



The Role of Informal Education in Fisher Women's Struggle for Survival in the Fish Market

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Authors' contributions

This work was carried out in collaboration between both authors. Author Meghna conducted the survey and data collection. Authors BK and Meghna worked on the analysis and manuscript preparation. Both authors read and approved the final manuscript.

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ABSTRACT

Aim: Women fish vendors in Bihar, India, have extremely low literacy rates. In general, they have only received primary education, and some are illiterate. Their participation in the fish market, on the other hand, has received considerable attention. As a result, this study was carried out in the local fish market of Patna (Bihar), India to know about the literacy status of fisherfolks, particularly about the women fish vendors.

Study Design: To understand the status of the women fish vendors, as well as their expertise in selling and purchasing fish at the market, a well-structured questionnaire survey was used. An observation-based study was undertaken to assess skills for cutting fish, calculating the amount, and maintaining hygienic status.

Place and Duration: The study was carried out at random during the day and evening hours in various fish markets of Patna, which included local government-sanctioned, and street fish markets for the duration of two years *i.e.* the years 2021 & 2022.

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Methodology: A survey-based study was conducted, with questionnaires covering criteria such as education level, age group, experience, family pattern, gender-based engagement in day-to-day activities linked to fish marketing, and common challenges experienced by women fish vendors. More than 100 fisherfolks (men and women) have been interviewed.

Results: The majority of women fish vendors were either in the local market, street vendors, or door-to-door fish vendors and very few were present in the stock market. During the study, it was also observed that when buying and selling fish, the women fish vendors negotiated confidently. They had precisely calculated the amount, down to a fraction of a fish's weight.

Conclusion: Women were far more determined than men when it came to selling fish. They were also using cutting-edge technology to weigh the fish. They were able to read the digital tools. These female fish sellers were mostly between the ages of 35 and 65. As a result, they were mostly at ease when it came to dealing with stockists and customers.

Keywords: Fish Market; women fish vendors; Fishermen; Illiteracy; stock market. Marketing.

1. INTRODUCTION

India is the world's second-largest producer of fish. Women make up 48.1 percent of India's total population [1] roughly half of India's population and one-third of its workforce. Gender division of labor in fishing communities takes various forms and has been described in the literature, particularly in light of the importance of women's participation in fisheries processing, marketing, and trade [2,3]. With 5.4 million people employed in the fisheries industry, fishermen account for 3.8 million (70.37%) of the 5.4 million people, while women fish vendors account for 1.6 million (29.63%). In addition to the basic household responsibilities of cooking, caring for children, and meeting the family's needs, many women fish vendors work in fish markets. Women are said to be more involved in post-harvest activities than men [4,5,6], as well as being important in marketing as agents, auctioneers, retail, and itinerant stallholders. Women play an important role in fisheries societies, but they are frequently invisible, unsupported, or unacknowledged [7]. These women fish vendors are being boycotted for asserting fundamental rights, regardless of whether they are guardians of the community's family-affirming social culture [8]. They are constantly harassed because local markets do not provide them with well-secured, government-authorized platforms [9]. These women are overlooked because they handle market dealings with various institutions for credit in fisheries operations on behalf of their fishermen/husbands.

Patna is the capital of Bihar, which is located on the southern bank of the Ganges and is one of India's most important states. The wholesale fish stock is in Patna at Bazar Samiti, from which the fish were transported and supplied to other parts

of the city [9]. Transportation, loading and unloading, icing of fish, establishment charges of shops, and other miscellaneous expenses all contribute to the cost of moving fish from point of production to the point of consumption [10]. The demand of a large consumer was met by importing fish from other states too [11]. Fish imported from outside the state are three to five days old, whereas locally produced fish is fresher and of higher quality. People prefer fresh fish in general, and market inputs indicate that local fish are the first choice of most customers. Consumers prefer whole fish, whether in live or iced condition, and frozen fish is rarely seen, except in larger supermarkets [9]. When compared to marine fish, the demand for inland fish typically dominates the market. In Patna, there were government-designated markets, but it was also common that fish sellers sold fish from encroached roadsides and pavements within residential areas. Consumers preferred "closer to home" roadside/pavement markets over designated markets. Men have traditionally run the wholesale market system, while women have traditionally participated in retail fish vending—an activity on which they have relied for a stable livelihood [9]. In the urban area, women fish vendors play an intangible role as a link between fishermen and consumers. Fish selling or vending is a non-traditional form of occupation that provides a living for a large portion of the population in many Indian states [6]. However, the proportion of women fish vendors has decreased significantly over the last two decades in Patna [9]. The primary cause of this situation is a decrease in fish catch, which has increased the pressure on those who rely on the retail fishing trade. Kumari [9] observed during her study that women were seen moving from location to location to sell their fish, halting at each location for a while. Outside of delineated market areas, this type of vending is prohibited. It

exposes women to extortion and bribe demands. Women are frequently forced to rely on their menfolk to deal with these illegal systems, perpetuating their reliance on men [11]. Women with small children or those without other caregivers at home are unable to engage in fish marketing. Family members lent a hand in the fish markets in some cases. Women's participation has been declining in general. The main reason was that they were afraid of being harassed by various sources. The ability to move around while vending was a way to avoid being harassed. Another factor could be that women were hesitant to sit in a market because most of the other vendors were men [12]. Our main objective in exploring Patna's various local fish markets was to learn about the literacy status of women fish vendors and their knowledge of selling and purchasing fish. To know the status of women fish vendors and their skills in the Patna fish market, the study was carried out with an in-depth survey, to assess the actual situation in the fish market.

2. MATERIALS AND METHODS

Our investigation was limited to the major fish markets of Patna. We used a specific questionnaire to conduct a well-structured survey that covered parameters such as education level, age group, experience, family pattern, gender-based participation in day-to-day activities related to fish marketing, and common issues faced by women fish vendors. We interviewed about 100 fisherfolks (men and women) from a variety of locations, including wholesale and street fish markets. We chose ten different observation sites, including both authorized and street fish markets. At every site, we have interviewed 10 fish vendors (men and women equally). In addition to interviewing the fisherfolks, we solicited and compiled consumer feedback.

2.1 Study Sites

Major fish marketing site of Patna:

- Site 1: Bazaar Samiti (authorized fish wholesale market)
- Site 2: Boring road crossing (authorized fish market)
- Site 3: Macchua toli (authorized fish market)
- Site 4: Hartali More fish market (authorized)

- Site 5: Raza Bazaar fish market (authorized)
- Site 6: Macchua toli (street fish market)
- Site 7: Hanuman nagar (street fish market)
- Site 8: Ashiana more (street fish market)
- Site 9: Bailey road (street fish market)
- Site 10: Razapur bridge pavement

3. RESULTS AND DISCUSSION

The focus was on ten of Patna's fish markets, including the government-authorized wholesale market (Site 1-5) and the local (private/government-unauthorized) retail markets (Sites 6–10), which are either rented or occupied on the street. When compared to female fish vendors, the role of male fishers in the wholesale market has become more prominent and dynamic over time in purchasing, because male fish contractors, auctioneers, wholesalers, and retailers dominate the wholesale market (Site 1). There are very few females involved in a limited number of roles only for selling and store. Fish marketing timings in government-authorized fish markets are more flexible than in local street markets because fisher folks spend approximately 5-6 hours per day selling fish in authorized fish markets, whereas fishers in unauthorized locations spend approximately 9-10 hours per day (morning and evening).

The following is the most common pattern of the fish marketing system observed in Patna:

Fish Producer \Rightarrow Wholesale Market \Rightarrow Fish dealer/ Distributor \Rightarrow Fish vendor \Rightarrow consumer

[The supply chain of fish from producer to consumer.]

Moving from the wholesale market to private/local shops, the situation becomes quite contradictory, as women are seen as quite dynamic as the local street fish retailer or door-to-door fish vendors. Sites 1–5 are long-established markets, whereas Sites 6–10 are newly formed markets that arose because of consumer growth on a local level (Fig. 1).

Aside from gender inequality, the next parameter of analysis was education and experience in fish marketing, and the results were quite shocking, as most women fish vendors were illiterate (Fig. 2). Except for the stockiest and contractors, the age distribution is nearly uniform, and most people were uneducated. Illiteracy has a wide

range of consequences for both men and women (Fig. 3). They were, however, very good at processing and marketing [13]. Their expertise in fish marketing is the result of ancestral rituals and traditions passed down from generation to generation [8]. They are unaware of modern fish processing and preservation techniques. Even they were unaware of the benefits provided by the government. Rather than sending their children to school, most fish vendors keep them in the markets with them.

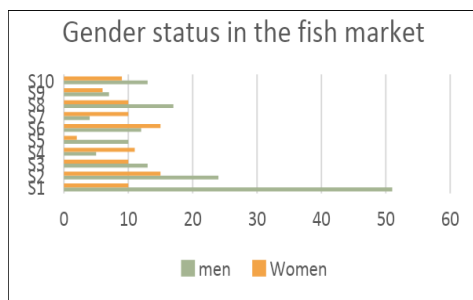


Fig. 1. Participation of men and women in the fish marketing system in the local fish market of Patna, (Bihar), India [in the year 2021]

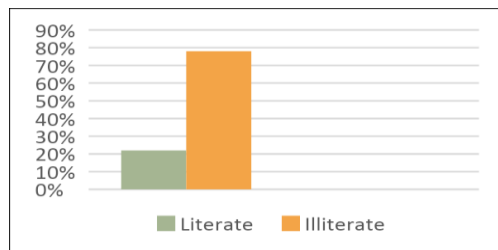


Fig. 2. Literacy status of women fish vendors

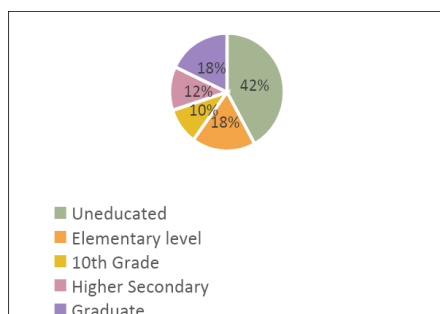


Fig. 3. Literacy status of fisher folks (men and women)

Another interesting finding was that in the wholesale market, males participate actively and make decisions in fish contractor ships and merchants. Local fish markets, on the other hand, had over 50% female participation and decision-making [14]. Women were observed to

be more active participants in fish marketing than males. Street-side and door-to-door fish vendors followed the same pattern. It was also observed that when a well-established fish market is taken over and dominated by men, then women are displaced from that market, and women begin to look for a new place to sell fish. They attempted to locate a new location on the side of the road or street and began selling fish with apprehension due to the uncertainty of selling on the roadside. When the women have gained acceptance from the local community and have begun selling fish, the number of fish sellers will gradually increase. Women fish sellers predominated at first, but after a few months (3-4 months), males became involved and gradually covered the new areas as well. Women were shifted out once more, and she began in a new place. The most dynamic age group of women fish vendors identified in various markets ranges from 30 to 55 years of age (Fig. 4), with older age women fish vendors participating in the market less. The same situation was in Bangladesh, where most fish retailers were in their forties and fifties [15]. Because of their illiteracy, the women fish vendor's marketing experience and age group become critical frames of reference for assessing their proficiency. Certain women fish vendors will bring their children to the fish markets to care for their children while also teaching them about fish marketing rituals. This study concentrated on underage children, primarily in the street fish market (Fig. 5). These children participate in fish markets at the age of formal education to gain early expertise in fish marketing skills. Education is important not only for earning but also for increasing community involvement and livelihood, as well as for conserving natural resources for long-term use [16].

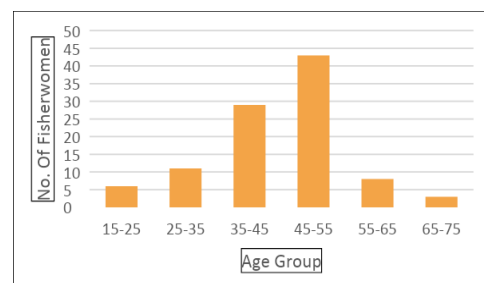


Fig. 4. Age group of women fish vendors

Bihar is also ranked last in the Gender Equality Index and has seen an absolute decline over the previous period [17,18]. The state has the lowest literacy rate in the country, at 63.8 percent, and the female literacy rate, at 53.3 percent, is

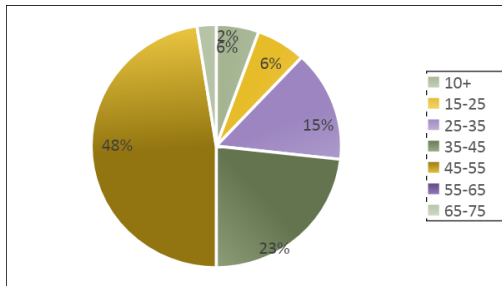


Fig. 5. The percentage of fisher folks' participation according to their age distribution

significantly lower than the male literacy rate, at 73.5 percent. India's 2011 Census [19]. Education is an important factor in changing people's attitudes and motivation. Literacy level is critical for effective participation and operational skill in all income-generating activities. It was assumed that the education of fish retailers would help them gain better access to relevant technical information [20]. In this study, it was discovered that only a few of the male fishermen are literate, with only a high school education. There are very few graduates among fishermen. However, most fish merchants in the fish wholesale market, i.e., Bazaar Samiti, are well-educated. women fish vendors, on the other hand, were illiterate. They had never attended a single school in their lives. Bangladesh has the same problem, with a high rate of illiteracy in fishing communities [15,21]. Because of the poor economic condition of the communities, schools are frequently inaccessible. Other barriers to children finishing school include large families and the resulting educational expenses, as well as the need for the children to work to supplement the family income [22]. Despite their low literacy level, these women fish vendors have learned fish cutting, processing, and price negotiation techniques through ancestral rituals passed down from generation to generation. Infrastructural facilities, particularly fish landing centers, and wholesale and retail markets, were inadequate and unsanitary, posing serious threats to public health on a regular basis (Alam et al., 2016) [20]. In terms of hygiene, we discovered that the situation at Bazaar Samiti was the worst because there was no adequate supply of water, no dumping site for fish residue, an inadequate drainage system, and freely roaming stray dogs. However, the condition of Macchua toli was comparatively better than that of the Bazaar Samiti; here, we saw an adequate supply of water, a proper drainage system, a clean platform, and no availability of fish residues within the market area. In the case of roadside

markets, we discovered a moderate situation in which fish residues are directly dumped on the open roadside. The vendors attempted to keep the area clean, but there is no water supply and an inadequate drainage system. They are also dealing with a major infestation of houseflies. Frequently, fish markets were filthy and unsanitary [23].

4. CONCLUSION

This study observed certain issues that have a negative impact on the social status of women fish vendors in market areas, such as:

- Females' low literacy levels in most markets. Despite their low literacy level, these women fish vendors are skilled at handling fish, such as sorting, cutting, and marketing (weighing and price negotiation), because of ancestral rituals passed down from generation to generation.
- Women fish vendors are primarily restricted to market areas as fish retailers rather than wholesale markets due to a lack of certain major factors such as poor literacy, gender discrimination, harassment, poor sanitation, a lack of water supply, and a lack of a proper drainage system.
- Due to the limited number of government-authorized fish markets, most women fish vendors lack access to secure areas, which is why most women fish vendors prefer door-to-door fish vending to avoid any unforeseeable mishaps.

A fish market is a place to buy commercially significant fish and fish products. Fish marketing is a component of the fish industry that regulates fish production and consumption by selling them. To sell more fish not only locally but also in distant and interior markets, new marketing techniques have been implemented. In these areas, literacy drive and gender equality are a requirement. It needs to be kept up all over the world.

COMPETING INTERESTS

The authors have declared that no competing interests exist.

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