

Fresh To Home: Opportunities And Challenges Of Market Digitalisation For Coastal Women Fish Vendors

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**Gender
Perspectives
on the Digital
Economy**

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Chapter 1 Introduction & Review of Literature

Globally, women's participation in labour is 39% and in India, it is low as 20% (ILO, 2021). Women's reasons for non-participation in work and whether full time or part time is all diverse and an interplay of social, economic and personal factors (Srivastava and Srivastava, 2010). Majority of the working women are in the informal sector ranging from street vendors to wage employees. Around 81% of women work in informal sector in India (ILO 2021), which is mostly low paid with no social security. Workers involved in informal employment can be divided into four categories: own-account workers, employees, contributing family workers, and employers. Among these, at the global level own-account workers and employees constitute more than 80 per cent of informal employment, whereas contributing family workers and employers account for 16.1 per cent and 2.7 per cent of informal employment, respectively (ILO, 2018). There is a gendered implication in working in informal sector as women are paid less than men and often experience discrimination and abuse at work place. In South Asia, sub Saharan Africa and East and South-East Asia, more than three quarters of all employment is informal where women more than men are self-employed (Chen et al., 2013).

After agriculture, fishery is the traditional occupation of women in India for many centuries. Women involve in fishing allied activities like fish vending, net making, workers in fish processing and peeling units and as labourers at harbor and market. Women are mostly part of work during pre or post harvesting of fish. Fish vending is the most preferred work engaged by women compared to men. 1,81,686 women do fish vending in India (Marine Fisheries Census 2016). There is a clear gender-based division, where women work in shore-based activity and men in fishing, and this is different across communities. Like in West Bengal participation of women is very negligible and limited to retail marketing and net mending. While in Andhra Pradesh and Tamil Nadu, women participate actively in sorting, grading, fish salting and drying, fish loading and unloading, net mending, retail marketing and fish processing (Biswas & Rao 2014). While in the State of Kerala, which has a coastline of 590 km, women play an active role with extensive

involvement in the post-harvest operation (Dhanya, 2013). There are 15629 women fish vendors compared to 3034 male vendors in Kerala (Marine fisheries census 2016). The marketing of fish by female vendors in Kerala is generally done by house to house selling or in markets. Women carry the head loads with fish for 20 to 30km in a day which involves buying fish from auction centers and travelling to market or vending locations.

If we look into the life of fisherwomen, the transformation of fisheries sector, mainly brought by mechanization, has engendered multi-faceted changes in the role and contribution of fisherwomen. Even though in Southern Kerala, women have taken up fish vending as their traditional occupation and to earn their livelihood, low educational status, poor health, long hours of work and low income and savings made them more exhausted and underprivileged (Rekha & Minimol, 2017). According to John and Diwakar 2014, women fish vendors face four-dimensional discrimination from the mainstream society as fish vendors, as women, as those hailing from fishing communities and those hailing from the already excluded communities of Latin Catholics and Dheevera community. They are excluded from mainstream social groups as they are members of fishing community; they are excluded by fishing communities because they are engaged in fish vending as their source of livelihood; they also share the discrimination as women in a male dominated community. The fish trading women face severe competition from not only the men folk who use two wheelers in domestic marketing but also the agents of the export companies resulting in the non-availability of quality fin fishes which commands high consumer preference in local markets (S. Ashaletha, C. Ramachandran, Sheela Immanuel, A.D. Diwan J & R.).

Kerala has a high per capita monthly fish consumption rate of 2.26 kg in rural regions and 2.21 kg in urban areas, and ranks second among large states with a per capita fish consumption rate of 19.41 kg per year (Sajeev, et al. 2018). The advancements in technologies and digitalisation has paved way for the transformation of traditional markets to online or electronic or digital marketing system. Technology and digitalization has led to opening of new market. A study by Gurumurthy, Chami and Anwar (2019) says

that there is a high drop out of women from labour force globally and nationally. This digitalization of work would bring more polarization in labour market and women dominated works will be at risk. The new market opportunities which are brought by the digitalization process are restricted for many women as they have less access to technology and are forced to be in the traditional market or drop out from the value chain. Especially women in informal sectors who are generally invisible dropout in way silently (Satpathy 2018).

Fish being a perishable good was away from online trade for a long time, but the technological advancement in technologies and digitalisation has paved way for the transformation of this into online or electronic or digital marketing system. A study by Salim et al 2018 shows that majority of the online fish vendors limit their delivery location, maintain storage near to harbour, buy fish from local fishermen to ensure sale of fresh fish. All these online markets have digital payment systems which help customers to have easy transactions, especially during COVID 19 pandemic. The COVID played a significant role in the shifting of physical shopping to e-shopping of daily essentials starting from vegetables, fruits, and milk to fashionable clothes through online platforms such as Bigbasket, Grofers, Amazon, Myntra, Swiggy, Zomato and others. Thus the increased reliance on e-shopping, which is a threat to the street vendors has even made a transformation in the culture of consumption pattern (Chakrabarthy & Ahuja 2021). During the lockdown, Mercy, a fisherwoman from Thiruvananthapuram, says she has lost several customers as people were accustomed to internet purchases and home delivery (Sudhish, 2021). The havoc created by COVID-19 among the women fish vendors cannot be neglected. Since limited boats are fishing or no fishing activity were carried out during lockdown, the high demanded for lower price due to pandemic (COVID-19 impact on livelihoods of marine fishing communities). At the same time, social distancing and restriction on sale pushed customers switch to purchase fish online and thus taking away women's customers who have been built through years of trust. In most of the places in the State, fish vendors were considered spreaders of COVID 19 as their traditional method

of sale involved physical interaction with multiple customers. This also paved way for the easy entry of digital technology of fish trade.

This conversion from traditional fishing methods such as door-to-door, roadside fish vending, markets to online marketing platforms such as online applications or sites, social media groups etc. has made an impact on the life of the local women fish vendors. Women always had competitors in the market, but with digitalisation of markets, the whole focus is on local customers who once depended on traditional vendors and it has given customers all liberty to choose the market, which it doesn't have to be these women vendors. At the same time, these markets are really unknown to these women, that is the vastness and the kind of impact that is going to make in fish trade is still unknown to women. The study tries to draw the challenges faced by women due to the digitalisation of fish trade and changes in livelihood. Considering the fact that the scope of online fish trade, the study would also explore the opportunities that the trade is bringing for the women vendors.

Chapter 2 Methodology

The present chapter discuss the methodology used in the research. The research design, research questions, objectives, sampling, method and tools of data collection are explained here.

2.1 Objectives:

To identify the online market competitors and digital advancements in marketing fish

To understand the opportunities and challenges faced by coastal women fish vendors due to the digitalisation of market

To understand the changes in women livelihood engagement due to intervention of digitalisation.

To develop women inclusive framework for fish sale using digital market

2.2 Universe:

The universe of the study comprise of women fish vendors as well the online sellers involved in fish trade. The women fish vendors included in the study are from three coastal communities.

2.3 Research design:

The study takes a qualitative approach with descriptive research design. The study tries to understand the challenges and opportunities for women fish vendors through digitalisation of fish trade. In depth interviews and focus group discussion has tried to capture their own experience in production with respect to the introduction of market digitalisation.

2.4 Method And Tools Of Data Collection

The researcher has used purposive sampling for identifying both women fish vendors and online fish sellers.

In-depth Interview

In-depth interview was administered using semi structured interview schedule. The schedule asked about women's social and economic conditions, market participation, knowledge about digitalisation of fish trade and its impact. In-depth interviews were taken from women in three different coastal communities. The communities include Poonthura in Thiruvananthapuram, Neendakara in Kollam and Bekal in Kasaragod districts of Kerala. 30 interviews were done, 10 participants from each of the coasts. The interviews with women vendors were mostly at their home or in the neighbourhood. Interview durations ranged from 1hr-2hrs. 30hrs. Interviews were audio taped with the permission of the participants, some of the women were not comfortable in recording and so interview notes were taken. In the evenings most of the women spent some time to relax, the interviews always went bit longer as they would share their experiences of the day, about their market interactions, daily routine, customers, family and so on. The age of the women ranged between 32-65 years.

Indepth interviews were also taken from online fish traders. 5 men who are currently engaged in the online fish sale through various social media platform were included in the study. The Director, Sales Division of one of the leading brand in online fish trade also gave a brief interview regarding their operations and use of digital marketing of fish. But the interview has not addressed all the questions during probably finding it as a threat to their brand.

Focus group discussion (FGD)

One focus group discussion in each of the coastal community was conducted. Focus group discussion had 10 women participants in Poothura and Neendakara, while in Bekal there were 8 women fish vendors. The FGD brought out the common challenges women

faced in production and how they articulate the visible change after the introduction of online fish sale.

Chapter 3- Women Fish Vendors: Family, Market And Society

This chapter sets the context to understand the social and economic status of women through their interaction in the coast, market and society. Chapter intends to bring a brief outline of their negotiations and struggle to maintain market participation. This helps to understand how digitalisation will burden the women who are already marginalised in the livelihood and in the coast.

3.1. Status of education among the women fish vendors

Illiteracy or poor education among the women of marginalised communities stand against the Kerala model of development. Education is the base for the women for decision making, learning and adapt to new technologies, to enhance socio-economic condition, to understand the government and non-government supporting system, to raise voice against the denial of their rights, and to get empowered. No women who have participated in the study have completed upper primary education and even some of the women cannot read or write. Education or literacy is a major factor which exclude women from the digital arena.

“Even when my mother and father were alive, I had to deal with financial restraints. I went to school till fourth standard. One day my teacher punished me for coming to school without studying. I came back home and sobbed uncontrollably and said that I will never go to school again. It was in my 4th standard and had no idea about the importance of education.”. – C said

“Even though I haven’t get proper education, I can calculate. People around claim that despite of my lack of proper education, I know maths very well, I can calculate the correct amount of fish I sought. I don’t know how to read and write. It was due to my family’s financial difficulties. My father was an alcoholic who didn’t take care of the family and my mother used to sell fish to support the family. We were 8 children and everyone had to do work for the daily requirements of the house. So, our mother didn’t care about our education. I studied until 2nd or 3rd standard, one of my brothers until 4th standard and other until the 7th standard and so on”. - A said

Most of the women have shared that in their childhood they were ignorant about the importance of education and neither their parents focused on sending them to schools. The reasons are myriad, but poverty is major constraint that push women out of school. Girls start to engage in income generating labours to support their family. Majority of the women fish vendors have poor education. It was mainly because of the unawareness on the importance of education of their family and financial difficulties. At a very young age, they have to start working for their family or had to take care of their younger ones when their parents go for fishing and fish vending. This illiteracy stand a great importance in their life especially in this technologically advancing and digitalised world. It is not only women, but also men were also not educated due to their traditional occupation and financial status (Ravishankar 2017). Some of them have even taken advantage of the opportunity provided by school to obtain nutritional food for themselves and their siblings basically because their family was very poor even to have daily meal. Parental alcoholism and households in poverty push women to discontinue education. Thus in the younger age women enter fish vending as that is the easiest available option for livelihood. Even though some of the women are illiterate, they know calculation, which they have learned after engaging in the fish trade. Few women have said that in their initial period of sale, they found difficult in calculating and remembering numbers, which has made loss in the sale. But they have learned over the period to calculate and manage money.

Poor education and poor skill gives women lesser bargaining power in the market. Women enter fish trade with no knowledge about market and trade skills. Most of the women fish vendors are trained by any of the senior women in their relation. They help them to identify the sale area whether it is market or door to door sale. According to above narration by Baby, her skills in fish selling was very poor in the initial days and her sister in law guided her to sell fish in profitable manner. She took Baby along with her when she went for door to door sale and showed her how to fix price and deal with the customers. She also identified a locality where Baby can sell fish, which is next to her sister's area of fish sale. The Muslim women engaged in craft production in Uttar Pradesh also have this informal recruitment, were older women taught their sisters, daughters, daughters-in-law, other younger relatives and neighbours to do the craft work (Chambers 2020).

3.2 Women's labour participation and position in the family, coast and market

Women narratives emphasised mostly on their daily life in the coast and experiences in the coast and market. The literature review has already mentioned about the gender division of labour in the coast. This clear gender division of labour could also be seen in all the coast included in the study. Women engage in post-harvest activity and men in fishing. Majority of the women made similar statements like 'Sea is where men should go', 'Kadamma (local connotation for sea) won't like a women stepping into her' 'Kadamma would be angry and women are not strong like men and therefore we would whirl in her waves'. Sea being pure as it is worshipped and considered as God as it provide them livelihood and guard them will be polluted with women's 'impure' body. Here fisherwomen all throughout her life is not pure enough to touch the sea water and the responsibility of maintaining the sanctity of the sea lies on each women which is controlled by the whole community. This seclusion helps to maintain men's superiority by owing their prime resource that is 'Sea'. Thus fishing is highly restricted for women and therefore they engage in shore based production.

Even though, fishing and allied activities are major livelihood of the coastal communities, women going for fish vending is considered demeaning the family status. Women's participation in fish vending is seen as a low status occupation in both Poonthura and Neendakara compared to Bekal coast. Fish vending unlike other occupation gives lot of mobility to women, the fear of fisherwomen using this opportunity by breaking the norm of chastity could also be a reason for disapproval of coastal society on women's fish vending activity. Women's chastity has a lot of importance in the coast. The fisherwomen has the responsibility to safeguard the life of men in the sea by being chaste in the absence of her husband. The chastity of the female counterpart is not only necessary for the life of fishermen in the sea but also for the well-being of the community as a whole. Therefore women engaged in fish vending did not have much status even in the coastal community as they break the patriarchal contract. Unmarried, young women do not engage in fish vending, which is practiced across Kerala. It could be related with the earlier argument of controlling women's sexuality, unmarried younger girls could be vulnerable in terms of working in a market or even door to door sale and fish vending is not a kind of occupation a family prefers.

Even though women play a major role in coastal economy and household economic management, they are seldom considered the primary bread winners. They are majorly considered subsidiary earners who enter the labour market when their husband or father fail to meet the household expenses. Husband's illness or alcoholism, debt due to marriage or health expenditure and expenses for daughter's marriage are some of the pushing factors for women to enter fish trade.

"I've been doing this for 12 years now. I got married before 30 years. My husband's earnings were enough to help make ends meet. However, he is now suffering from arthritis. As a result, he is unable to attend on a regular basis. I took out a loan to build this small house. I have three children, one of whom is married and has children. My husband still go for fishing as well". – A said.

Even some of the women have been in the trade since their childhood, they used to go with their mother for selling fish. It is seen that women have to negotiate with their

partner to engage in fish trade. A women entering fish trade is also seen as 'husband's inefficiency to run home' or 'utter poverty in house'. It is also perceived as women's engagement in fish trade gives higher mobility which limits men's control especially in a community which has strong gender bias in terms of public and private spaces, labour participation and sexuality. Papanek (2019) says that women's paid and un paid work affects the family's social standing. Here status is be defined as the "collectively shared assessment or evaluation of a societal unit on the basis of certain objective characteristics of the unit". The familial values in the coast also expects fisherwomen to support the men especially because they are the breadwinner and gives higher status for men's occupation. Here the support expected from women is in terms of cooking and taking care of domestic chores, taking care of children, meeting husband's need in terms of being at home and serving him food when he returns from sea, agreeing his sexual needs, praying for his safe return and attending religious prayers and talking politely to husband. Women's character determines the progress of her husband in fishing and income. This status decreases, when women enter fish vending and fails to meet all the familial roles which contribute to status production even if women meet all the household expenses through fish sale.

The daily requirements are met from the daily earnings of the women fish vendors and fishermen. Along with that the decisions regarding the education, health, marriage etc. has become the responsibility of women in many of the houses. Most of the women said that their husbands do not support in household expenditure or even the responsibility of the children. As a result, money for such activities is borrowed from money lenders in the form of loan, which later becomes a threat to them. The money is usually taken from small money lenders or micro credit institutions. They were unable to repay the entire amount due to a drop in income caused by COVID 19 and the impact of digitalisation.

The participation in fish vending gives women higher mobility and lesser financial dependency on men as they contribute to household income creates a friction in the family as the intra household power changes. Therefore, many women face violence from their husband. Men come drunk and beat their wife, which is very common in many of the

households. During one of my interview with a woman, she said her husband beat her on the previous day as she was late and was not there at home when he arrived after fishing. 'I give him a part of my sale every day after work or else he will scold and beat me. He will question my chastity and he will ask where I was the whole day and with whom I was roaming? My son in law is with us, he will hear all these. Isn't it bad? Better I give him the money', Philomina, 47years

When the control over money in the household is with women, men take over the control by abusing and beating their wife. The above narration shows that the husband holds the power to control his wife by questioning her mobility and her decision in household spending through physical violence. Domestic violence among women in the fishing community is reported low. Women vendors in the coasts of Poonthura and Neendakara has disclosed physical and financial abuse from their husbands. One woman said that her breathing problems are due to her husband's regular beatings. She says she no longer wanted to live as her husband used to beat her every day and is said to have relationship with any other women.

In market fishermen and fisherwomen are competitors. Men who are part of market are usually from Muslim fishing communities. Men in the fishing communities where the study was conducted do not engage in fish sale. The fish vendors have to pay daily floor rent for selling their fish in the market. The rent collectors are always abusive and talk badly with the women. Men are mostly large-scale sellers compared to women, men when engage in fish vending, are seen to increase their sales and business while, women after spending many years in fish vending are still not able to increase their business. Women have to compete with men at auction centers as well as in the market. Women as they lack higher capital are usually sidelined to buy small quantity of fish compared to men.

Majority of the women fish vendors are considered vulnerable because most of them are elderly and suffer from high blood pressure, respiratory problems, arthritis, thyroid disorders, and other ailments. Furthermore, they have to carry the heavy load in extreme

climatic conditions such as heavy rain and hard sunlight. The COVID situations had exacerbated the conditions more badly as they have to walk long distance for door-to-door fish vending because of the reduction in sales due to online marketing.

Chapter 4 - Digitalisation In Fish Trade And Its Impact On Women Vendors

This chapter tries to look at various aspects of technological advancements in marketing of fish. There are big companies as well as small vendors who have entered fish trade. There are lot changes that happened in the livelihood of women fish vendors during the pandemic as they were completely shut without sale. Even the emergence of digitalisation and its expansion was during the pandemic that affected them the most. Later part of the chapter explains the fish vending experiences and the impact of digital platforms and online payments in women's fish sale.

4.1 Fish trade going online

Unlike other consumables selling fish online is a challenge as fish is highly perishable. The change to online marketing of fish began, especially after introduction of Individually Frozen (IQF) method of freezing fish. IQF is usually used when cold storages are located far from the coast and require longer shelf life (Dutta 2015). With Individual Quick Freezing, the cell destruction that is caused during the process of refrigeration is minimized thereby maintaining the flavour and texture of the product, even after defrosting. With individual quick freezing it is possible to maintain high quality while also flash freezing the seafood individually. This prevents, clumping, discoloration and drip loss (Freezing seafood using IQF technology). This is extremely important as most of the fish sellers online advertise as

‘fresh fish’ and the customers also look for fresh and clean fish online. Large storages and IQF has facilitated online sellers to widen the market as they are able to meet the large number of customers demand. The outbreak of COVID-19 was another reason for the expansion of digitalisation in many sectors. The digital marketing system and new technologies that has sprouted before the emergence of COVID-19 had started to flourish after the lockdown. Since unprecedented surge of COVID-19 cases forced people to stay at home during the lockdown, which made them to depend upon the easily accessible modes for online markets. This was also reason for many of the households to depend on online markets for fish.

E commerce sites, facebook page, whatsapp message, SMS or call are the major platforms used for online trade of fish (Sajeev 2018). <https://www.freshtohome.com/>, <https://www.licious.in/>, <https://www.dailyfish.in/>, <https://www.bigbasket.com/> and <https://onlinekochi.com/> are the major e commerce sites that sell fish in Kerala. These websites have diverse variety of fish displayed in variety of dressing options like steak, whole, curry cut, fillet and ready to cook. Interview with Director, Sales Division of one of the leading brand in Kerala said that they buy fish from various harbors and they claim they do not freeze fish for long time. They do have cold storage near the coast. They were earlier into exporting fish and now shifted to trade fish locally realising the market potential. They started their trade in Kerala and have expanded to different cities now. There are frequent advertisements of these brands in Television and Youtube to attract the customers. These are the bigger online merchants who have the potential to reach huge customers, have facility to store fish in bulk especially with cold storage or IQF method, have multiple merchants from various harbours and use various marketing strategies like video and print advertisements, emails, sms and social media.

Apart from these bigger online merchants² mentioned earlier, there are local online sellers who sell fish using social media platforms. They were majorly young males who

² Merchants who trade fish in ecommerce sites and have large number of customers who covering a city or some state or multiple cities.

lost job during the pandemic who started their business in fish sector. In the present study 7 online sellers were interviewed who were selling fish through social media. It is also important to understand that all these sellers are not from the coastal community

“I started a WhatsApp group with people I know for online marketing. Every day about 6:00 a.m., I purchase an average of 30kg fish from the market, update it in the WhatsApp group before 8:00 a.m., and sell the cleaned and cut fresh fish at homes with my bike, according to the order. People pay liquid cash as well as transfer money through online payment applications. My family members were in charge of cleaning the fish. It was successful during COVID and can be free after the vending”. – Online fish vendor from Ernakulam district

These men buy fish from the harbour or bigger market for about 30kg to 100kg fish. The quantity of fish is mostly based on their geographical accessibility. They usually trade within 20km distance. They update the daily catch on Facebook or Watsapp group and customers place order by call or message. Out of 5 interviewed, only 2 had physical space for storing and cleaning fish. Majority of the men did these at home with the help of the family members. They say that most of the customers prefer cleaned fish. They were the major challenge for the local women vendors as these men marketed fish to households by creating groups in Watsapp and Facebook which were easy access for the households. As women trade fish locally at various locations, these online vendors were the major challenge as these traders made direct contact with the customers and easily took over their market. The product reached the customers clean and ready to cook even before the women vendors. Those who did not have storage facility limited the fish quantity to 50kg-80kg so that it could sold on the same day.

“We started online fish marketing during COVID days. We take only a few load and whole fish will be sold out before 11:30 am, therefore we were able to give fresh cleaned fish. We have a link with Kudumbasree, and with their support, we were able to create Whatsapp

groups easily. The orders are placed with the help of our children or relatives in bikes. We don't need license to start fish vending if it is not operating as a shop". – XX, young online seller

The young online vendors doing fish vending include both individual and group sellers. The group sellers are usually men who partner with friends. This help them to deliver fish and share multiple roles of buying, cleaning and delivering fish. All the men interviewed in the study started the online fish trade during COVID 19 pandemic period. Three men interviewed lost their job during the period and decided to do fish trade as it was the easiest occupation to enter.

Anybody could go to harbour or main market and buy fish in large and could start a business. Since fish vending is an occupation that requires no licence, it find easy for the commoners to start fish sale using new technologies. The FSSAI (Food Standards and Safety Authority of India) registration regulates and supervises food safety. The fish retailers must obtain an FSSAI food safety licence in order to meet the legal criteria. However, itinerant vendors, petty shopkeepers, and temporary stallholders are exempt from the Act, allowing for the growth of new young fish vendors. The requirement of FSSAI registration has become irrelevant as the majority of new young fish vendors create WhatsApp, Instagram groups or Facebook groups and sell through online mode in vehicles. Unlike vegetables, fish could be stored in cold storage for few days. When women vendors were not able to go for sale during the lockdown, these men used the digital platforms to sell fish. In a 6 months – 1 year most of the households found this comfortable and at ease as they get fish at their door step cleaned. Men who were engaged in fish sale mostly in the age of 20-30yrs, who were educated and have vehicle for taking fish to the customers. It was easy for customers too as it did not require the hustle of ordering but just a message on Watsapp or Facebook group.

Poonthura and Neendakara coast are located close to town and women vendors from these coast usually trade fish majorly to urban dwellers. While women in Bekal coast covers rural population. This urban-rural difference in customers shows a great difference in customer's usage of online fish markets or vendors. Customers using payment applications like Google pay and other online payments also less compared to other two

locations. Even the ecommerce sites have not established market in these areas probably because they do not find it as a potential market. As discussed earlier busy lifestyle in urban cities, especially women's participation in labour market who have little time in domestic work prefer cleaned fish over at their door step. The problem of waste disposal and management is also a concern for urban dwellers compared to rural areas. These probably are the reasons for rural population to prefer local fish traders compared to online traders.

Poonthura and Neendakara are located in the southern districts of Kerala, while Bekel coast is in the extreme northern district of Kasaragod. Urban- rural difference are not the only difference but the difference in the market nature could also have influenced the establishment of digitalised markets. In 1953, an agreement was signed between the United Nations, the Government of India, and the Government of Norway called the Indo-Norwegian Project (INP). The agreement's main aim was to invest in a backward economy, especially to uplift the coastal communities through prawn farming. Prawns were growing in demand in the international market, and therefore trained fishermen to use trawl nets and mechanized boats. But as it required higher capital, a new group of merchants, middlemen and financiers entered the market and pushed out the fishing community (Hemaraj, 2020). Thus implementation of INP in southern districts of Kerala brought a shift in the whole value chain, resulting in entry of workforce outside the coast for fishing and fish trade But this entry of others did not happen in the Northern coasts of Kerala and fishing and allied activities are still a caste or coast based occupation and not accessible for people who are outside the coasts. Even though fish trade is a highly stigmatised occupation, technological intervention in the trade has reduced the stigma. A study by Phung 2021, when Uber taxis were introduced, they were distinct from the taxi drivers and the stigma attached to taxi driving deflected. There were multiple reasons for this stigma deflection, one among them is the different channel or technology that is associated with Uber which distinct themselves from the taxis. In the same way stigma associated with fish vending did not transfer to the young adults who also were selling fish but through a different platform. They identified themselves distinct from the traditional fish vendors as they were educated men using online medium for sale, their identity is not attached to

who sells instead how they sell. Customers usually identify the whole sale as 'online fish'. This could also be a reason why young adults entered fish trade even though fish trade is a stigmatised occupation.

4.3 Impact of digitalisation on women fish vendors

Fish vending in Kerala is majorly done by women. Women from Christian and Hindu coastal and men from Muslim coastal communities engage in fish trade. There are 9750 women fish vendors compared to men fish vendors in the State (Marine fisheries statistics 2015). Therefore digitalisation of fish trade has largely affected the women vendors more.

Women fish vendors who were already marginalised and vulnerable in the traditional markets were more burdened with the introduction of ecommerce and online fish trade. Even though there were online marketing of fish earlier, COVID 19 promoted online fish trade. There is a reduction in customers going to market to fish. Women who were the breadwinner in majority of the households were severely affected by the reduction in income. As women's fish sales declined, some families found themselves in financial distress. Because they rely on daily earnings, have no savings, and have large amounts as debts, the only way they can deal with such situations is to pawn the gold of any family member, or face extreme poverty. Even women's time spent in the market has also increased. Majority of women fish vendors' life consists of rising up early in the morning, doing domestic tasks, buying fish from market or landing centres, vending fish at market, roadside, or door-to-door and travel home. In door to door sale, women vendors have to reach households between 10.00am- 12.00pm, as women in the households will be preparing lunch and they might look for other sellers or online purchase or go to market if the women vendors are late. Because of this women vendors have to sell fish for lower rate when they are late to the houses. Thus we could say the online vendors and markets have increased women's vulnerability in the market. Women fish vendors used to sell large quantities of fish by purchasing fish for a high price, but their sales have decreased, and they now only buy fish for a lower price. Women spend an average of 9-12 hrs a day in production, but now they have to spent more time in market to sell their fish. They had regular customers, a fixed area for fish vending, a fixed price to purchase fish, and a fixed time to go vending and return home. The COVID-19, on the other hand, had changed

their daily routine. Prior to COVID, the women fish vendors could reach their home at noon or at a fixed time because the fish would simply sell out. However, as a result of digitisation, their sales declined and have to spend more time in market or sometimes customers demand to give cleaned fish, which women are forced to do out of fear of losing customers. Thus women experience time poverty, that is less time for personal care due to the heightened market demand as well as their care work at home.

Some of the men vendors in the markets temporarily shifted to other livelihoods like fruits vending or selling other food items. But this shift in occupation did not happen among women vendors, either their sale reduced or they have stopped engaging in fish trade. Men are seen to shift to alternative livelihood because of their access to livelihood resources, capital and the social capital which women lack. Women vendors even cannot make a quick decision in shifting livelihood in the prevalent cultural norms.

The demand for mobile payment applications such as Google Pay, Phone Pay, and others has become essential, as the lockdown measures, as well as physical distancing and fake news such as COVID 19 is spreading through notes and other means, have paved the way for an increase in the use of such online payment facilities. Women vendors have mentioned about the sales they have lost just because they did not have payment applications. While some of the men vendors in the markets use Online Payment Systems (OPS). Both young women or older women in my study do not use any online payment apps. Nahar, 2022 says that men in small and medium enterprises use Online payment system more compared to women. The study says that men's finds it useful more than women. And regarding the perceived ease of using OPS, women sometimes find it difficult to utilise internet based services as they find it complicated. The digital illiteracy is high among women vendors compared to men vendors in the market. Sometimes the online payment is managed by the children or other relatives of the male merchants, which is also absent for women either due to their reluctance in using technology as well the lack of support. Some of the women fish vendors even said that using such facilities will make their life difficult as they will have to wait whole day to go to ATM and take the money. This can be one reason that they are reluctant to use such facilities.

4.4 Opportunities of digitalization in fish trade for coastal women vendors

Digitalisation has brought in opportunities in fish trade as fish like any other commodity could be marketed online. It has brought advantages to both customers as well as the sellers. For customers', they could choose the fish of desired quantity from the website or social media being at their home. They don't have to go to market and could get clean fish at their door step. Cleaning fish and disposing fish waste is a hurdle for most of the households, especially young working adults who are staying in apartments. That is the reason most the online sales have flourished in the urban areas. Customers could have immediate response from the sellers for their queries and even manage the delivery timing. From the sellers' end, they could sell their fish without being in a physical market, which is most of the time challenging to compete and get market space with the traditional vendors. Sellers could connect with customers and know their choice of fish without going to their house like the traditional vendors. One doesn't even require high end softwares or user interface designs for sale as most of the new age youth sellers have used social media platforms like Whatsapp and Facebook for sale.

Thus, these new opportunities in digital marketing of fish has lot of opportunities for women vendors too as fish sale has been their traditional livelihood and therefore their knowledge on fish, market and networks with different harbor is much higher than the new age sellers. If one look at the larger brands like Freshtohome or Dailyfresh, they have workforce collecting fish from various harbours in the city, through which they bring diverse fish variety. As most of the harbours are near the coastal belts, the fishers and labourers are from the coastal communities with whom women vendors could easily establish networks. Women vendors have established markets, as they have customers who have been buying fish from them for years. Therefore, when these women include digital marketing techniques, they do not require advertisements or strategies to identify customers or establish market like the new traders. They already know the customer's demand and even individual customers' liking of certain fish. This knowledge about the market itself is the greatest strength women possess, which can be reproduced while merging technology in their fish trade. Women could work along with other women so

that they would have a larger pool of customers. In all of the areas covered in the study, fish vending is majorly done by women.

Unlike the bigger online traders, the new age fish sellers are majorly young adult males who have knowledge about social media and online banking. Digital illiteracy is the major challenge for women vendors but they could be supported by their grandchildren who have smartphones and are exposed to digital media. Youth already have a supporting role in coastal women's participation in production. Most of the youth in Poonthura and Neendakara have rikshaws which help the women to reach their market or vending locations. In fact, availability of these rikshaws have helped more women to engage in vending as public transportation was always a hurdle. Youth could assist women in managing the social media accounts or online payment platforms and even deliver fish to the customers.

The focus group discussion with women vendors in all the coastal communities have talked about the young women's entry in fish vending. Traditionally, women vendors are married middle aged women, but today there are younger married women in the age of 30-35yrs who are doing fish vending. These women barely have access to technology but could be trained to use digital platforms for fish trade. Women while entering fish trade, usually go with the older vendors to learn the market and vending techniques and here while indulging in digitalization, younger women vendors could manage the online platforms and assist the older women vendors. Unmarried, young women from fishing community do not engage in fish vending, which is practiced across Kerala. It could be related with controlling women's sexuality; unmarried younger girls could be vulnerable in terms of working in a market or even door to door sale. It can also make a girl less preferable for marriage as 'fish vending' is associated with higher mobility and provides opportunity to work along with men in the market. But with market digitalization, younger women who want to engage in fish vending could do it without physically going for vending and therefore it will not affect the community's gender notions related to livelihood. One of the major advantage of buying fish online is receiving fish in the desired dressing options like curry cut or whole or marinate and these activities could be done by the younger women.

All women included in the study are members in one or two self-help groups. And most of them have taken loan for their household needs or working capital for their daily sale. All these SHG's provide loan for women to start enterprises, which could be utilized by women. As part of women empowerment program under Matsyafed³, there is interest free loan scheme for women vendors as working capital for fish vending. Mahila Samridhi Yojana is another scheme which provides loan for women to engage in any production activities. Women vendors could use all these schemes and programs for developing capital for their enterprise.

But this growing opportunities in fish trade is hardly accessed by the traditional women vendors, who are being in the occupation for past 20-30yrs. Considering both challenges and opportunities, following are some of the recommendations which would help women to overcome challenges as well to utilize the opportunities at best. These recommendations expect to develop women inclusive digital markets.

Following are the recommendations:

As discussed earlier, there are various programs and schemes specifically designed to address women vendors but during the study none of the women have utilised these provisions for enterprises or initiating any productive activities. Most of the women have taken interest free loan as working capital for their daily trade. It is important to evaluate and audit the existing governmental schemes, policies, projects and programmes of the coastal women to know women's utilisation trends. On the other hand, it will also help address women's awareness regarding these provisions if needed. This will help to redesign the projects to support women with the changing market.

Fish trade should also have license similar to sale of food materials as there are also situations where chemical preservatives are used in excess which could be in the supply chain and into the market through online platforms. 'Fresh' is the key word in fish trade, which is claimed by all the online and retails traders but quality checks are mostly unregulated.

³ The Kerala State Co-operative Federation for Fisheries Development Ltd, commonly known as Matsyafed was established for social and economic development of the fishing communities in Kerala.

Digital literacy program, specifically considering the digital market should be provided to women vendors. Post pandemic, such a training program was initiated by Thiruvananthapuram city Corporation for more than 650 street vendors. The objective of the program was to equip them to accept digital payments using UPI QR codes and provision of a system which enables half of the street vendors who have no smartphones to accept the digital payments in their accounts using regular phones via SMS notification. The 12 day camp provided session on the benefits of digital payment, its security aspects and the cost-saving through the implementation of the scheme and also by implementing a special cash back system (Praveen 2021). Similarly, training programs could be organised by the State Department of Fisheries vendors.

Government should provide technologically advanced marketing strategies such as mobile phones, freezers, boxes, and an initial investment to meet the fundamental expenses. There are younger women who have joined in fish trade who can be taught on using mobile banking and technological innovations for fish trade.

All these interventions in the traditional markets and women's engagement require a pilot intervention in any of the coastal villages to understand how women's utilisation of digital markets are accepted. The need for embracing technological innovation should also be understood by women, which require slow conscientization process. A trial and error would require to include women to trade online or use technological advancement for fish trade.

Chapter 5. Conclusion

The present study is an attempt to understand and explore how the market digitisation has impacted women fish vendors in Kerala. Poonthura, Neendakara and Bekal are the three coasts covered in the study. The study takes a qualitative approach with descriptive design. In-depth interviews and Focus group discussions were the major data collection tools used for the study.

The occupation of fish vending is highly stigmatised and every day is a struggle for fisherwomen, requiring negotiations within oneself, family and society. The question on morality and abuses are everyday experiences for women even from their own partner. This subordination is visible in fisherwomen's life, family, market and public spaces. Women's subordination is basically because women lack resources and that was visible in the earlier life's of fisherwomen but over the period women have access to cash and they are central to the coastal economy. Even then they are subjugated and abused, where economic participation itself brings shame and leads to their lower status. Gender power inequalities and historical construction of patriarchal families leads to violence at home and market. At home, husband use physical violence to exert a control and maintain his power while in market men verbally abuse and discriminates women to maintain their power in the market even though fisherwomen are more in number. Fish vending women are marginalised population with the coast and market.

The digitalisation of market, especially through e commerce sites and online sale of fish through social media platforms have impacted women fish vendors. The social media platforms and technologically advanced applications and facilities used by the newly sprouted online marketing competitors. The digitalisation, especially during COVID-19 brought changes in their daily life by the reduction in sale and profit, extra time for selling fish, loss of sale due to digital illiteracy, extra effort for economic participation, increased debts and so on. Even the Operating Payment System has become a requirement in the market, as majority of the customers prefer to pay in Google pay or PhonePe. The shift in

the nature market has been easily embraced by men vendors than women vendors as most of the men have started using online payment apps as well as shifted to other livelihoods.

Technology innovation in fish trade has brought lot of opportunities, which are been used by young men by starting small initiatives to sell fish through social media platforms. These opportunities could be utilised by women too but they require specific support in terms of being part of the digital market. Majority of women are engaged in fish trade for more than 20years and their knowledge about market and customers could be utilised much better than the new online sellers. The cooperatives in the fisheries sector and government programs for fisherwomen could be revamped to develop women inclusive digital markets for fish trade.

ANNEXURE

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