

**ASSESSMENT OF FISH CONSUMPTION PATTERN IN LAGUTI SUB
COUNTY PADER DISTRICT**

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**A RESEARCH REPORT SUBMITTED TO THE RESEARCH
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Declaration

I Adong Alice, declare that the information contained in this research report is my own work and it has never been submitted to any institution of learning for any award and is being submitted with approval of my supervisor.



Signed.....

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Approval

The research report titled, "Assessment on fish consumption pattern in Laguti Sub-County Pader District", has been produced under my supervision and submitted with my approval to Busitema University Research Committee.

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(Supervisor)

Dedication

I dedicate this research report to my beloved parents, husband and family for their devoted and tireless support ever since the beginning of my academic journey. God bless them abundantly.

List of abbreviations

FAO	Food and Agriculture Organization
IUU	Illegal, Unregulated and Unreported
WHO	World Health Organization

Operational definitions of terms

Fish consumption pattern; refers to the frequency, quantity, and types of fish consumed by households in Laguti Sub- County.

Socio-economic factors; Characteristics of households, such as income level, education, and household size that influence fish consumption

Market access; the availability of fish markets and the ease with which households can purchase fish.

Cultural attitudes; the beliefs, values, and traditions that influence dietary choices, including the consumption of fish.

Household Nutrition; the contribution of fish to the overall dietary intake and health of household members.

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Abstract

Fish is a vital source of high-quality protein and essential micronutrients, yet its consumption remains low in many rural Ugandan communities, including Laguti Subcounty in Pader District. This study assessed fish consumption patterns and examined the socio-economic, cultural, and infrastructural factors influencing dietary choices among households. Despite proximity to water bodies such as River Aswa, fish remains underutilized in local diets in Laguti Sub County, raising concerns about nutrition and food security.

Using a cross-sectional design, data were collected from 80 respondents through structured questionnaires and interviews with household heads, fish vendors, and local leaders. The findings revealed that weekly fish consumption was most common (37.5%), followed by monthly (25%) and rare consumption (18.8%). Only 12.5% of households consumed fish daily, while 6.2% never consumed it. Income level, fish price, market access, and education were significant determinants of consumption. Medium-income households showed higher consumption rates, while affordability challenges limited access for low-income earners.

Cultural perception also influenced consumption patterns. While 62.5% of respondents reported no cultural restrictions, 25% acknowledged taboos or perceptions that discouraged fish consumption. Species such as catfish and silver cyprinid (*Rastrineobola argentea*) were sometimes avoided due to associations with poverty or perceived uncleanness. However, 87.5% of respondents viewed fish as a healthy food choice, citing benefits such as improved brain function and boosted immunity.

Barriers to fish access and consumption included high cost (50%), limited availability (25%), poor transport infrastructure (12.5%), and lack of storage facilities (6.2%). Although Laguti Sub County is geographically close to water bodies, infrastructural challenges and seasonal supply fluctuations constrained access. The absence of cold storage and poor road networks further limited distribution and preservation.

Encouragingly, 81.3% of respondents believed that government or community programs could improve fish availability. Suggested interventions included subsidizing fish prices, establishing more local fish markets, improving transport infrastructure, and promoting nutrition education. The study concluded that enhancing market access, supporting local aquaculture, and addressing socio-cultural perceptions could significantly increase fish consumption and improve household nutrition and food security in Laguti Sub County.

Chapter One

Introduction

1.1 Background to the study

Fish consumption patterns and the factors influencing them vary widely across the globe, shaped by socio-economic, cultural, environmental, and dietary factors. Globally, fish is considered a key source of nutrition, contributing significantly to protein intake and providing essential nutrients like omega-3 fatty acids, vitamins, and minerals (FAO, 2022). Fish consumption patterns are higher in coastal and lake regions where fishing communities reside. In regions with reduced access to marine or freshwater resources, fish consumption tends to be lower due to high costs, limited availability, or cultural preferences (Abila & Jansen, 2017).

Fish consumption is an important element of global diets and plays a key role in food security, especially in regions where other forms of protein are either scarce or expensive. Globally, the consumption of fish has been rising steadily over the past decades. According to the FAO (2022), fish accounted for about 20.5 kg per capita annually, making it one of the most consumed animal proteins worldwide with countries like China, being the largest consumers. The increase in global fish consumption is attributed to various factors such as population growth, rising incomes, urbanization, and increasing awareness of fish's nutritional benefits. Fish contains high-quality protein and essential nutrients such as omega-3 fatty acids, which are known for their positive effects on cardiovascular health and cognitive development. In addition, global fish production has diversified through the rapid growth of aquaculture, which now accounts for nearly half of the global fish supply (Padiyar et al., 2024). Despite this, there are significant disparities in fish consumption rates across the world, often dictated by geography, economic status, and cultural preferences.

In Africa, fish plays a crucial role in the diets of many communities, particularly those living along the coasts, rivers, and lakes (Obiero et al., 2019). It provides a vital source of affordable protein and other nutrients necessary for combating malnutrition, especially in rural communities. Africa accounts for about 2% of global fish consumption, with an average per capita consumption of 10 kg annually about half the global average (FAO, 2023). However, fish consumption patterns are not evenly distributed across the continent. Coastal countries such as Nigeria, Ghana, and Egypt

exhibit higher fish consumption levels, whereas inland regions, especially in arid or semi-arid areas, face lower consumption due to limited fish availability. Fish farming, or aquaculture, is expanding in Africa, but challenges related to poor infrastructure, inadequate regulation, environmental degradation, and overfishing hinder its full potential.

In sub-Saharan Africa, fish consumption rates are generally lower than global averages due to several factors, including limited access to fisheries and high levels of poverty (Nurul et al., 2016). In some countries, fish is an essential part of local diets, especially in regions close to water bodies like lakes, rivers, and coastal areas. However, in many landlocked regions, fish consumption remains constrained by the lack of infrastructure for transporting and storing fresh fish (Vitale, et al., 2020). Additionally, overfishing, environmental degradation, and climate change have led to declining fish stocks in some regions. This has further complicated efforts to increase fish consumption, especially in rural and food-insecure areas. The growing aquaculture sector in countries such as Uganda, Kenya, and Nigeria presents an opportunity to increase fish supply and stabilize consumption patterns in the region (Ndagire et al., 2019). However, despite these developments, many rural households in the region continue to struggle with access to fish as a regular part of their diets, relying on local sources of protein like meat and legumes.

East Africa, particularly the areas around Lake Victoria, heavily relies on fish as a source of nutrition. Uganda, Kenya, and Tanzania are key producers of freshwater fish, particularly Nile Perch and Tilapia. However, overfishing and poor management practices have led to a decline in fish stocks, affecting availability and affordability for consumers. Fish consumption in East Africa is predominantly local, with exports making up a significant portion of the fish trade, especially in Uganda (Nabuuma et al., 2018).

Uganda is one of the largest fish-producing countries in East Africa, with fishing being a major economic activity, particularly around Lake Victoria, Lake Kyoga, and the Albert Nile (Kabwama et al., 2019). Uganda's fish production has grown significantly, driven by both capture fisheries and aquaculture. However, despite the country's relatively large fish production capacity, local consumption of fish remains below the global average (Isingoma et al., 2017). On average, fish consumption in Uganda stands at around 8 kg per capita annually, a figure that is far lower than the 12.5 kg recommended by the World Health Organization (WHO) for maintaining a healthy diet (UBOS & ICF, 2018). The discrepancy between fish production and consumption in Uganda can

be explained by several factors. Kajjura et al., (2019) argues that while fishing communities around the major lakes have easy access to fish, other regions, particularly inland and rural areas, face challenges such as limited market access, high fish prices, and lack of cold storage facilities, leading to reduced consumption. Furthermore, cultural preferences for other protein sources, like beans and meat, also influence the patterns of fish consumption in Uganda.

Pader District, located in the northern region of Uganda, is a predominantly agrarian community where most households rely on crop farming and small-scale livestock production for their livelihoods (Isabirye et al., 2020). Despite the district's proximity to water bodies such as the River Aswa, fish consumption remains relatively low compared to other regions in Uganda. The reasons behind the low consumption include poor market access, low awareness of the nutritional benefits of fish, economic barriers, and cultural preferences for other protein sources like beans and meat (Tamale et al., 2017). The district was severely affected by the civil conflict in northern Uganda, and many communities are still recovering from its impact on their livelihoods, which has also affect food security and dietary choices. Limited access to fish markets and the lack of infrastructure for fish storage and transportation have further hindered fish consumption in this region.

Laguti Sub-county is one of the administrative units within Pader District, characterized by rural, agrarian communities that primarily engage in crop farming and livestock rearing. Fish consumption in Laguti Sub-county is not well documented, but anecdotal evidence suggests that fish is consumed less frequently than other protein sources such as beans and meat (Kiritu-Hilda, et al., 2018). This could be attributed to several factors, including limited access to fish markets, low household income levels, and a lack of knowledge about the nutritional benefits of fish. In addition, cultural preferences for other protein sources may influence dietary choices. Despite the presence of nearby water bodies, fishing activities are not widely practiced in the sub-county, and most fish consumed in the area is either imported from neighboring districts or purchased from informal markets. There is a need to better understand the factors that influence fish consumption in Laguti Sub-county, including the socio-economic, cultural, and infrastructural barriers that may prevent households from incorporating fish into their diets.

1.2 Problem statement

Fish is recognized as an essential source of high-quality protein and critical nutrients like omega-3 fatty acids, vitamins, and minerals (FAO, 2022). In an ideal situation, fish should be a regular component of diets, contributing to improved nutrition, health, and food security, especially in regions like Laguti Sub-County, where food insecurity is a pressing concern (Linderhof et al., 2016). Ideally, communities with access to water bodies should exhibit higher fish consumption patterns due to proximity to natural resources and the availability of fish (Tamale & Kagoro-Rugunda, 2019).

However, the reality in Laguti Sub-County paints a different picture. Fish consumption remains remarkably low, even though the sub-county has access to nearby water bodies, such as the River Aswa (Kadongola & Ahern, 2023). Factors contributing to this low consumption remain largely unknown but are suspected to include cultural beliefs, limited access to fish markets, low household incomes, poor infrastructure, and cultural preferences for other protein sources (Kifuko, 2015). The socio-economic challenges faced by residents, many of whom rely on subsistence farming for their livelihoods, may also play a role in limiting their ability to purchase or access fish regularly (Namulawa et al., 2017). Furthermore, awareness of the nutritional benefits of fish may be low, influencing dietary choices away from fish consumption.

In addition to these factors, the absence of reliable data on fish consumption patterns in Laguti Sub-County has created a knowledge gap that hinders effective policy interventions. There is currently no comprehensive data on the frequency, quantity, and types of fish consumed by households in Laguti Sub-County, making it difficult to address the issue of low fish consumption and develop strategies to promote fish as a regular part of the diet. This study intended to fill this gap by assessing the fish consumption patterns in Laguti Sub-County and identifying the key factors that influence these patterns

1.3 Study objectives

1.3.1 Main objectives

To assess the fish consumption patterns in Laguti Sub-County, Pader District.

1.3.2 Specific objectives

1. To identify socio-economic factors affecting fish consumption among households.

2. To analyze the influence of perceptions on fish consumption.
3. To evaluate the barriers to accessing and consuming fish in the community.

1.4 Research questions

1. What are the socio-economic factors affecting fish consumption in Laguti Sub-County?
2. What influence do perceptions have on fish consumption in Laguti Sub-County?
3. What barriers hinder regular fish consumption by households in Laguti Sub-County?

1.5 Justification of the study

Fish is an affordable and accessible source of high-quality protein and essential nutrients that can significantly contribute to improving household nutrition and food security in rural areas like Laguti Sub- County. However, due to the observed low fish consumption rates in the region, understanding the underlying factors affecting fish consumption is critical for designing effective interventions. By investigating the socio-economic, cultural, and infrastructural barriers to fish consumption in Laguti Sub- County, this study provided valuable insights for policymakers, development organizations, and health professionals seeking to promote better nutrition and food security in the region. Additionally, this research may contribute to the growing body of knowledge on food consumption patterns in rural Uganda, where data on fish consumption is currently limited. The findings may help inform future interventions aimed at promoting fish consumption and improving dietary diversity among rural households in Uganda.

1.6 Scope of the study

1.6.1 Geographical scope

The study was conducted in Laguti Sub- County, Pader District, Northern Uganda. The sub-county is predominantly rural, with a strong agricultural base and limited infrastructure for fish trade.

1.6.2 Content scope

The study focused on assessing fish consumption patterns as the dependent variable and influencing factors such as socio-economic, market accessibility, as well as cultural as the independent variables. It also explored the challenges and opportunities for increasing fish consumption in the region.

1.6.3 Time scope

The study covered a period of 9 months, with data collection and analysis taking place from October 2024 to June 2025.

1.7 Significance of the study

The study may provide the researcher with a deeper understanding of fish consumption patterns and the socio-economic and cultural factors influencing dietary choices. It may also contribute to the researcher's academic growth and fulfillment of degree requirements.

To the people of Laguti Sub-County, the findings of the study may help to raise awareness of the nutritional value of fish and encourage increased consumption, potentially improving household nutrition and food security.

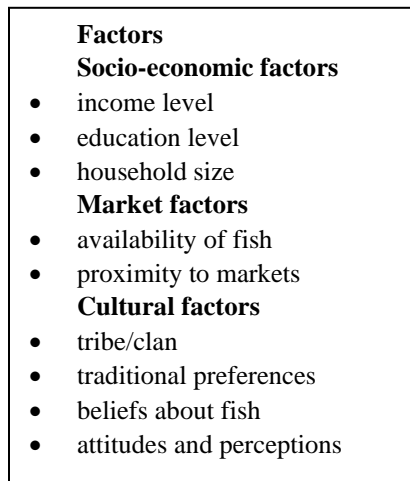
The study may offer valuable insights for policymakers in designing and implementing strategies to improve fish consumption and enhance market accessibility in rural areas like Laguti.

This study may provide a foundation for future research on fish consumption patterns in rural Uganda, filling a critical gap in the literature and serving as a reference point for related studies.

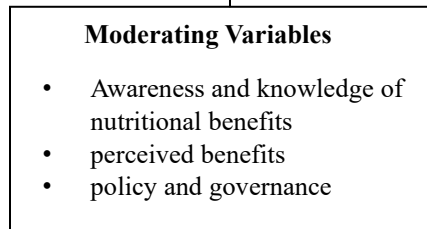
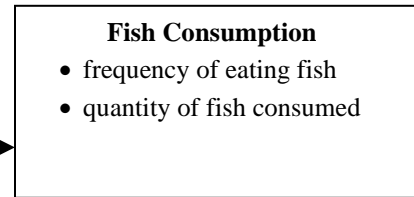
1.8 Conceptual framework

The study looked at fish consumption patterns as the independent variable and factors including factors such as socio-economic, market and cultural as the dependent variable. The dependent variable (DV) measured the outcome of the independent variables (IVs). The observed variations in the DV result from the effects the IVs has on the dependent. However, the two sets of variables worth through intervening variables. A conceptual model developed below (Figure 1.1) was intended to facilitate an understanding of how different factors influence fish consumption patterns in Laguti Sub- County.

Independent variables



Dependent variables



Source: Researcher 2025

Figure 1.1: Conceptual framework showing fish consumption and influencing factors

Chapter Two

Literature review

2.0 introduction

This chapter consisted of scholarly material about fish consumption patterns in communities. It based on themes that reflected the research objectives. Literature was reviewed as; socio-economic factors affecting fish consumption among households, influence of cultural beliefs and perceptions on fish consumption and barriers to accessing and consuming fish in the community.

2.1 Socio-economic factors affecting fish consumption among households

Fish consumption plays a crucial role in providing essential nutrients such as protein, omega-3 fatty acids, and vitamins that contribute to the overall health and well-being of individuals. However, various socio-economic factors significantly influence fish consumption patterns among households, shaping both the accessibility and affordability of fish. Understanding these factors is critical for formulating policies and interventions that can improve household nutrition and food security (FAO, 2023).

2.1.1 Income levels

In their study Hyuha et al., (2017) indicate that household income is one of the most significant determinants of fish consumption. Higher-income households tend to consume more fish, as they can afford higher-priced and better-quality varieties such as tilapia, catfish, or exotic fish species. In low-income households, fish consumption is often lower, and they may rely on cheaper, lower-quality, or smaller fish, leading to less dietary diversity. Income inequality can result in disparities in access to fish, especially in regions where fish is a premium commodity. In regions where fish prices are volatile due to market fluctuations or supply constraints, low-income families may substitute fish with cheaper protein sources, such as beans or meat. Therefore, income levels directly affect the purchasing power and dietary decisions of households.

2.1.2 Price of fish

According to Uttam & Adewale (2023). the cost of fish varies significantly based on factors such as location, fish type, and supply chain efficiency. In rural areas where fishing is a primary livelihood, fish prices may be lower, leading to higher consumption. Conversely, in urban areas or

regions far from water bodies, the price of fish may rise due to transportation costs, middlemen, and demand-supply gaps. When fish becomes too expensive, many households may either reduce their consumption or avoid it altogether. Price elasticity also comes into play, as consumers in different income brackets respond differently to price changes. For low-income households, even a small increase in fish prices can push them to explore cheaper alternatives. For wealthier households, price increases may have minimal impact on their consumption patterns.

2.1.3 Household size and composition

Halasi et al. (2024) states that size and composition of a household significantly influence fish consumption. Larger households tend to have greater food requirements, and depending on the income and availability, they may consume larger quantities of cheaper fish. On the other hand, smaller households, especially those with higher disposable incomes, may prioritize quality over quantity and consume more expensive fish varieties. Moreover, household composition, such as the presence of children or elderly members, also affects fish consumption. For instance, households with young children tend to prioritize fish as a source of essential nutrients critical for growth and development. However, households with elderly members may face dietary restrictions that either encourage or limit fish consumption.

2.1.4 Education and awareness

Education levels within households greatly influence fish consumption patterns. Educated household members, particularly those with knowledge of nutrition, are more likely to prioritize fish as part of a balanced diet. Education creates awareness of the health benefits of consuming fish, such as improved heart health, brain function, and overall well-being. In some cases, households with higher education levels are better able to distinguish between different fish species and their nutritional value, prompting more informed purchasing decisions. They may also be more aware of the risks of overconsumption of certain fish that could be high in contaminants like mercury, influencing their choices (Kadongola & Ahern, 2023).

2.1.5 Cultural preferences, perceptions and traditions

Socio-cultural perceptions and traditions play a significant role in shaping fish consumption habits. In some communities, fish may be a staple food, consumed regularly during meals, and integral to traditional dishes. For example, in coastal regions or communities near lakes and rivers, fish is

often a central part of the diet. However, in other regions, cultural taboos, beliefs, or religious practices may restrict or discourage fish consumption. For instance, certain communities may view fish as a delicacy to be consumed only on special occasions, while others may have preferences for specific types of fish based on cultural or religious customs (Uttam & Adewale, 2023).

2.1.6 Availability and accessibility of fish

According to Kiritu-Hilda et al., (2018) geographical location is another key determinant of fish consumption. Households residing near water bodies, such as lakes, rivers, or coastal areas, typically have easier access to fresh fish, leading to higher consumption. In contrast, households in landlocked or remote regions may face challenges in accessing fish due to transportation difficulties, high costs, or limited market availability. Additionally, seasonal variations in fish supply can also affect consumption patterns. In regions where fishing activities are seasonal, households may experience periods of abundance and scarcity, leading to fluctuating consumption levels. During off-seasons, fish prices may rise, further limiting access for low-income households.

2.1.7 Urbanization and lifestyle changes

Urbanization and the shift towards a more modern, fast-paced lifestyle have influenced dietary habits, including fish consumption (Kifuko, 2015). In urban areas, where fast food and processed food options are increasingly available, households may opt for convenience over fresh fish, especially when preparing fish is perceived as time-consuming. Moreover, urban households often have more access to a diverse range of food products, including imported fish varieties, seafood, and fish-based products such as canned fish. This diversification of food options, combined with higher income levels, can lead to greater fish consumption in urban settings compared to rural areas (Kadongola & Ahern, 2023).

2.1.8 Gender roles and decision-making in food consumption

According to Tamale & Kagoro-Rugunda (2019) gender dynamics within households often affect dietary choices, including fish consumption. In many cultures, women are responsible for household food preparation and may influence decisions about which types of food are purchased and consumed. If women have control over household finances and are aware of the nutritional benefits of fish, they may prioritize its inclusion in the diet. Additionally, gender roles may affect the way fish is distributed within the household. In some patriarchal cultures, men or elder family

members may receive the best portions of fish, while women and children receive lesser amounts, which could influence the overall nutritional intake of different household members.

2.1.9 Government policies and subsidies

Government policies aimed at promoting food security, nutrition, and local fish production can also impact fish consumption. For example, policies that support fish farming, regulate fish prices, or provide subsidies for fish products can make fish more affordable and accessible to households, particularly in low-income or rural areas. Additionally, public health campaigns promoting the benefits of fish consumption can increase awareness and influence households to include fish in their diets. Government interventions in building infrastructure for fish processing, storage, and distribution also ensure that fish remains accessible to more households throughout the year (Isingoma et al., 2017).

2.1.10 Social status and aspirations

Social aspirations and status can play a subtle yet influential role in fish consumption. In some societies, certain fish varieties are considered a sign of affluence, leading households to consume them during special events or to demonstrate social status. Similarly, high-income families may consume exotic or imported fish species to reflect their social standing. However, in some low-income contexts, fish may be viewed as food for the poor, leading wealthier households to avoid its consumption in favor of more expensive alternatives. These social perceptions can shape the demand for various types of fish within different socio-economic groups (Kajjura, Veldman & Kassier, 2019).

2.2 Influence of cultural beliefs and perceptions on fish consumption

Cultural beliefs and perceptions significantly shape dietary practices, including fish consumption. These beliefs are often rooted in traditions, religious practices, and societal norms, influencing whether fish is considered a desirable or undesirable food. Understanding the cultural context of fish consumption is important for promoting healthier dietary habits, addressing food security, and designing effective nutrition policies.

2.1.1 Religious beliefs and dietary restrictions

According to Kiritu-Hilda et al., (2018) religious beliefs are among the most prominent cultural factors that affect fish consumption. Different religions have specific dietary laws that either

encourage or restrict the consumption of certain types of fish. In Islamic tradition, the concept of "halal" (permissible) governs the consumption of fish. Most fish are considered halal and widely consumed, especially in Muslim-majority regions. However, some interpretations of Islamic law classify shellfish and certain bottom-feeding fish as "haram" (forbidden), thus restricting their consumption. Additionally, during Ramadan, fish consumption may increase in certain communities as people seek lighter, nutritious meals to break their fast.

Hindu dietary customs vary widely, but many Hindus practice vegetarianism, particularly in more devout sects. In some regions of India and Nepal, fish is considered a sacred food and is widely consumed, especially in coastal and riverine areas. However, other Hindu communities, particularly those that follow strict vegetarian diets, avoid fish altogether. In Bengal, for example, fish is revered and considered essential to the diet, while in states like Gujarat, strict vegetarianism excludes fish from the diet (Can et al., 2015).

Christian denominations have varying attitudes toward fish consumption. Roman Catholics, for instance, traditionally avoid meat on Fridays, particularly during Lent, and instead consume fish. This practice is still observed in many Catholic communities around the world, contributing to an increase in fish consumption during religious observances (Linderhof et al., 2016).

In Jewish dietary laws (Kashrut), fish with fins and scales are considered kosher and can be consumed. Shellfish and other types of fish that lack fins and scales are prohibited. This cultural rule heavily influences the types of fish that Jewish communities include in their diets. Religious beliefs can significantly determine when and how much fish is consumed, which types are permissible, and the cultural significance of fish in daily life and religious ceremonies (Nurul et al., 2016).

2.2.2 Fish as a cultural symbol and traditional staple

In many cultures, fish holds symbolic significance and is closely associated with cultural identity. The role of fish as a traditional staple food is particularly evident in coastal and fishing communities where fish has been a primary source of protein for centuries. In many coastal regions, fish is deeply intertwined with cultural heritage. In places like Japan, fish plays a central role in the diet and is consumed in various forms, such as sushi and sashimi. Fish is also a symbol of prosperity and is often used in traditional ceremonies and celebrations. Similarly, in

Mediterranean cultures, fish consumption has strong historical roots, with seafood being a significant part of the Mediterranean diet, known for its health benefits (Namulawa et al., 2017).

Kadongola and Ahern, (2023) stated that in communities along rivers, lakes, or inland water bodies, fish often serves as a major dietary staple. For example, in East Africa's Great Lakes region, fish such as tilapia and Nile perch are integral to local cuisine. The cultural practices surrounding fish consumption may involve traditional methods of fishing, preparation, and communal sharing, further cementing its cultural importance. In these communities, fish is not merely food but a cultural symbol that represents livelihood, sustenance, and tradition. Consumption patterns are closely tied to the seasonal availability of fish, local fishing practices, and the cultural significance of fish in everyday life.

2.2.3 Cultural taboos and superstitions

According to Kifuko (2015) certain taboos or superstitions govern fish consumption in some cultures. These beliefs can stem from historical, religious, or environmental factors, and they influence the attitudes of communities toward fish. In some cultures, particular species of fish are considered taboo and are not consumed. This may be due to religious prohibitions, historical associations with illness or danger, or beliefs that certain fish species are sacred or unclean. For instance, some communities in sub-Saharan Africa avoid eating catfish, considering it "unclean" due to its scavenging behavior at the bottom of water bodies. Other cultures may view the consumption of certain fish as a bad omen, especially during specific periods or in specific circumstances.

Namulawa et al., (2017) revealed that superstitions impact fish consumption, with beliefs varying widely between regions. Some communities believe that eating certain types of fish may bring bad luck or illness. For example, in parts of Southeast Asia, some fish are avoided because of the belief that they carry the spirits of ancestors or gods. This spiritual association with fish can lead to the avoidance of specific fish species or entire categories of seafood. These cultural taboos and superstitions have a strong influence on local fish markets, consumption patterns, and even government policies regarding fish promotion and conservation.

2.2.4 Perceptions of fish quality and health benefits

Cultural perceptions of fish quality and its associated health benefits are another important factor influencing consumption. In many societies, fish is considered a high-quality food with numerous health benefits, especially rich in omega-3 fatty acids, proteins, and vitamins. This belief drives higher consumption among health-conscious households and communities (Isabirye et al., 2020).

According to Kajjura et al., (2019) in health-conscious cultures, fish is seen as a nutritious alternative to red meat, especially for reducing the risk of heart disease, stroke, and cognitive decline. This is particularly evident in countries like Japan, where fish is consumed as part of a diet that is globally recognized for promoting longevity. Similarly, in the Mediterranean, the health benefits of a diet rich in fish have been celebrated, making fish an important part of daily meals.

On the other hand, some cultural perceptions may limit fish consumption due to concerns about its safety. Issues such as overfishing, pollution, and contamination (e.g., mercury levels in certain species) can lead to public distrust in fish products. In communities where these concerns are prevalent, fish consumption may decline, even when fish is traditionally considered a healthy and valuable food (Linderhof et al., 2016).

2.2.5 Social status and fish consumption

Fish consumption is sometimes linked to social status, where certain types of fish are seen as delicacies or luxury items reserved for the wealthy. In many cultures, expensive or exotic fish species such as salmon, tuna, or lobster are viewed as status symbols, and their consumption is a mark of affluence. In some societies, the ability to purchase and consume high-end fish species is seen as a sign of wealth and social standing. This is evident in globalized markets where the demand for premium fish drives up prices, making certain types of fish exclusive to upper-income households. This trend is especially pronounced in urban areas where access to a wide range of seafood, including imported varieties, is a measure of social prestige (Can et al., 2015).

Conversely, in other cultures, fish is considered "poor man's food" and is associated with lower social status. This is common in regions where fish is abundant and affordable, making it a staple for low-income households. In these contexts, wealthier individuals may avoid fish in favor of more prestigious food items like red meat or processed foods. Social perceptions of fish can

therefore both increase and decrease consumption, depending on the cultural context and the type of fish being consumed (Can et al., 2015).

According to Anyanwu, (2014) cultural beliefs and perceptions play a profound role in shaping fish consumption across different communities. Religious practices, cultural taboos, traditional knowledge, and social status all contribute to how fish is valued and consumed. While fish is regarded as a nutritious and vital part of the diet in many cultures, superstitions, taboos, and concerns about safety can limit its consumption. To promote healthier dietary habits and address food security challenges, it is essential to consider these cultural factors when designing interventions to encourage fish consumption. Recognizing and respecting the diverse cultural beliefs surrounding fish will help improve access to this important food source while honoring cultural traditions and practices.

2.3 Barriers to accessing and consuming fish in the community

Fish is a critical source of high-quality protein, essential fatty acids, and micronutrients, contributing to food security and nutritional well-being. Despite its nutritional value, many communities face significant barriers to accessing and consuming fish. These challenges are shaped by socio-economic, geographic, cultural, and environmental factors that limit the availability, affordability, and acceptability of fish in the diet.

2.3.1 Economic barriers

According to Vitale et al., 2020, high cost of fish is one of the most prominent barriers to fish consumption is its cost. In many regions, fish is more expensive than other protein sources, such as poultry, beans, or red meat, due to factors such as limited supply, seasonal variations, and high demand. The cost of fish may increase further due to transportation and distribution costs, especially in landlocked or rural areas far from fishing communities or coastal regions. In low-income households, the high cost of fish limits access, as families may prioritize cheaper alternatives. Price fluctuations due to market demand, environmental factors, or overfishing can also lead to significant variability in fish prices, making it unaffordable for many households, especially during off-seasons when fish is scarce.

Inconsistent income in communities where households have irregular or low incomes, limits the ability to purchase fish regularly. People with inconsistent income streams, such as smallholder

farmers or seasonal workers, may only be able to afford fish during certain periods of the year. During times of financial hardship, households are likely to forgo fish in favor of more affordable staples, further contributing to low fish consumption levels (Simmance et al., 2022).

2.3.2 Geographical barriers

Distance from water bodies access to fish is highly dependent on proximity to lakes, rivers, or oceans. Communities that are located far from natural water bodies face significant geographic barriers to accessing fresh fish. In such areas, fish is transported over long distances, which adds to the cost and limits the availability of fresh fish in local markets. This is particularly true in landlocked regions or arid areas where local fish production is minimal or non-existent (Nurul et al., 2016).

Poor transportation networks and infrastructure limit fish distribution. In areas with underdeveloped roads, inadequate cold storage facilities, and unreliable transportation, it is difficult to transport fish efficiently. As a result, fish gets spoiled before reaching markets, or its quality degraded due to improper handling. This leads to reduced availability in local markets and higher prices for fresh fish, pushing consumers to rely on less nutritious alternatives, such as canned or processed fish products (Abila & Jansen, 2017).

2.3.3 Environmental barriers

According to Yuanyang, et al. (2021) overfishing is a critical environmental challenge that has led to the depletion of fish stocks in many regions. As natural fish populations decline, access to fish becomes increasingly difficult. Overfishing affects both marine and freshwater species, limiting the availability of fish for local consumption. This problem is compounded by illegal, unregulated, and unreported (IUU) fishing practices that exacerbate stock depletion and hinder sustainable fisheries management. In many communities that rely on fish as a primary protein source, the declining availability of fish forces households to either reduce their consumption or switch to lower-quality fish or other protein sources.

Pollution of water Bodies pollution of lakes, rivers, and coastal areas poses a significant threat to fish populations and, consequently, fish consumption. Industrial waste, agricultural runoff, and domestic pollutants contaminate water bodies, leading to fish kills, habitat destruction, and the accumulation of harmful substances, such as heavy metals, in fish. Concerns about the safety of

consuming fish from polluted waters can discourage households from purchasing fish, even when it is available. In some cases, polluted environments reduce the supply of fish to local markets, further limiting access (Uttam & Adewale, 2023).

Climate change climate change also presents a major barrier to accessing fish. Rising water temperatures, changes in water acidity, and shifting weather patterns affect fish habitats, breeding cycles, and migration patterns. This can lead to the collapse of local fisheries, reduced fish stocks, and seasonal shortages, making fish more expensive and less available. In addition, extreme weather events, such as floods and storms, can disrupt fishing activities, destroy fishing infrastructure, and impair supply chains, reducing fish availability for extended periods (Hyuha et al., 2017).

2.3.4 Cultural and social barriers

According to Namulawa et al., (2017) cultural beliefs and taboos surrounding fish consumption present significant barriers. In some communities, certain fish species are viewed as unclean or taboo, and their consumption is avoided. For example, scavenging fish like catfish or bottom-dwelling species are sometimes considered unfit for consumption due to cultural perceptions of their feeding habits. Such taboos reduce the variety of fish available to a community, limiting fish consumption. In some cases, religious dietary restrictions also affect fish consumption. Communities that follow strict religious practices, such as some Hindu or Buddhist groups that embrace vegetarianism, may avoid fish altogether. Additionally, traditional preferences for other protein sources, such as red meat or poultry, can reduce demand for fish, especially in regions where fish has not historically been part of the staple diet.

Lack of knowledge and awareness about the nutritional benefits of fish also hinders consumption. In some communities, people may not be aware of the health advantages of including fish in their diet, such as its role in preventing malnutrition and providing essential nutrients like omega-3 fatty acids. This lack of awareness, combined with a preference for more familiar or traditional foods, can limit fish consumption even in areas where it is available (Kiritu-Hilda et al., 2018).

2.3.5 Barriers related to fish quality and safety

Concerns about fish safety of fish in some communities, especially related to contamination from pollutants, heavy metals, or chemicals, deter consumption (Isabirye et al., 2020). In areas where

water bodies are known to be polluted, or where there is a lack of proper fish handling and storage infrastructure, consumers may avoid purchasing fish out of fear of foodborne illnesses (Isingoma et al., 2017). For example, contamination with mercury in certain fish species has led to warnings and advisories, particularly for pregnant women and children, reducing fish consumption in some populations.

According to Kiritu-Hilda et al., (2018) the preference for fresh fish over processed or frozen fish act as a barrier to fish consumption. In communities where fresh fish is unavailable due to geographic isolation or poor market infrastructure, households may be reluctant to consume frozen or canned fish, which they may perceive as inferior in quality limiting the overall consumption of fish, even when processed fish products are available.

2.3.6 Market and supply chain barriers

According to Nabuuma et al., (2018) inadequate fish market infrastructure, such as a lack of cold storage, processing facilities, and hygienic market conditions, limit access to high-quality fish. In many rural or underdeveloped areas, fish markets do not have the necessary facilities to preserve fish freshness, leading to spoilage and waste. Poor market hygiene deters consumers from purchasing fish due to concerns about contamination or food safety.

In their study Isingoma et al., (2017) reveal that unreliable supply chains result in inconsistent access to fish, particularly in regions where fish is transported over long distances. Interruptions in the supply chain, caused by factors such as transportation issues, infrastructure breakdowns, or seasonal fluctuations, lead to shortages or delays in fish reaching markets. This makes fish less accessible and drive-up prices, particularly for communities that rely on external sources for their fish supply.

2.3.7 Gender and social inequality

In many communities, gender roles influence decision-making around food purchases and preparation (Tamale et al., 2017). In households where women are responsible for selecting and preparing meals, their access to markets, financial resources, and nutritional knowledge directly affects fish consumption. If women lack the resources or decision-making power to purchase fish, or if they are not aware of the nutritional benefits of fish, household consumption may be limited.

Social inequalities, including disparities in income, education, and access to resources, can exacerbate barriers to fish consumption. Marginalized groups, such as low-income families, women, and rural communities, often face greater obstacles in accessing fish due to financial constraints, limited access to markets, and reduced purchasing power. These inequalities result in unequal access to nutritious foods like fish, contributing to malnutrition and food insecurity (Kifuko, 2015).

Chapter Three

Research methodology

3.0 Introduction

This chapter presents the methods that were followed in managing the study. It discusses different aspects such as research design, study area, study population, sample size and determination, sampling techniques and procedure, data collection methods, data quality control, data analysis and research procedure.

3.1 Research design

This study employed a cross-sectional research design, integrating both quantitative and qualitative approaches to data collection and analysis. The cross-sectional design was suitable as it allows for data collection at a single point in time from a diverse population. The quantitative approach provided measurable data, while the qualitative aspect yielded in-depth insights into fish consumption patterns, cultural beliefs, and perceptions influencing these behaviors.

3.2 Study area

The study was carried out in Laguti Sub County located in Pader District, Northern Uganda. It is characterized by a mix of geographical features, including flat terrain and occasional undulating hills. The vegetation of the area consists primarily of savannah grasslands, with scattered trees typical of northern Uganda's climate. The region experiences a tropical climate, with distinct wet and dry seasons, supporting subsistence farming, which is the dominant economic activity. The population comprises mostly rural communities involved in small-scale agriculture, fishing, and livestock rearing. The decision to conduct the study in Laguti Sub County was based on the community's dependence on fish as a protein source, yet little research existed on fish consumption patterns, barriers, and socio-cultural influences in this region.

3.3 Study population

The study targeted various groups of respondents including Household heads, Fish vendors and market traders, local leaders and cultural elders. Each group was selected to provide valuable information on fish consumption patterns and related factors. Household heads were selected because they managed family food consumption and hence provided insights into household fish

consumption. Fish vendors and market traders provided an understanding of fish supply, availability, and market factors while local leaders and cultural elders offered qualitative insights on community beliefs, cultural perceptions, and food preferences related to fish. The selection of these categories was justified by their involvement and influence in fish consumption decisions, supply chain management, and local cultural beliefs.

3.4 Sample size and determination

A sample size of 80 respondents was determined using a sample determination formula by Krejcie & Morgan at 95% level of confidence, with 5% as the tolerable error. This method ensured that the sample is statistically significant to represent the population of interest while being manageable within resource constraints. In this case the sample was determined as follows;

N	S	N	S	N	S	N	S	N	S
10	10	100	→80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368

Note N is Population Size, S is Sample Size Source: Krejcie and Morgan, 1970

3.5 Sampling procedure/techniques

Simple random sampling; this technique was used to select households in Laguti Sub County. Each household had an equal chance of being selected, ensuring that the sample was representative of the population. A random number table was employed to randomly select households from a list of all households in the area with the help of local leaders.

Purposive sampling; this was applied to select key informants such as fish vendors, cultural leaders, and health professionals. These individuals were selected based on their specialized knowledge and roles in fish consumption, supply, and nutrition within the community.

3.6 Data sources

Primary data was collected directly from respondents through questionnaires and interviews. Primary data focused on current fish consumption habits, socio-economic factors, and cultural influences. Secondary data on the other hand was sourced from relevant literature, reports, and statistics from local health centers, market records, and governmental databases on fish consumption in Pader District.

3.7 Data collection methods

Questionnaire surveys; structured questionnaires were administered to household heads. These included both open-ended and close-ended questions to capture quantitative data on household fish consumption, preferences, socio-economic factors, and market behavior.

Interviews; semi-structured interviews were conducted with fish vendors, local leaders, and health professionals. These helped explore the qualitative aspects of fish consumption, such as cultural beliefs, market trends, and health-related perceptions.

3.8 Data collection tools

Questionnaire; a structured questionnaire with sections on household demographics, fish consumption habits, and socio-economic factors influencing consumption will be designed. The questionnaire will be translated into the local language to ensure clarity and accuracy.

Interview guide; a semi-structured interview guide with questions will be designed to elicit detailed qualitative data from key informants. The guide focused on themes such as cultural attitudes towards fish, supply chain challenges, and the role of fish in local diets.

3.9 Data quality control

To ensure validity, the questionnaire and interview guide underwent pre-testing in a nearby sub-county with similar characteristics. Feedback was used to refine the questions and improve clarity. On the other hand reliability of the data collection tools was assessed using the test-retest method, whereby the questionnaire was administered to a small group of respondents twice, at different times, to check for consistency in responses.

3.10 Data management

Collected data was organized, coded, and entered into a statistical software (e.g., SPSS) for analysis. Confidentiality was maintained by assigning identification codes to responses instead of using names.

3.11 Data analysis

Descriptive statistics such as frequencies and percentages were used to summarize household demographics and fish consumption patterns. A chi-square test was conducted to determine relationships between variables such as household income and fish consumption whereas logistic regression analysis was used to explore the effect of multiple factors (e.g., income, education, cultural beliefs) on the likelihood of fish consumption. This helped identify key predictors of fish consumption behavior.

3.12 Ethical considerations

Ethical approval was sought from the relevant university ethics committee at Busitema University while permission to conduct the study was obtained from local authorities in Laguti Sub County. Written consent was sought from each respondent after explaining the purpose, benefits, and potential risks of the study. Respondents were informed of their right to withdraw at any stage. Respondent identities remained confidential, and data was presented without any personal identifiers. Participation was voluntary, and respondents had the right to withdraw from the study at any point. Efforts were made to ensure the study respects the privacy, dignity, and cultural values of the respondents.

3.13 Anticipated study limitations and mitigation measures

The study's budget was constrained by financial resources, affecting the size of the sample or the scope of data collection. Budget constraints were managed by optimizing the sample size and focusing on efficient data collection methods.

Time was a limiting factor for the study. Given the limited time for data collection, a detailed schedule was developed to ensure that all fieldwork was completed within the allotted time.

Non-compliance of respondents: Some respondents were unwilling to participate or provide incomplete data. This was mitigated by clear communication of the study's benefits and ensuring respondent privacy.

Chapter Four

Presentation of Results

4.0 Introduction

This chapter presents the analysis and interpretation of the results obtained from the field. The study was particularly interested in assessing fish consumption pattern in Laguti Sub County, Pader district. Questionnaires were administered to eighty (80) respondents, and the process was completed by 10th July, 2025. All the eighty respondents ably answered and returned the questionnaires giving a response rate of 100%.

4.1 Socio-economic characteristics of respondents

This sub-section presents the socio-demographic features of 80 respondents sampled. The key demographic characteristics researched for the study included; gender, age bracket, marital status, education level, household size and primary occupation. These features were found to be of great help in clearly depicting the diverse background of the sample population.

Table 4.1: Distribution of respondents by socio economic characteristics(n=80)

Variable	Categories	Frequency	Percentage
Sex	Male	48	60
	Female	32	40
	Total	80	100
Age	Below 18 years	5	6.3
	18–25 years	15	18.8
	26–35 years	25	31.3
	36–45 years	20	25.0
	46–60 years	10	12.5
	Above 60 years	5	6.3
	Total	80	100
Marital Status	Single	20	25.0
	Married	50	62.5
	Widowed	5	6.3
	Divorced/Separated	5	6.3
	Total	80	100
Household size	1–3 members	10	12.5
	4–6 members	40	50.0
	7–9 members	20	25.0
	10 or more members	10	12.5
	Total	80	100
Primary occupation	Farmer	40	50.0

	Fisherman/Fisherwoman	20	25.0
	Trader	10	12.5
	Civil servant	10	12.5
	Total	80	100
Education level	No formal education	15	18.8
	Primary	30	37.5
	Secondary	25	31.3
	Tertiary/University	10	12.5
	Total	80	100

4.1.1 Distribution of respondents by sex

As shown in table 1 above, majority of the respondents were male (60%) compared to females (40%), which suggests a possible male-dominated participation in fishing-related activities or household decision-making related to fish consumption in the area.

4.1.2 Distribution of respondents by age

The age distribution shows that individuals aged 26–35 years (31.3%) and 36–45 years (25%) formed the majority of respondents. These age groups are often economically active, managing household resources, and are likely key decision-makers in purchasing fish. The lower participation of individuals below 18 years and above 60 years reflected their limited roles in household decision-making or limited participation in the study due to age-related responsibilities or constraints.

4.1.3 Marital status

Most respondents were married (62.5%), suggesting that household dynamics and family size might significantly influence fish consumption patterns. The predominance of married respondents is an indication that decisions about fish consumption were likely influenced by family dynamics. Married individuals often manage larger households, requiring a balance of income and expenditure, which could directly affect fish consumption frequency and spending. Single respondents (25%) have fewer dependents, allowing for different consumption patterns.

4.1.4 Distribution of respondents by level of education

The results show that most respondents attained primary (37.5%) and secondary (31.3%) education level, with a fewer who reached tertiary/university levels (12.5%). This is an indication that the community generally had moderate literacy levels, which affected their ability to access and

interpret information about the nutritional benefits of fish. Lower educational attainment also correlated with lower income levels, further impacting fish consumption.

4.1.5 Household size

As shown in table 5 above, half of the respondents reported having 4–6 members in their households, indicating moderately sized families. Larger households (7–9 members or more) were also common (37.5%). Household size was a significant factor, as larger families may face greater financial pressure, influencing the frequency of fish consumption or the type of fish purchased.

4.1.6 Primary Occupation

With 50% of respondents identifying as farmers, the data reflected the agrarian nature of Laguti Sub- County. Farmers may have limited cash income, relying on subsistence farming, which could influence their purchasing power and, consequently, their fish consumption. Fishermen/women (25%) were a smaller group but had direct access to fish, affecting their consumption patterns differently.

4.2 Socio-economic factors affecting fish consumption

Section 4.2 addresses research question one which sought to identify socio-economic factors affecting fish consumption among households in Laguti Sub-County. The gathered responses on this particular objective were analyzed using frequency counts and percentages as in tables 7 - 11 below;

Table 4.2: Socio-economic factors and fish consumption

Variable	Categories	Frequency	Percentage
Frequency of fish consumption	Daily	10	12.5
	Weekly	30	37.5
	Monthly	20	25.0
	Rarely	15	18.8
	Never	5	6.2
	Total	80	100
Primary source of fish	Local market	40	50.0
	Fishing	15	18.8
	Mobile vendors	10	12.5
	Gift from relatives	10	12.5
	Other	5	6.2
	Total	80	100
Monthly household income	Below 100,000	20	25.0
	100,000–300,000	30	37.5

	300,001–500,000	15	18.8
	Above 500,000	15	18.8
	Total	80	100
Monthly spending on fish	Below 10,000	25	31.2
	10,001–30,000	35	43.8
	30,001–50,000	15	18.8
	Above 50,000	5	6.2
	Total	80	100
Whether fish price affect consumption	Yes	60	75.0
	No	20	25.0
	Total	80	100

4.2.1 Frequency of Fish Consumption

Results in table 2 above, show that the majority of households in the Sub-County consumed fish on a weekly basis (37.5%), reflecting a significant reliance on fish as part of their diet but not a daily staple. Monthly consumption was also notable (25%), suggesting that for some households, fish consumption was influenced by periodic availability or financial considerations. A considerable number of households consumed fish rarely (18.8%), which indicated either limited access or preference for other protein sources. Only a small proportion of households (12.5%) consumed fish daily, pointing to either a steady supply or a cultural or dietary preference. The 6.2% of respondents who reported never consuming fish highlighted challenges like cultural beliefs, affordability, or alternative protein sources, highlighting a potential gap in fish consumption across certain demographic groups.

4.2.2 Primary source of fish

As shown in table 2 above, local markets served as the primary source of fish for half (50%) of the households, demonstrating the importance of these markets in providing access to fish in the community. Direct fishing as a source (18.8%) reflected the reliance of some households on natural water bodies or local fishing activities, which was seasonal or influenced by access to fishing resources. Mobile vendors and gifts from relatives/friends, each accounting for 12.5% of respondents, highlighted alternative means of fish procurement, likely influenced by convenience or financial constraints. The remaining 6.2% cited other sources including emerging distribution channels, such as community fish farms or roadside sellers, suggesting a need to explore diversified supply chains for improved access.

4.2.3 Monthly household income

The largest proportion of respondents (37.5%) reported monthly incomes ranging from UGX 100,000 to 300,000, indicating modest earning levels that somewhat constrained food budgets, including expenditures on fish. A significant 25% of households earned below UGX 100,000, pointing to economic vulnerability and likely limiting their ability to consume fish frequently. Meanwhile, 18.8% of respondents earned between UGX 300,001 and 500,000, and another 18.8% earned above UGX 500,000, suggesting a minority of the households had greater purchasing power to incorporate fish regularly into their diets. These income disparities underscored the potential role of affordability and economic empowerment in enhancing fish consumption in the sub-county.

4.2.4 Monthly spending on fish

Expenditure patterns showed that most households spent UGX 10,001–30,000 on fish monthly (43.8%), highlighting moderate but not insignificant financial allocations to fish consumption. Another 31.2% of respondents spent below UGX 10,000, likely reflecting constrained budgets or reduced consumption due to affordability concerns. A smaller proportion (18.8%) allocated UGX 30,001–50,000, possibly indicating higher household income levels or prioritization of fish in dietary preferences. Only 6.2% of households spent above UGX 50,000, revealing that high fish expenditure was uncommon and likely limited to higher-income households or those with greater access to fish markets. This data underscored affordability as a critical factor in determining fish consumption levels.

4.2.5 Whether fish price affect consumption

Price plays a significant role in influencing fish consumption frequency, with 75% of respondents indicating that price directly affected their household's consumption patterns. This finding underscored the sensitivity of fish consumption to price fluctuations, reflecting the economic constraints faced by many households. For the 25% of respondents who reported no price effect, other factors such as cultural preferences, availability, or alternative food options played a more critical role. The dominance of price as a determinant emphasized the need for strategies such as subsidies, price stabilization, or income support to enhance fish accessibility and consumption.

Table 4.3: Socio-economic factors affecting fish consumption among households

Factor	Values	Frequency	Percentage (%)
Income Level	High	30	37.5
	Medium	35	43.8
	Low	15	18.7
High Fish Price Impact	Yes	50	62.5
	No	30	37.5
Availability & Accessibility	High	45	56.3
	Low	35	43.7
Cultural & Dietary Preference	Strong	40	50.0
	Weak	40	50.0
Education & Awareness	High	48	60.0
	Low	32	40.0
Household Size	Large	33	41.3
	Small	47	58.7

The table 3 above provided insights into the socio-economic factors affecting fish consumption among 80 households. Results suggest that income level was an important determinant of fish consumption, with 43.8% of respondents falling into the medium-income category, and only 18.7% in the low-income category. This was an indication that affordability played a role in household fish consumption.

Price sensitivity was also a significant factor, with 62.5% of respondents indicating that high fish prices negatively impacted their consumption patterns. This aligned with economic principles where price elasticity affects demand, particularly for households with lower disposable income.

Availability and accessibility also emerged as key considerations, with 56.3% of households reporting high accessibility to fish markets, contributing to higher consumption rates. Conversely, 43.7% of respondents faced difficulties in accessing fish, which could hinder regular consumption.

Cultural and dietary preferences were split evenly among households, with 50% identifying a strong inclination towards fish consumption, while the remaining 50% reported weaker preferences. This suggests that cultural influences alone could not be a dominant factor but still played a role in household food choices.

Education and awareness about fish's nutritional benefits positively impacted consumption, with 60% of respondents demonstrating a high level of awareness. This highlighted the importance of

nutritional education in influencing dietary behavior. Policies aimed at promoting fish as a healthy protein source could further enhance consumption patterns.

Household size and composition also influenced fish consumption, with 58.7% of respondents belonging to smaller households. Larger households (41.3%) faced budget constraints, leading to reduced fish consumption due to cost considerations and diversified dietary preferences among members.

4.3 Influence of cultural beliefs and perceptions on fish consumption

This section of the study addresses research objective two which sought to analyze the influence of cultural beliefs and perceptions on fish consumption in Laguti Sub- County. Quantifiable responses gathered for this particular objective were analyzed using descriptive statistics (frequencies and percentages) as presented in table 4 below;

Table 4.4: Perception of Respondents on fish consumption (n=80)

Variable	Categories	Frequency	Percentage
Whether cultural beliefs discouraged fish consumption	Yes	20	25.0
	No	50	62.5
	Not sure	10	12.5
	Total	80	100
Perception of fish as a healthy food choice	Yes	70	87.5
	No	10	12.5
	Total	80	100

While 62.5% of respondents reported that cultural beliefs did not discourage fish consumption, 25% acknowledged the presence of such beliefs, and 12.5% were unsure, suggesting that cultural factors still influenced a notable segment of the population. The existence of cultural restrictions could lead to selective avoidance of fish or specific species, reducing overall consumption levels in affected households. The data also highlighted the importance of cultural perceptions in shaping dietary choices, suggesting a need for awareness campaigns to address misconceptions and promote the health benefits of fish consumption where cultural barriers exist.

The overwhelming majority (87.5%) viewed fish as a healthy food choice, reflecting widespread awareness of its nutritional benefits, such as high protein content and potential health improvements. This positive perception may encourage consumption if economic barriers are addressed.

4.4 Barriers to accessing and consuming fish

This section of the study addresses research question three which sought to evaluate the barriers to accessing and consuming fish in the community. The quantifiable responses gathered on this objective were analyzed using frequencies and percentages as presented in table 14;

Table 4.5: Main barriers to fish access and consumption

Barrier	Frequency	Percentage (%)
High cost	40	50.0
Limited availability	20	25.0
Poor transport infrastructure	10	12.5
Lack of storage/preservation	5	6.2
Cultural beliefs/taboo	5	6.2
Total	80	100

High cost emerged as the most significant barrier to accessing fish, with 50% of respondents identifying it as a major challenge. This aligns with the earlier findings that price significantly affects consumption frequency. Limited availability (25%) was the second most cited barrier, indicating potential supply chain or resource challenges in the sub-county. Poor transport infrastructure (12.5%) and lack of storage/preservation facilities (6.2%) pointed to logistical challenges that exacerbate access issues. Cultural beliefs/taboo (6.2%) also persisted as minor barriers. These findings suggested a multifaceted approach is needed to improve access to fish, including economic interventions, infrastructure development, and supply chain enhancements.

Table 4.6: Belief in government/community program improvements (n=80)

Response	Frequency	Percentage (%)
Yes	65	81.3
No	15	18.8
Total	80	100

The majority (81.3%) expressed optimism about the potential for government or community programs to improve fish availability. This highlights an opportunity for targeted interventions such as subsidizing fish prices, improving market infrastructure, or introducing storage technologies to enhance access and affordability.

Chapter Five

Discussion, Conclusion and Recommendations

5.0 Introduction

The study was undertaken to make an assessment on fish consumption pattern in Laguti Sub-County Pader District. This chapter discusses the major findings, conclusions and recommendations in relation to the objectives of the study. This chapter further suggests the areas for further research.

5.1.1 Socio-economic factors affecting fish consumption among households

The study findings highlighted multiple socio-economic factors influencing fish consumption in Laguti Sub-County, Pader District. The role of income level was particularly significant, as households with medium income (43.8%) were more likely to consume fish compared to those in the low-income bracket (18.7%). This suggested that affordability is a primary determinant of fish consumption. Many households in Pader District relied on subsistence farming, limiting disposable income for purchasing protein-rich foods like fish. Similar studies, such as a survey conducted in Uganda's Central Region, also found that income level directly influenced dietary choices, with wealthier households exhibiting higher fish consumption rates (Halasi et al., 2024).

Price sensitivity further shaped consumption patterns, as 62.5% of respondents reported that high fish prices negatively affected their purchasing behavior. This aligns with economic principles of price elasticity, where demand declines as prices increase, particularly among lower-income households. In Laguti Sub-County, where formal employment opportunities are scarce, fluctuating fish prices make it difficult for families to maintain regular fish consumption. A comparable study in Kenya found that fish consumption was lower in inland regions due to high transportation costs, making it an expensive dietary option (Kruijssen et al., 2020).

Accessibility was another determinant, with 56.3% of households having high access to fish markets, which facilitated increased consumption. Conversely, 43.7% of respondents faced accessibility challenges, which stemmed from poor road infrastructure or long distances to markets. In rural areas of Northern Uganda, limited market access often forces households to rely on alternative protein sources such as beans and groundnuts (Vilakazi et al., 2025). A study in

Tanzania also found that proximity to fish landing sites and markets significantly influenced household consumption levels (Kiritu et al., 2018).

Cultural and dietary preferences showed an even split, with 50% of respondents demonstrating a strong inclination toward fish consumption while the other half exhibited weaker preferences. This indicates that cultural influences played a role but were not a dominant factor in shaping fish consumption habit. In Pader District, some ethnic groups have historically favored alternative proteins such as goat meat, while others, particularly those near water bodies, have traditionally consumed fish. A similar study in Ghana revealed that while cultural norms influenced fish consumption, economic and market factors had a stronger impact.

Education and awareness emerged as positive influencers of fish consumption, with 60% of respondents exhibiting a high level of awareness regarding fish's nutritional benefits. This underscores the importance of nutritional education in shaping dietary habits. In Uganda, government initiatives promoting fish farming and nutrition education have contributed to improved consumption patterns. Studies in Nigeria and India have similarly shown that households with greater awareness of fish's health benefits tend to incorporate it more into their diets.

Household size and composition also influenced fish consumption, with smaller households (58.7%) consuming more fish than larger households (41.3%). Larger households often face budgetary constraints and dietary diversification, leading to reduced fish intake. In Laguti Sub-County, where extended families are common, allocating household income to a variety of food items can limit fish purchases. A study in Ethiopia observed a similar trend, where larger households had lower per capita fish consumption due to financial limitations.

5.1.2 Influence of cultural beliefs and perceptions on fish consumption

The study findings indicate that cultural beliefs and perceptions played a role in influencing fish consumption in Laguti Sub-County. While the majority of respondents (62.5%) reported that cultural beliefs did not discourage fish consumption, 25% acknowledged the presence of such beliefs, and 12.5% were uncertain. This is an indication that while cultural barriers were not dominant, they still impacted a notable segment of the population. Certain traditional beliefs associated fish with taboos, and some specific species are avoided due to myths or spiritual connotations. For example, in some communities within study area, eating catfish is discouraged due to beliefs that it brings bad luck or illness.

The presence of cultural restrictions led to selective avoidance of fish or specific species, subsequently reducing overall consumption levels. Households adhering to such beliefs opt for alternative protein sources such as goat meat, chicken, or plant-based proteins. A similar trend was observed in a study conducted by Kadongola & Ahern, (2023) in Malawi, where specific fish species were avoided due to cultural taboos, limiting the variety and frequency of fish consumption in certain communities. The data from Laguti Sub-County highlight the need for awareness campaigns to address misconceptions and promote the health benefits of fish consumption where cultural barriers exist.

Findings also emphasized the importance of cultural perceptions in shaping dietary choices. The overwhelming majority (87.5%) viewed fish as a healthy food choice, demonstrating widespread awareness of its nutritional benefits, such as high protein content and its role in improving overall health. This positive perception suggests that cultural acceptance of fish is high, but economic barriers or access limitations may still hinder consumption. In Northern Uganda, initiatives promoting fish as a nutritious and affordable protein source could further strengthen this positive perception. A study in Bangladesh by Owais et al., 2017 found that targeted nutrition education programs successfully increased fish consumption by dispelling myths and promoting its benefits, a strategy that could be replicated in Laguti Sub-County.

Moreover, while some households avoided fish due to cultural beliefs, education could play a crucial role in changing dietary behaviors. Nutrition awareness campaigns have proven effective in influencing food choices by addressing long-held misconceptions. In Uganda's Central Region, education initiatives focusing on fish's health benefits have led to increased demand (Mapfumo & Baumgartner, 2019). Similarly, a study in Nigeria found that communities with higher literacy rates exhibited fewer cultural restrictions on fish consumption, further emphasizing the role of education in altering food habits (Anyanwu, 2014).

5.1.3 Barriers to accessing and consuming fish in the community

Access to fish as a source of nutrition and income remained a challenge in Laguti Sub-County. The study findings highlighted several barriers to fish consumption, with high cost (50%) emerging as the most significant factor. Limited availability (25%), poor transport infrastructure (12.5%), lack of storage and preservation facilities (6.2%), and cultural beliefs and taboos (6.2%) were also identified as constraints. These results pointed to a combination of economic, infrastructural, and

socio-cultural factors that hindered fish accessibility and consumption in the region which is in agreement with the findings of Chan et al., 2019.

High cost of fish being the primary barrier aligns with the economic realities of Laguti Sub-County. Many households relied on subsistence farming and have limited disposable income to spend on fish, which is often transported from distant water bodies such as the Nile River or Lake Kyoga. Given the region's economic constraints, affordability of fish remains a pressing concern, making it a less frequent component of the local diet. This finding is consistent with studies conducted in other parts of Uganda (Isingoma et al., 2017). and sub-Saharan Africa, where the price of fish significantly affects its consumption. For example, a study in Kenya's Turkana region found that high fish prices limited accessibility, particularly among low-income households (Awuor et al., 2019).

Limited availability (25%) was a secondary challenge highlighting supply chain inefficiencies in the region. Unlike regions near large lakes where fish is readily available, Laguti lacks major water bodies, making the supply dependent on traders who transport fish from distant locations. Seasonal variations further exacerbate the problem, with fish supply dwindling during dry seasons. Similar supply chain challenges were noted in a study conducted in Malawi, where fish scarcity in inland rural areas contributed to low consumption levels (Alemu & Abera Teka, 2024).). This suggests that proximity to fish sources and effective distribution networks play a crucial role in determining fish availability.

Poor transport infrastructure (12.5%) further aggravated the supply chain difficulties. Laguti Sub-County, like many rural areas in Uganda, suffers from inadequate road networks, making it difficult for traders to transport fish efficiently. The few available roads become impassable during the rainy season, delaying deliveries and increasing spoilage risks. (Muhsin et al., 2023). Addressing transport challenges could significantly improve fish access in Laguti and similar rural settings.

Lack of storage and preservation facilities (6.2%) also emerged as a barrier, reflecting the infrastructural deficiencies in the sub-county. Without proper refrigeration or storage facilities, both traders and consumers struggle to keep fish fresh, leading to higher post-harvest losses. This issue has been documented in Nigeria, where inadequate preservation methods contributed to substantial fish wastage, reducing overall supply and affordability (Akintola & Fakoya, 2017).

Establishing cold storage facilities and promoting traditional preservation techniques, such as smoking and salting, could mitigate these challenges.

Cultural beliefs and perceptions (6.2%) remain a minor but relevant barrier. In some communities within Laguti Sub- County, specific fish species are considered have consumption due to socio-cultural beliefs for example the consumption of *Rastrineobola argentea* L. whose con is associated with low-income earners (Namwanje et al., 2020). This phenomenon is not unique to Uganda; in parts of Ghana, certain fish species are avoided due to cultural restrictions, further limiting dietary diversity (Akuffo & Quagraine, 2018). Addressing such barriers requires community sensitization programs to promote the nutritional benefits of fish consumption while respecting local traditions.

5.2 Conclusion

In conclusion, the study confirmed that fish consumption in Laguti Sub-County is primarily influenced by income levels, price sensitivity, accessibility, socio-cultural perceptions, education, and household size. While affordability remains a major factor, increased market access and nutritional awareness can play pivotal roles in boosting consumption.

The study also confirms that while cultural beliefs do not serve as a primary barrier to fish consumption in Laguti Sub- County, they still influence dietary choices for a notable portion of the population. Cultural perceptions of fish as a healthy food choice remain strong, but targeted awareness campaigns are necessary to address lingering misconceptions. Addressing these cultural beliefs and reinforcing positive perceptions through education and community engagement can help boost fish consumption.

The study further confirms that fish accessibility and consumption in Laguti Sub- County are hindered by economic, logistical, and socio-cultural barriers. High cost remains the most significant challenge, followed by limited availability, poor transport infrastructure, lack of storage facilities, and cultural taboos. Addressing these challenges requires a multifaceted approach, incorporating economic support, infrastructure development, and community education.

5.3 Recommendations

Government and development partners should invest in better road infrastructure and support the establishment of local fish markets to enhance accessibility and affordability for households facing market challenges.

Community-based education initiatives should be strengthened to increase awareness of fish's health benefits, particularly targeting low-income and larger households to encourage higher consumption rates.

Government and local organizations should conduct awareness campaigns to educate communities on the health benefits of fish and dispel myths that discourage its consumption. Using local leaders and cultural influencers could enhance the effectiveness of these campaigns.

Educational institutions and community programs should incorporate nutrition education focusing on fish's role in a healthy diet. This approach could help shift perceptions and encourage long-term changes in dietary habits, particularly among younger generations.

Encouraging and supporting local fish farming initiatives could reduce reliance on imported fish and lower prices, making fish more accessible to the community.

Investments in better road networks and storage facilities would enhance fish distribution efficiency, reducing spoilage and increasing availability in remote areas.

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Appendices

Appendix 1: Questionnaire for respondents

Dear sir/madam

I am, **Adong Alice**, pursuing bachelors of Science in fisheries and water Resource management of Busitema University. I am carrying out research on the topic; assessment on fish consumption pattern in laguti Sub-county Pader District. This questionnaire aims to gather information on fish consumption patterns in Laguti Sub-County. Please answer all questions honestly and to the best of your ability. All responses will remain confidential.

Section A: Social demographic characteristics

A1. Gender?

- a. Male b. Female c. Other (Specify): _____

A2. What is your age group?

- a. Below 18 years b. 18–25 years c. 26–35 years d. 36–45 years
e. 46–60 years f. Above 60 years

A3. What is your marital status?

- a. Single b. Married c. Widowed d. Divorced/Separated

A4. What is the highest level of education you have completed?

- a. No formal education b. Primary c. Secondary d. Tertiary/University

A5. What is your household size?

- a. 1–3 members b. 4–6 members c. 7–9 members d. 10 or more members

A6. What is your primary occupation?

- a. Farmer
b. Fisherman/Fisherwoman
c. Trader
d. Civil servant

e. Other (Specify): _____

Section B: Socio-economic factors affecting fish consumption among households

B1. How often do you consume fish in your household?

- a. Daily b. Weekly c. Monthly d. Rarely e. Never

B2. What is your primary source of fish?

- a. Local market b. Fishing c. Mobile vendors d. Gift from relatives/friends

e. Other (Specify): _____

B3. What is your average monthly household income?

- a. Below 100,000 UGX
b. 100,000–300,000 UGX
c. 300,001–500,000 UGX
d. Above 500,000 UGX

B4. How much do you spend on fish per month?

- a. Below 10,000 UGX b. 10,001–30,000 UGX c. 30,001–50,000 UGX
d. Above 50,000 UGX

B5. Does the price of fish affect your household's consumption frequency?

- a. Yes b. No

B6. Do you feel fish is affordable compared to other protein sources (e.g., meat, beans)?

- a. Yes b. No

B7. What factors influence your decision to purchase fish?

- a. Price b. Availability c. Quality/freshness d. Cultural/religious beliefs

e. Other (Specify): _____

Section C: Influence of cultural beliefs and perceptions on fish consumption

C1. Are there cultural beliefs in your community that discourage fish consumption?

- b. Poor preservation techniques
- c. Spoilage
- d. Other (Specify): _____

D4. Do you think government or community programs can improve fish availability?

- a. Yes
- b. No

D5. What interventions do you think would improve fish consumption in your community? (Select all that apply)

- a. Subsidizing fish prices
- b. Establishing more fish markets
- c. Improving transport infrastructure
- d. Providing education on the benefits of fish consumption
- e. Other (Specify): _____

Closing Remarks

Thank you for your participation. Your responses will help us understand fish consumption patterns and identify ways to improve access and nutrition in Laguti Sub-County. If you have any additional comments, please write them below:

Let me know if you'd like further customization or a specific focus on any section.

Appendix 11: Interview Guide

I am, **Adong Alice**, pursuing bachelors of Science in fisheries and water Resource management of Busitema University. I am carrying out research on the topic; assessment on fish consumption pattern in laguti Sub-county Pader District. This questionnaire aims to gather information on fish consumption patterns in Laguti Sub-County. Please answer all questions honestly and to the best of your ability. All responses will remain confidential.

Purpose of the Interview: The aim of this interview is to understand the fish consumption pattern.

Consent: Do I have your consent to proceed with the interview? a. Yes b. No

1. What is the age distribution of household members in Laguti Sub-County?
2. What is the gender distribution within households?
3. What is the marital status of household heads?
4. What are the educational levels of household heads or primary income earners?
5. How many individuals are in each household?
6. What are the primary sources of income for households in Laguti Sub-County?
7. What is the average monthly income of households?
8. How often do households purchase fish, and what is the average spending per purchase?
9. What is the availability of fish in local markets or through informal sources?
10. What types of fish are commonly consumed, and what are their prices?
11. How does the employment status of household members affect fish consumption?
12. What other protein sources are accessible, and how do they compare to fish in terms of cost and availability?
13. Are there specific cultural beliefs or taboos associated with fish consumption?
14. How do traditional practices influence the preparation or preference for certain types of fish?
15. Are there any gender-related norms or roles that affect fish consumption?
16. What perceptions do households have about the nutritional benefits of fish compared to other foods?
17. Are there misconceptions or myths about consuming specific fish species or during certain life stages (e.g., pregnancy, childhood)?
18. How do festive or ceremonial occasions influence fish consumption patterns?

19. What are the logistical challenges households face in accessing fish (e.g., transportation, distance to markets)?
20. Are there seasonal variations in fish availability?
21. What are the storage challenges for households without refrigeration or preservation methods?
22. How do climatic or environmental conditions affect local fish supply?
23. Are there issues related to affordability that limit fish consumption?
24. What role does limited knowledge about cooking or preserving fish play in its consumption?
25. Are there health concerns related to consuming fish in the community (e.g., hygiene, contamination risks)?