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Study on the socio-economic condition of fishermen in Gandevi taluka, Gujarat

¹VR Tandel, ²SR Lende, ³RV Tandel, ⁴SV Kharadi, ⁵UD Vyas, ⁶SN Dhimmar, ⁷FD Vala and ⁸SR Vala

^{1, 3, 4, 5}College of Fisheries Science, Kamdhenu University, Rajpur (Nava), Himmatnagar, Gujarat, India

^{2, 6, 7, 8}Centre of Excellence in Aquaculture, Kamdhenu University, Ukai, Gujarat, India

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Corresponding Author: SR Lende

Abstract

The socio-economic survey is a crucial initial step before implementing or pursuing any development-based activities. The present study aimed to assess fishermen's livelihood status and socio-economic conditions in selected villages Bilimora, Dholai, Bhat and Mendhar of Gandevi taluka, Navsari district, Gujarat. Data were collected through a well-structured questionnaire from the selected areas over a period of two months, from April 2024 to May 2024. The majority of the fishermen surveyed were over 45 years old (76%). Educational levels varied, with 5% of the fishermen able to write their names, while 0% were illiterate, and 71%, 28% and 1% had attained primary, secondary, or tertiary levels of education. Most of the fishermen utilized gill nets and trawl nets in their fishing activities. The primary fishing activities were observed at the ports of Okha, Dholai, and Mumbai. A significant portion of the fishermen initiated their businesses between 1991 and 2000, and most had over six years of fishing experience. The major constraints identified in this study included a lack of scientific knowledge, high illiteracy rates and insufficient government support.

Keywords: Fishermen, fishing port, livelihood status, socioeconomic study

Introduction

Fisheries is an important sector in India and plays a significant role in livelihood security, and socioeconomic improvement of the country, by enhancing family income, generating gainful employment, and providing healthy food to the millions of rural people Maloth *et al.* (2020) ^[9]. Employment in the fisheries sector has grown faster than the world's population. The sector provides jobs to tens of millions and supports the livelihoods of hundreds of millions. Fish continues to be one of the most traded food commodities worldwide Hasan *et al.* (2016) ^[10].

In India, fishing and aquaculture provide livelihoods for millions of people, particularly in the coastal and riverine regions. Fisheries and aquaculture estimate employment 58.5 million people were engaged in the primary production sector as part-time or full-time employees in 2020. Some 35% were employed in aquaculture Shekh *et al.* (2023) ^[11].

Fishermen are the backbone of fish culture and they were play a very important role in fish culture. The livestock production potential is based on the socio-economic factors of the farmer, which play a vital role in the adoption of improved technologies. The socio-economic background of people determines, to a great extent, their habits and attitudes, which shape their perceptions on entrepreneur activities Somashekar *et al.* (2020) ^[12].

Socioeconomic status of fishermen mostly depends on fisheries resources. It is estimated that more than 12 million people are directly engaged in fishing activities and about 60 million are exclusively depend on fisheries activities for livelihood in India. (Yadav *et al.* 2020) ^[2]. More than 7 million fishermen in the country depend on capture fisheries

and aquaculture for their livelihood Vadher *et al.* (2014) ^[7]. Fisheries and aquaculture sector play an extremely important role on the socio- economic advancement of India and it is the part of our cultural heritage. In India many fishermen in rural areas have taken fish farming activities as their secondary earning which fulfil the per head protein demand. Most of the people are involved in fish farming to improve their socio-economic condition through pond farming Bhutti *et al.* (2022) ^[3].

India's marine fisheries are especially important for traditional and small-scale operations, with 3,827 fishing villages, 1,914 traditional fish landing centres, and several major fishing harbours across the country (FAO, 2022). Gujarat, a major fishing state, has 33 districts engaged in fishing, contributing to India's total marine production of 3.5 million metric tons, which accounts for 5% of the global marine fish capture production (DOF, (2022).

Materials and Methods

The study area was located around the Navsari district, with the selected villages being Bilimora, Dholai, Bhat, and Mendhar. Data were collected using a well-structured questionnaire over a period of two months, from April 2024 to May 2024.

Approximately 300 fishing families reside in these villages. The study aimed to assess the livelihood status of fishermen and their socio-economic conditions. The questionnaire included various aspects such as fishing experience, family type and age, year of business initiation, education level, household size (number of members), port of operation, types of nets used in vessels, and more. After collecting the

data, it was verified to eliminate errors and inconsistencies. The data were then analyzed using MS Excel software. The results were primarily presented in tabular form, as it is simple to calculate, widely used and easy to understand. Some statistical measures, such as averages, percentages, and ratios, were used to better understand the fishing technology and socio-economic conditions of the fishermen in the studied area.

Results

Age Structure of fishermen

Various age groups were examined to assess the age distribution of fishermen. The age of the fishermen varied from 25-45 years. The highest was 24% in >35-45 age groups. 76% fishermen were >45 years age group.

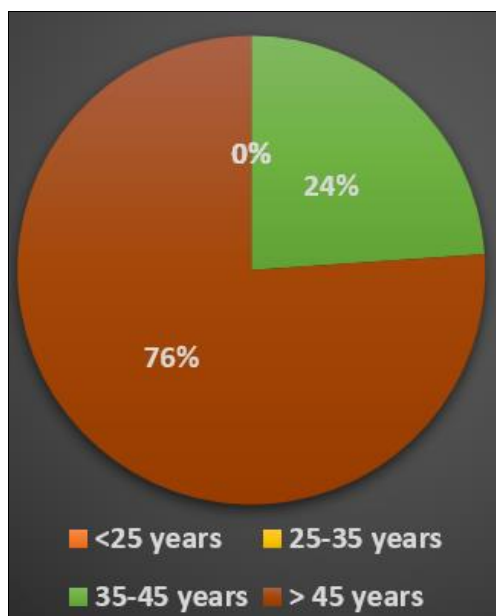


Fig 1: Age

Family Type

The distribution of family types among fishermen is indicated by the survey results. The family was classified into two types: (i) nuclear family and (ii) joint family. In this study 26% family were joint and 69% nuclear family.

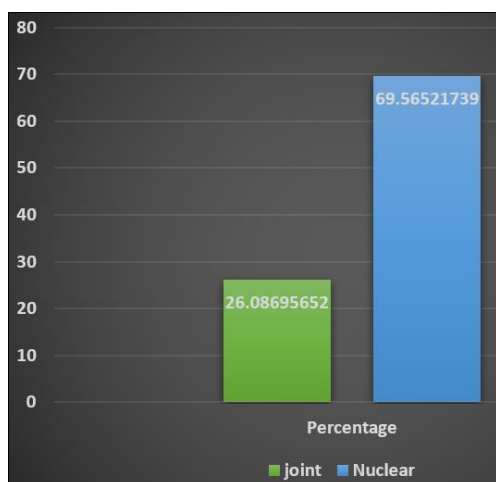


Fig 2: Family type

Family Member

The fishermen families were categorized into three classes based on size: small, medium, and large. The research revealed that the majority of fishermen families, comprising more than 5 members (57%), were classified as large-sized families. Some families comprising 3-5 members (47%), that were in medium sized families. And 1-2 members (10%) as a small sized family.

Table 1: Family member

Household size (members)	No. of Respondents	Respondents %
1-2 No.	4	10
>5 No.	23	57.5
3-5 No.	19	47.5

Educational Status of Fishermen

Four categories were used to assess the education levels of the fishermen. Among the 46 fishermen, 9% had no formal education, 71% had completed primary education, 28% had attained secondary education (up to Grade X), 2% had completed tertiary education.

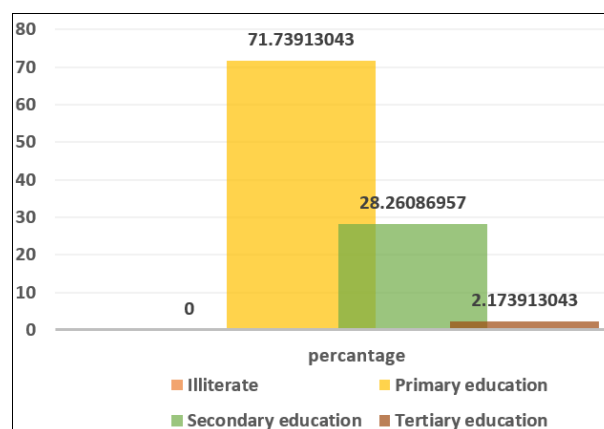


Fig 3: Education

Year of initiating business

The study examined the initiation of fishing businesses by fishermen over different time periods in the study area. Many fishermen began fishing at a young age, with the majority (67.5%) starting their businesses between 1991 and 2001. A smaller proportion, 15%, began between 2001 and 2010, and another 32.5% started between 2011 and 2020.

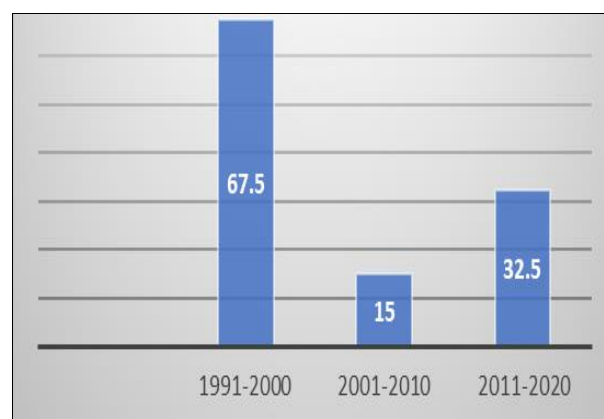


Fig 4: Year of initiating business

Net used in vessels

Common types of nets might include gill nets, trawl nets, seine nets, and cast nets, each selected based on the target species and fishing environment. 82.5% fishermen used gill net and 32.5% used trawl net.

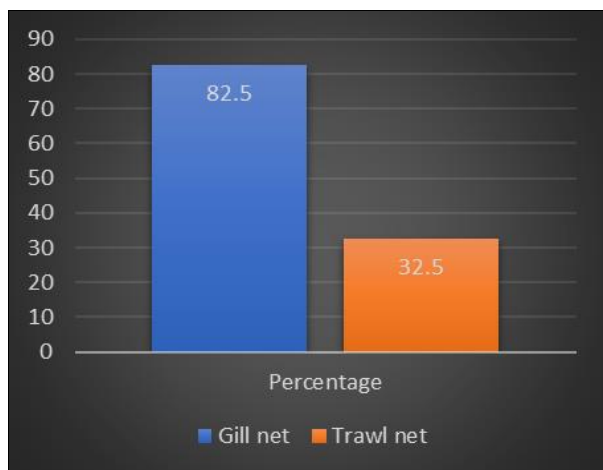


Fig 5: Net used in vessels

Port

Based on the survey of 46 fishermen, it was found that mainly 3 Port, Mumbai, Okha and Dholai. (Fig. No. 6). it was found that 92.5% of them land their catch at Okha Port, making it the most common landing site. Additionally, 15% of the fishermen land their catch at Dholai, 7.5% at Mumbai. This distribution highlights the diverse landing practices among the fishermen in the study area.

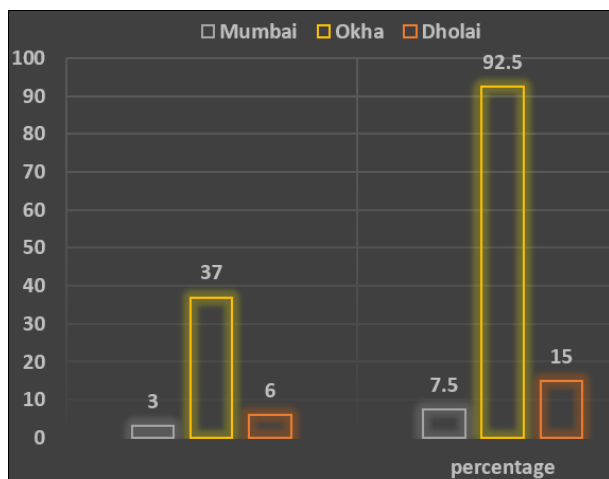


Fig 6: Port

Earning members

In the study area of 40 fishermen families, income sources showed significant variation. 13 families (32.5%) depended on income from two members, another 6 families (15%) had multiple contributors, and 27 families (40%) relied on a single income earner. This range highlights the diverse household dynamics and economic strategies within the fishermen community, where collaboration and individual efforts play crucial roles in maintaining financial stability and managing agricultural operations.

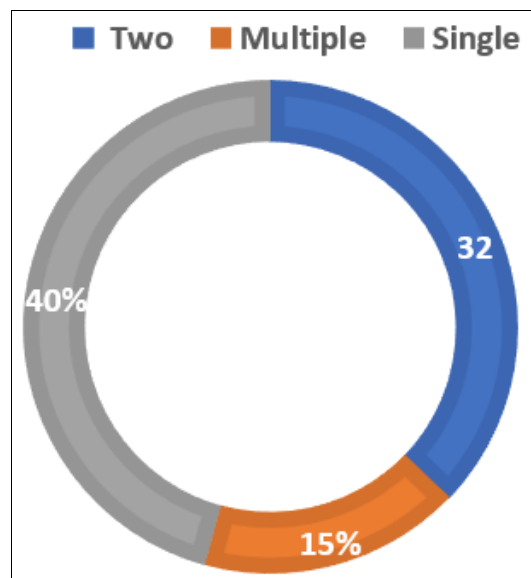


Fig 7: Earning Member

Fishing/Aquaculture experience

A survey of 40 fishermen revealed that 78.2% had more than 6 years of fishing experience, while 21.8% had between 3 to 5 years of experience. This indicates that most of the fishermen in the study area are highly experienced in their field.

Table 2: Fishing/Aquaculture experience

Fishing/Aquaculture experience	No. of Respondents	Respondents %
>6 years	36	78.2%
3-6 years	10	21.8%

Discussion

Age Distribution

Several studies examining the socioeconomic status and demographics of fishermen worldwide reveal varied trends. The age of the fishermen in this study ranged from 25 to 45 years, with the highest proportion (24%) falling in the 35-45 age group, while 76% were above 45 years. These findings align with Hasan *et al.* (2016) ^[10], who reported that 54% of fishermen in the Mymensingh District of Bangladesh were in the middle-aged group of 35 to 50 years. Similarly, Mohan Maloth *et al.* (2020) ^[9] found that 48% of fishermen in Nizamabad belonged to the middle-aged group of 31 to 45 years.

Family Structure

Families were classified into two types: (i) nuclear families and (ii) joint families. In this study, 26% of families were joint, while 69% were nuclear. These results are consistent with Mohan Maloth *et al.* (2020) ^[9], who observed that 71% of fishermen in the Nizamabad District of Telangana lived in nuclear families, while 29% were part of joint families.

Family Size

The study revealed that the majority of fishermen's families (57%) were classified as large-sized, with more than five members. Medium-sized families, comprising 3-5 members, accounted for 47%, while small families with 1-2 members made up 10%. These findings align with Kabir *et al.* (2012)

[8], who reported that 60% of families in the Mymensingh District comprised 5-6 members. Similarly, Maloth *et al.* (2020) [9] noted that 60% of fishermen's families in Nizamabad consisted of 4-6 members. Bhutti *et al.* (2022) [3] also reported a similar trend, finding that 26% of families in the Sabarkantha District had seven or more members, while 23% had four members. Solanki *et al.* (2020) [6] observed that 54% of respondents had families with 5-7 members, and only 11% had families with up to seven members.

Educational Background

The educational levels of fishermen ranged from illiteracy to tertiary education. Among the 46 fishermen surveyed, 9% had no formal education, 71% had completed primary education, 28% had attained secondary education (up to Grade X), and 2% had completed tertiary education. These findings align with Akter *et al.* (2018) [1], who reported that 30% of farmers had attained secondary education, and Bhutti *et al.* (2022) [3], who found that 28% of fishermen had secondary education.

Business Initiation

The study found that 67.5% of fishermen began their fishing businesses between 1991 and 2001. Additionally, 15% started between 2001 and 2010, and 32.5% began between 2011 and 2020. These results are consistent with Shekh *et al.* (2023) [11], who reported that 33% of fishermen initiated their businesses between 2001 and 2010.

Fishing Gear

It was observed that 82.5% of fishermen used gill nets, while 32.5% employed trawl nets for fishing. These findings are similar to those of Ulman *et al.* (2008) [13], who noted that dol nets and trawl nets were predominantly used in Ratnagiri and Raigad in Maharashtra. Similarly, Yadav *et al.* (2020) [2] reported that in Ratnagiri, 21.4% of fishermen used gill nets, 3.6% used purse seine nets, and the majority (75%) relied on trawl nets.

Ports of Operation

The survey revealed that the fishermen primarily operated from three ports: Mumbai (7.5%), Okha (92.5%), and Dholai (15%).

Income Sources

In the study of 40 fishermen families, 32.5% (13 families) depended on income from two members, 15% (6 families) had multiple contributors, and 40% (27 families) relied on a single income earner.

Fishing Experience

The survey indicated that 78.2% of fishermen had more than six years of fishing experience, while 21.8% had 3-5 years of experience. These findings align with Shekh *et al.* (2023) [11], who reported that 90% of respondents had more than six years of experience, while fewer had 1-3 years or 4-6 years of experience.

Conclusion

Fishermen face significant deprivation in terms of basic amenities, with poor educational levels being a major concern due to a lack of awareness and limited income

among their families. Efforts should be made to enhance educational opportunities in these areas, including the establishment of educational institutions nearby. The government should implement effective management policies and provide additional support during the fishing ban season to improve their livelihoods. Enhancing the socio-economic status of the fishing community will not only improve their quality of life but also contribute to national development. Fishermen should be encouraged to participate in training programs to enhance their skills, leading to increased income. Additionally, they should be motivated to explore alternative livelihood options. Establishing a robust extension linkage system will ensure the effective transfer of technologies to fishers. Fishing, being a lucrative business, has the potential to significantly uplift the livelihoods and economic standing of fishermen. This study provides baseline data on the socio-economic conditions, educational qualifications, and technical knowledge of fishermen, which can guide future developmental initiatives.

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