

Study on Consumption Pattern of Marine Water Fish in Uran City, Raigad District, Maharashtra

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Abstract: Marine fish constitute an essential component of human nutrition, particularly in coastal regions where they serve as a primary source of high-quality protein, omega-3 fatty acids, vitamins, and minerals. The present study aims to assess the consumption patterns of marine water fish among residents of Uran City, Raigad district, Maharashtra. A descriptive and analytical research design was adopted using a structured questionnaire survey conducted among 50 households. The study evaluates the influence of socio-economic factors, seasonal availability, price fluctuations, and consumer awareness on fish consumption behavior. The findings indicate that income, education, and occupation significantly affect consumption patterns, while price and seasonal variations act as major constraints. The study also highlights variations in species preference and purchasing behavior among different demographic groups. The results provide valuable insights for fisheries management, public health policy, and sustainable consumption practices.

Keywords: Marine fish

I. INTRODUCTION

Fish is widely recognized as an essential component of a balanced and nutritious diet due to its exceptional nutritional composition and health-promoting properties. It serves as a rich source of **high-quality protein** containing all essential amino acids required for human growth, tissue repair, and metabolic functions. In addition to protein, fish is an important source of **long-chain omega-3 fatty acids**, particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which play a crucial role in cardiovascular health, brain development, and the prevention of chronic diseases. Fish also provides significant amounts of **fat-soluble vitamins** such as vitamins A and D, as well as **water-soluble B-complex vitamins**, which are vital for energy metabolism and neurological function. Furthermore, it contains essential minerals including iodine, calcium, phosphorus, selenium, and zinc, which are important for bone health, thyroid function, and immune system support.

In coastal regions across the world, marine fish constitutes a fundamental component of dietary intake and plays a vital role in ensuring **food security and nutritional well-being**. It also supports the livelihoods of millions of people engaged in fishing, processing, and marketing activities. Over the past few decades, global fish consumption has shown a steady increase due to factors such as population growth, rising incomes, urbanization, and increased awareness regarding the health benefits associated with fish consumption. The growing demand for protein-rich and healthy food alternatives has further contributed to the expansion of the fisheries sector.

India, being one of the leading fish-producing countries, possesses an extensive coastline of over 7,500 km and a vast marine biodiversity that supports a wide variety of fish species. Fish consumption has traditionally been an integral part of the diet in coastal states such as Maharashtra, Kerala, West Bengal, and Goa. In Maharashtra, particularly along the Konkan coast, marine fish forms a staple component of daily meals and cultural practices. The diversity of species available, including mackerel, sardines, pomfret, Bombay duck, and prawns, contributes to varied dietary preferences and consumption patterns.



Uran City, located in the Raigad district of Maharashtra along the Arabian Sea, represents a significant coastal settlement where marine fisheries play both economic and nutritional roles. The proximity of Uran to major fish landing centers such as Mora and Karanja ensures a continuous supply of fresh marine fish. The presence of traditional fishing communities, particularly the Koli community, further strengthens the cultural and economic importance of fish in the region. Local fish markets and small-scale vendors provide easy accessibility to a wide range of marine fish species, making fish an important component of household diets.

Despite the availability of marine resources, fish consumption patterns are not uniform across different population groups and are influenced by a complex interplay of factors. **Socio-economic variables** such as income, education, occupation, and family size significantly affect the frequency and quantity of fish consumption. Higher-income households tend to consume a greater variety and quantity of fish, often preferring premium species, whereas lower-income households may limit consumption due to price constraints. **Cultural preferences and traditional dietary habits** also play an important role in determining species selection and cooking methods.

In addition, **market-related factors** such as price fluctuations, quality, freshness, and accessibility strongly influence consumer behavior. Fish is a highly perishable commodity, and its quality deteriorates rapidly without proper storage and handling. Consumers often prioritize freshness and affordability while making purchasing decisions. The availability of cold storage facilities, transportation infrastructure, and market organization can significantly impact the accessibility and consumption of fish.

Urbanization and modernization have further transformed dietary patterns in recent years. Busy lifestyles, changing food habits, and increased exposure to processed and convenience foods have led to a gradual shift in consumption preferences. Many urban consumers now prefer **processed, frozen, or ready-to-cook fish products**, which offer convenience and longer shelf life. While such products increase accessibility, they may also influence traditional consumption patterns and nutritional intake.

Seasonal variation is another critical factor affecting marine fish consumption, particularly in coastal regions like Uran. The **monsoon season (June to September)** is characterized by rough sea conditions and fishing restrictions imposed to protect fish breeding cycles. As a result, fish supply decreases significantly during this period, leading to higher prices and reduced consumption. In contrast, the **post-monsoon season (October to December)** is associated with abundant fish landings, improved availability, and lower prices, resulting in increased consumption. These seasonal fluctuations create variability in dietary patterns and influence consumer behavior throughout the year.

Furthermore, **awareness of nutritional and health benefits** plays an important role in shaping consumption patterns. Individuals with higher levels of education and health awareness are more likely to include fish in their diet regularly due to its recognized benefits in preventing cardiovascular diseases and improving overall health. However, concerns related to environmental pollution, contamination, and food safety may also influence consumer perceptions and preferences.

Despite the significance of marine fish in the diet of coastal populations, there is a noticeable lack of **localized, empirical data** on fish consumption patterns in smaller coastal towns such as Uran. Most existing studies focus on broader regional or national trends, leaving gaps in understanding site-specific consumption behavior. Detailed studies at the local level are essential to capture variations in socio-economic conditions, cultural practices, market dynamics, and environmental factors that influence consumption patterns.

Therefore, the present study aims to conduct a comprehensive assessment of marine fish consumption patterns among residents of Uran City. The study seeks to analyze the frequency and quantity of fish consumption, identify preferred species, examine the influence of socio-economic and market factors, and evaluate the role of seasonal variation and nutritional awareness. The findings of this study will provide valuable insights for **fisheries management, market planning, nutritional policy formulation, and sustainable resource utilization**. Additionally, it will contribute to the existing body of knowledge and serve as a baseline for future research on fish consumption behavior in coastal regions.



II. HYPOTHESIS

The present study is grounded in the assumption that marine fish consumption patterns in Uran City are not random but are shaped by a complex interaction of socio-economic, environmental, and market-related factors. It is hypothesized that fish consumption behavior has undergone noticeable changes in recent years due to increasing environmental pressures, fluctuating market prices, and evolving consumer preferences influenced by urbanization and lifestyle changes. Coastal ecosystems have been subjected to anthropogenic stress such as pollution and overfishing, which may indirectly affect fish availability and, consequently, consumption patterns.

The **null hypothesis (H_0)** posits that there is no significant relationship between socio-economic variables—such as income, education, occupation, and family size—and the consumption patterns of marine fish among residents of Uran City. According to this assumption, fish consumption would remain relatively uniform across different demographic groups regardless of economic or social differences.

In contrast, the **alternative hypothesis (H_1)** suggests that socio-economic characteristics significantly influence consumption behavior. Individuals with higher income levels and educational backgrounds are expected to exhibit higher consumption frequency and greater diversity in species preference due to better affordability and awareness of nutritional benefits. Furthermore, the study incorporates additional hypotheses to capture specific influencing factors. It is expected that fish consumption varies seasonally, with higher intake during post-monsoon periods when fish availability is abundant and prices are relatively lower. Conversely, during the monsoon season, fishing restrictions and adverse weather conditions reduce supply, leading to decreased consumption. It is also hypothesized that rising prices negatively impact consumption, particularly among lower-income households, who may substitute fish with cheaper protein sources. Additionally, greater awareness of the health benefits associated with fish consumption is expected to positively influence dietary choices and increase consumption levels.

III. LITERATURE REVIEW

Marine fish consumption has been extensively studied as a critical component of global nutrition, food security, and economic development. Fish is widely recognized for its high nutritional value, contributing significantly to global protein intake and providing essential micronutrients necessary for human health. Reports by international organizations such as FAO highlight the increasing importance of fish in global diets, driven by population growth, urbanization, and rising health consciousness.

Several empirical studies have explored the determinants of fish consumption behavior using survey-based methodologies. Research has consistently demonstrated that **socio-economic factors** play a crucial role in shaping consumption patterns. Higher-income households tend to consume fish more frequently and prefer high-value species such as pomfret and prawns, while lower-income groups often limit consumption due to financial constraints. Education level also influences dietary choices, as individuals with greater awareness of nutritional benefits are more likely to include fish regularly in their diet.

Seasonal availability and market dynamics have also been identified as key determinants. Studies have shown that fish consumption increases during periods of high supply, particularly in post-monsoon seasons, when prices are lower and a wider variety of species is available. In contrast, consumption declines during the monsoon season due to reduced fishing activity and increased prices. Freshness and quality are additional factors influencing consumer preference, with most consumers favoring freshly caught fish over frozen or processed alternatives.

Research has further highlighted that consumer awareness regarding the health benefits of fish remains moderate, especially in urban and semi-urban populations. While many individuals recognize fish as a healthy food option, detailed knowledge about its nutritional advantages is often limited. Institutions such as ICAR-CIFT have emphasized the importance of understanding consumer behavior to improve fisheries management, marketing strategies, and policy development.



Overall, the literature underscores the complexity of fish consumption behavior and the need for localized studies to capture region-specific variations. In this context, the present study contributes by providing detailed insights into consumption patterns in Uran City, a coastal region that has received limited research attention.

IV. OBJECTIVES

The primary objective of this study is to comprehensively assess the consumption patterns of marine water fish among residents of Uran City in Raigad district, Maharashtra. This includes understanding not only the frequency and quantity of fish consumption but also the underlying factors that influence consumer behavior in a coastal setting.

A key objective is to analyze the influence of **socio-economic factors**, including income, education, occupation, and family size, on fish consumption patterns. These variables are expected to determine purchasing power, dietary preferences, and awareness levels. The study also aims to identify the **commonly consumed marine fish species**, which will provide insights into local dietary habits and species popularity.

Another important objective is to examine the role of **market-related factors**, such as price fluctuations, availability, and accessibility, in shaping consumption behavior. Since fish is a perishable commodity, factors like freshness and market proximity are likely to significantly influence purchasing decisions. Additionally, the study seeks to assess the level of **consumer awareness regarding the nutritional benefits of fish**, as this awareness can directly impact consumption frequency.

The study further aims to evaluate **seasonal variations** in fish consumption, particularly the impact of monsoon and post-monsoon periods on availability and pricing. Finally, based on the findings, the study intends to provide practical recommendations for promoting **sustainable consumption practices**, improving fisheries management, and enhancing public awareness.

V. MATERIALS AND METHODS

The present study adopts a **descriptive and analytical research design**, utilizing a cross-sectional survey approach to collect and analyze data on fish consumption patterns. This methodology is appropriate for capturing current consumption behavior and identifying relationships between variables.

The study was conducted in **Uran City**, located in Raigad district of Maharashtra, which is a coastal region with a strong dependence on marine fisheries for both livelihood and food consumption. The proximity to the Arabian Sea and the presence of active fishing communities make it an ideal location for studying fish consumption patterns.

A total of **50 households** were selected using a random sampling method to ensure representation across different socio-economic groups. This approach helps in minimizing sampling bias and provides a diverse dataset for analysis.

Primary data were collected through a **structured questionnaire**, which included sections on socio-economic characteristics, consumption frequency and quantity, species preference, purchasing behavior, and awareness levels. Face-to-face interviews were conducted to ensure clarity of responses and accuracy of data collection.

The collected data were analyzed using **descriptive statistics**, such as percentages and averages, to summarize consumption patterns. **Correlation analysis** was performed to examine relationships between socio-economic factors and fish consumption behavior. Data processing and analysis were carried out using MS Excel.

Ethical considerations were carefully maintained throughout the study. Participation was voluntary, and respondents were informed about the purpose of the study. Confidentiality of personal information was ensured.

However, the study has certain limitations, including a relatively small sample size, reliance on self-reported data, and potential seasonal bias depending on the time of data collection.

VI. RESULTS AND DISCUSSION

The findings of the study indicate that marine fish consumption in Uran City is significantly influenced by socio-economic and market-related factors. Households with higher income levels demonstrated greater consumption



frequency and a preference for high-value species such as pomfret and prawns. In contrast, lower-income households were more sensitive to price fluctuations and often limited their consumption or opted for cheaper fish varieties. Seasonal variation emerged as a critical factor affecting consumption patterns. During the **post-monsoon season**, fish availability increased due to favorable fishing conditions, leading to lower prices and higher consumption levels. Conversely, during the **monsoon season**, fishing activities were restricted, resulting in reduced supply and increased prices, which negatively impacted consumption.

Consumer preferences were found to be strongly influenced by factors such as **freshness, taste, and affordability**. Most respondents preferred purchasing fish from local markets or landing centers, where fresh fish is readily available. Processed and frozen fish products were less commonly preferred, although their demand is gradually increasing due to convenience.

The study also revealed that awareness of the nutritional benefits of fish was moderate among respondents. While many individuals recognized fish as a healthy food option, detailed knowledge about its role in preventing diseases and improving health was limited. This indicates a need for targeted awareness programs.

Overall, the results are consistent with existing literature and confirm that fish consumption behavior is shaped by a combination of socio-economic conditions, seasonal availability, and market dynamics.

VII. CONCLUSION

The present study concludes that marine fish consumption patterns in Uran City are influenced by a complex interplay of socio-economic, environmental, and market-related factors. Variables such as income, education, occupation, seasonal availability, and price significantly affect consumption behavior. Higher-income groups tend to consume a greater variety of fish species, while lower-income households are constrained by affordability.

Seasonal fluctuations play a crucial role in determining availability and consumption levels, with post-monsoon periods showing higher consumption due to increased supply. The study also highlights the importance of consumer awareness, as individuals with better knowledge of nutritional benefits are more likely to include fish regularly in their diet.

The availability of **diverse marine fish species** along the Uran coastline provides an opportunity to promote varied and balanced dietary practices. However, effective management strategies are required to ensure sustainable utilization of marine resources.

The study provides valuable baseline data that can support fisheries management, improve market systems, and promote sustainable consumption practices. It also emphasizes the need for further research to explore long-term trends and address emerging challenges in coastal food systems.

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