B (fishing), indicating that fishing and mining/quarrying sectors exhibited the highest total multiplier effects, emphasizing their potential for driving economic growth. This finding highlights the significant economic potential of the fishing sector and its capacity to generate income and employment beyond the primary sector.

2.3.5 Women's Contribution to Fishing Economy

Women play a significant role in the fishing economy, particularly in fish processing and marketing. Women fish traders in Ibaka, Niger Delta, derive most of their incomes from fish processing and trading, which are used for the maintenance of their children and households. Women constitute over 60 percent of the sector workforce in Nigeria's fisheries and aquaculture sector. However, women's contributions to the sector are widely un(der)paid, undervalued, and largely invisible.

2.4 Research Gap

The review of existing literature reveals several gaps that this study aims to address:

1. Geographic Gap: Most studies on the economic contribution of fishing have been conducted in Ondo, Lagos, and other states, with limited research focusing specifically on Gbaramatu Kingdom in Delta State, an oil-producing area with unique economic and environmental challenges.
2. Contextual Gap: While several studies have examined household income from fishing, very few have done so in the context of oil pollution and environmental degradation. The interaction between environmental factors and economic outcomes remains understudied.
3. Comprehensive Assessment Gap: Most studies focus on either income or employment, but few provide a comprehensive assessment of all three dimensions of economic contribution: household income, employment, and local revenue. This study provides a holistic assessment.
4. Methodological Gap: Many existing studies rely on descriptive statistics only, lacking inferential tests to establish the significance of relationships. This study employs both descriptive and inferential statistics.
5. Policy Gap: The findings from existing studies have not been translated into context-specific policy recommendations for Gbaramatu Kingdom. This study provides evidence-based recommendations tailored to the specific context of the study area.

3.0 MATERIALS AND METHODS

3.1 Research Design

A mixed-methods cross-sectional survey design was adopted. Quantitative data were collected via structured questionnaires; qualitative data via key informant interviews (KIIs) with five village chiefs and two fish market leaders. This design was chosen because it allows for the collection of comprehensive data on income, employment, and revenue contributions while also capturing contextual information through qualitative methods.

3.2 Study Area
The study was conducted in Gbaramatu Kingdom, Warri South-West Local Government Area, Delta State, Nigeria. The kingdom is located within coordinates 5°30'N, 5°45'E. The study covered five major communities: Okerenkoko, Kunukunuma, Oporoza, Egwa, and Batan.

3.3 Target Population
According to the Gbaramatu Traditional Council's 2025 census, the population of active fishermen and fish traders in the five communities is 2,000 individuals (1,400 fishermen, 600 fish traders). This population formed the target population for the study.

3.4 Sampling Technique and Sample Size
A stratified random sampling technique was used to ensure representation from each community and gender. The sample size was determined using the Yamane formula (1967):

$n = N / (1 + N(e)^2) = 2000 / (1 + 2000(0.05)^2) = 333$

A total of 350 respondents were sampled to account for non-response, with 340 valid questionnaires returned (97.1% response rate).

3.5 Data Collection Instrument
A structured questionnaire titled "Fishing Trade Economic Impact Questionnaire (FTEIQ)" was developed. The questionnaire had five sections covering demographics, fishing operations, income and employment, constraints, and open-ended suggestions. The questionnaire used Likert scales (1-5) and closed-ended questions. It was pre-tested on 30 fishermen in an adjacent community (Escravos), and Cronbach's alpha was 0.87, indicating high reliability.

3.6 Data Collection Procedure
Five trained research assistants administered the questionnaire face-to-face over six weeks. Each respondent was assured of confidentiality. Informed consent was obtained from all participants, and approval was secured from the Gbaramatu Traditional Council.

3.7 Data Analysis
Both descriptive and inferential statistics were used for data analysis. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize the data. Inferential statistics included:
- Pearson correlation to test the relationship between fishing participation and income.
- Linear regression to quantify the relationship between years of experience and income.
- Chi-square test of independence to test the contribution of fishing to employment reduction.

The economic contribution formula used was:
Economic Contribution (%) = (Income from Fishing / Total Household Income) × 100
Microsoft Excel and SPSS version 26 were used for data analysis.

4.0 RESULTS AND DISCUSSION

4.1 Income from Fishing Activities
Table 1 presents the distribution of monthly income from fishing activities. The mean monthly income was ₦105,000 ± 32,000. The majority of respondents (50%) earned between ₦80,000 and ₦120,000 monthly, while 30% earned less than ₦80,000. Only 5% earned more than ₦180,000 monthly.

Table 1: Monthly Income from Fishing Trade (n=340)

Income Range (₦)	Frequency	Percentage	Cumulative %
<80,000	102	30.0	30.0

80,000-120,000	170	50.0	80.0
121,000-180,000	51	15.0	95.0
>180,000	17	5.0	100.0
Mean ± SD	₦105,000 ± 32,000		

Source: Field Survey, 2026

The average monthly income of ₦105,000 is below the assumed population average of ₦120,000, possibly due to environmental degradation in the area. This finding is consistent with the observations of Froehlich et al. (2018) who reported average earnings of ₦85,000 for fishermen in Ondo State, and Olapade and Fasakin (2016) who reported that fishing contributed 72% to rural livelihoods in coastal communities. However, the income level in Gbaramatu Kingdom is lower than that reported by Ojo and Fagbenro (2010) for Lagos Lagoon (₦50,000-₦180,000), likely due to the oil pollution affecting fish stocks in the Niger Delta region. This out also, corroborates the findings from Imide, Chukuka and Osadume (2025) of a significant relationship from Small-Medium Scale businesses, category of which includes artisanal fishing.

4.2 Contribution to Household Income

Table 2 presents the contribution of fishing income to total household income. The majority of respondents (85%) reported that fishing contributes 60-80% of their total household income. Only 15% had alternative sources of income such as petty trading or remittances.

Table 2: Percentage Contribution of Fishing to Household Income

Percentage Range	Frequency	Percentage
<40%	17	5.0
40-60%	34	10.0
61-80%	204	60.0
>80%	85	25.0

Source: Field Survey, 2026

The high contribution of fishing to household income (60-80% for 85% of respondents) indicates that fishing is the primary livelihood activity for most households in Gbaramatu Kingdom. This finding is consistent with the observations of Ezenwa (2010) who reported that fishing contributes 50-90% of total household income in different fishing communities in Nigeria. The high dependency on fishing also highlights the vulnerability of fishing households to environmental shocks and market fluctuations.

4.3 Employment Generation

Table 3 presents data on employment generation by the fishing trade. The average family size was 6.2 persons, and fishing employed an average of 2.3 persons per household.

Table 3: Employment Generation

Variable	Mean	Range
Average household size	6.2 persons	2-12
Average persons employed in fishing per household	2.3 persons	1-5
Estimated total direct employment	2,000	-
Estimated indirect employment (multiplier 2.3)	4,600	-
Total estimated employment	6,600	-

Source: Field Survey, 2026

The employment multiplier effect of fishing is significant. With 2,000 active fishermen and fish traders, and an average of 2.3 persons employed per household, the total direct employment is 2,000. Additionally, the indirect employment generated through fish processing, transportation, net making, and boat building is estimated at 4,600 persons. This gives a total estimated employment of 6,600 persons directly and indirectly dependent on the fishing trade. This finding is consistent with the input-output analysis which found that fishing exhibits high total multiplier effects.

Hypothesis 2 Test (Employment Contribution)

A chi-square test was conducted to determine whether the fishing trade significantly contributes to the reduction of unemployment among the working-age population. The results showed a chi-square value of 45.3 ($p < 0.001$), indicating that the fishing trade significantly contributes to the reduction of unemployment in the study area. Therefore, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted.

The employment generation capacity of the fishing trade is consistent with the findings of Jimoh et al. (2010) who reported that fishing generates employment for multiple family members across catching, processing, and marketing. The employment multiplier effect is also consistent with the observations of Omojowo and Omojowo (2013) who noted that fishing creates employment opportunities for youth and women within families who may otherwise be unemployed. The PIND Foundation's experience in creating 1,629 new jobs through support to artisanal fisherfolks provides further evidence of the employment potential of the sector.

4.4 Contribution to Local Revenue

Table 4 presents the contribution of the fishing trade to local government (clan council) revenue. The Gbaramatu clan council collects a daily market levy of ₦50 per fish basin.

Table 4: Contribution to Local Revenue

Revenue Source	Amount
Daily market levy per fisherman	₦50
Number of active fishermen	340
Average active fishing days per month	20 days
Monthly revenue from levies	₦340,000

Annual revenue from levies	₦4,080,000
Total clan council annual IGR	≈₦11,657,143
Fishing contribution to IGR	35%

Source: Field Survey, 2026

The estimated monthly revenue from market levies is ₦340,000 (340 fishermen × 20 days × ₦50), and the annual revenue is ₦4.08 million. According to the clan treasurer (interview, 2026), this represents 35% of the council's internally generated revenue (IGR).

This finding demonstrates that the fishing trade makes a significant contribution to local government revenue in Gbaramatu Kingdom. The revenue generated from fishing levies supports the clan council's ability to provide basic services such as security, road maintenance, and community development projects. This is consistent with the observations of WorldFish (2017) which noted that fishing trade supports local governance through the collection of taxes and levies.

4.5 Hypothesis Testing

Hypothesis 1: Relationship between Fishing Participation and Income

Table 5 presents the results of the Pearson correlation and linear regression analysis testing the relationship between fishing experience and monthly income.

Table 5: Pearson Correlation and Regression Results

Model	Unstandardized B	Standardized Beta		t	Significance
(Constant)	45,000	5200		8.65	0.000
Years experience	7,500	980	0.62	7.65	0.000

Dependent variable: Monthly income (₦). $R^2 = 0.38$.

The Pearson correlation between years of fishing experience and monthly income was $r = 0.62$ ($p < 0.001$), indicating a significant positive relationship. The linear regression model showed that income = ₦45,000 + (₦7,500 × years of experience), with $R^2 = 0.38$. This means that each additional year of fishing experience increases monthly income by ₦7,500.

Decision: The null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. There is a significant positive relationship between participation in the fishing trade and average monthly household income (Imide, Chukwuka and Osadume, 2025; Osadume and Ibenta, 2018)

4.6 Discussion of Findings

The findings of this study reveal that the fishing trade makes a substantial contribution to household income, employment, and local government revenue in Gbaramatu Kingdom. The average monthly income of ₦105,000, while below the assumed population average, still represents a significant contribution to household welfare. The high proportion of household income derived from fishing (60-80% for 85% of respondents) indicates that

fishing is the primary livelihood activity for most households.

The employment generation capacity of the fishing trade is significant, with an estimated 6,600 persons directly and indirectly dependent on the sector. This finding is consistent with the input-output analysis which found that fishing exhibits high total multiplier effects. The employment multiplier effect of 2.3 persons per household means that for every active fisherman, approximately 2.3 additional persons are employed indirectly through the value chain.

The contribution of the fishing trade to local government revenue (₦4.08 million annually, representing 35% of IGR) demonstrates that the sector supports local governance and the provision of basic services. This finding highlights the importance of the fishing trade not only for household welfare but also for community development.

The significant positive relationship between fishing experience and income ($r = 0.62$, $p < 0.001$) indicates that experience is an important determinant of fishing income. This finding suggests that investments in training and capacity building could significantly improve fishing incomes. The regression model showing that each additional year of experience increases monthly income by ₦7,500 provides a quantitative basis for advocating for training and extension services.

5.0 CONCLUSION

This study assessed the contribution of the fishing trade to household income, employment generation, and local government revenue in Gbaramatu Kingdom, Delta State, Nigeria. The findings show that the fishing trade makes a substantial contribution to the economic well-being of fishing households and the local community. The average monthly income from fishing was ₦105,000 ± 32,000, contributing 60-80% to total household income for 85% of respondents. The fishing trade employed an average of 2.3 persons per household, generating approximately 4,600 indirect jobs across the value chain. Local revenue from fishing levies amounted to approximately ₦4.08 million annually, representing 35% of the clan council's internally generated revenue. The Pearson correlation showed a significant positive relationship between fishing experience and income ($r = 0.62$, $p < 0.001$), and the chi-square test confirmed that fishing significantly contributes to unemployment reduction ($\chi^2 = 45.3$, $p < 0.001$). Based on the findings, the following recommendations are made:

1. Investment in Cold Chain Infrastructure: The Delta State Government and development agencies should establish community-owned cold storage hubs in Okerenkoko and Oporoza to reduce post-harvest losses and improve income from fish sales. Given that postharvest losses of up to 40 percent are currently experienced due to the near-absence of cold chains, this investment would significantly improve household income.
2. Microcredit Scheme: Government and financial institutions should partner with the Bank of Industry (BOI) to provide low-interest loans (≤5% per annum) to fishing cooperatives, using fish catch as collateral substitute. Financial exclusion of artisanal fishers is a major constraint that needs to be addressed.
3. Strengthening Fishing Cooperatives: Fishing cooperatives should be strengthened to improve collective marketing, access to credit, and bargaining power. Training in cooperative management and business skills should be provided. The PIND Foundation's experience demonstrates that support to fisherfolk can drive significant investment

(3.37 billion NGN) and create jobs (1,629 new jobs).

4. Diversification of Income Sources: Training programs should be provided to fishing households to develop alternative livelihood activities such as aquaculture (fish farming) to reduce pressure on wild stocks and diversify income sources. The scaling up of aquaculture is not merely an economic growth option but a structural and nutritional necessity.
5. Policy Support: The Delta State Government should develop policies that recognize the economic importance of the fishing trade and provide support for infrastructure development, equipment modernization, and market access. The National Fisheries and Aquaculture Policy, 2025-2029, provides the operational framework for the growth of the fisheries and aquaculture sector.

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