

EFFECTIVENESS OF DIGITAL FINANCIAL SERVICES IN ENHANCING FISHERY LOAN ACCESSIBILITY IN WEST BENGAL

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ABSTRACT

The purpose of this study is to evaluate the effectiveness of digital financial services in enhancing fishery loan accessibility in West Bengal, India. A comprehensive literature review has been conducted to collect information from relevant books, journals, articles, reports, and government websites. However, this study has specifically focused on the “Matsyajeebi Credit Card (MJCC)” scheme, which is one of the current and active digital financial service systems applicable to fishery practices in West Bengal. This study has revealed that this digital banking or funding system in this state has helped to improve loan accessibility in the fishery industry. Many fishermen have benefited from such digital financial services, which further positively reflects the success and growth of the overall fishery sector.

INTRODUCTION

The economy of West Bengal significantly depends on the fishery industry, which also boosts exports, employment, and food security. According to a recent report, the east Indian state of West Bengal produced above 1.85 million metric tons of fish in 2023 (Statista, 2024). Due to this reason, West Bengal is considered one of the leading fish producing states of India. Although this industry has the potential for economic growth, obtaining sufficient funding is associated with a number of obstacles in this state of India (Riekhof, 2019). For instance, recent studies and reports have indicated that fishermen are frequently subject to restrictions by traditional banking systems because they lack official documentation, collateral, and credit history (Sumanth et al. 2020). These requirements disproportionately impact small-scale and marginalized fishers, as many of them lack the financial literacy and documentation needed to understand these intricate systems. As a result, a large proportion of fishermen turn to unofficial financing sources, which frequently result in a debt cycle and hefty interest rates. On the other hand, different digital financial or banking services based on online and mobile banking or digital lending platforms have become efficient funding systems in this state. These digital financial systems of West Bengal and all over India help to increase loan accessibility in response to these issues (Chakraborty et al. 2023). For example, “Matsyajeebi Credit Card (MJCC)” is one of the current digital financial service systems applicable to fishery

practices in West Bengal. MJCC is a type of digital credit delivery mechanism that aims to increase fish farmers' access to institutional short-term credit support for their working capital requirements (Government of West Bengal, 2023). Another purpose of this digital financial service system is to minimize the dependence of farmers on the informal banking sector for funding or credit. Its system also focuses on enhancing self-reliance, income and employment along with production in the Indian fishery sector.

Even then, there are still a number of issues that could prevent digital financial services like the MJCC from being implemented as well as possible, despite their potential advantages. The low digital literacy of fishermen is one of the most urgent problems. Research indicates that over 40% of rural families in West Bengal do not have access to digital financial instruments and mobile banking, mostly because of inadequate knowledge and awareness (The Indian Express, 2018). The basic goals of programs like the MJCC are undermined when fishermen are unable to access essential financial resources due to their incapacity to use these digital platforms efficiently.

By taking this aspect into consideration, the current study has aimed to evaluate the effectiveness of digital financial services, such as MJCC in enhancing fishery loan accessibility in West Bengal. Through an examination of current obstacles and prospects, this study aims to offer perspectives that can guide policy choices and improve financial accessibility for fishermen, ultimately promoting the sustainable growth of the fishing

industry. Apart from that, this research can give practical insights that can drive policy decisions aimed at increasing financial inclusion along with sustainable development in the fishing industry by examining the opportunities and difficulties presented by digital finance in this context. Ultimately, strengthening economic resilience and raising standards of living in this vital sector will require an understanding of how digital financial services fit into the unique demands of fishermen. This report aims to further the ongoing discussion about financial inclusion as well as financial empowerment in West Bengal's fisheries sector by providing a thorough analysis and focused recommendations.

2. Method

2.1 Databases

A total of three electronic databases have been used in this study such as Google Scholar, Science Direct and MDPI. A huge number of journals and research articles have been searched from these electronic databases for further incorporation in this review. Additionally, Google has been used as the most important search engine in terms of searching for relevant news reports, industry reports, government reports, legal websites and so on.

2.2 Search sentences

- “Digital Financial Services” OR “Matsyajeebi Credit Card” AND “Fishery Loan Accessibility” AND “West Bengal”
- “Matsyajeebi Credit Card” AND “Fishery” AND “Benefits”
- “Matsyajeebi Credit Card” OR “Digital banking” AND “Fishery” AND “Challenges”

2.3 Data Analysis

A comprehensive literature review is conducted in this study to get a detailed overview of the fishery loan system in India, particularly in West Bengal. In this context, a range of relevant literature has been collected from the above-mentioned databases and then, the chosen research articles have been reviewed.

3. Literature Review

3.1 Loan accessibility for fishermen in India

Access to loans for Indian fishermen is still a major problem that affects both the industry's viability and the fishermen's ability to make a living (Nazir et al. 2018). Even with the government's efforts to improve financial inclusion, such as the Pradhan Mantri Matsya Sampada Yojana, many fishermen still encounter considerable obstacles when trying to get loans. Strict collateral requirements, a lack of financial knowledge, and insufficient documentation are some of these difficulties, which disproportionately impact marginalized and small-scale fishermen. Moreover, the customary dependence on unofficial loan channels frequently results in exploitative behaviors whereby fishermen accrue debts with excessive interest rates, thereby sustaining a cycle of poverty. Another active loan system available for the fishery industry in West Bengal is the “Samudra Sathi Scheme” (International Collective in Support of Fishworkers, 2024). In the current year, 2024, the “Government of West Bengal” has introduced this scheme as a part of its welfare initiative to provide financial assistance to fishermen during the annual fishing ban (International Collective in Support of Fishworkers, 2024). Under this finance Scheme, each eligible fisherman can receive ₹5,000 per month for two months, totalling ₹10,000 (Government of West Bengal, 2024). However, it has been noted that his financial support is crucial during the fishing ban period, ensuring that fishermen and their families can maintain their livelihood without financial hardship.

The issue is further made worse by traditional financial institutions' incapacity to comprehend the particular dynamics of the fishing sector (Riekhof, 2019). Because fishing revenue stability can be affected by environmental conditions and shifting fish prices, many banks are reluctant to lend to fishermen. The availability of credit that is in line with fishing operations' cash flow patterns is restricted by the absence of customised financial products. Promoting creative financial solutions that especially address the requirements of fishermen, like cooperative arrangements and microfinance, is crucial to closing this gap (Kadfak, 2010). Enhancing financial awareness and streamlining the loan application procedure might also enable fishermen to make more informed choices.

3.2 Role of Digital Financial Services in Enhancing Fishery in India

According to Bhattacharya et al. (2023), the enhancement of the Indian fishing industry through digital financial services has attracted significant interest, with multiple studies emphasising the advantages and obstacles associated with it. DFS supporters contend that by greatly enhancing fishermen's access to financing, they will be able to make investments in more advanced gear and environmentally friendly methods. To make loan access easier, for example, the Matsyajeebi Credit Card scheme was developed, especially for small-scale fishers who have historically relied on informal lending. On the other hand, poor levels of computer literacy among fishermen frequently compromise the efficacy of these digital solutions. Studies reveal that a significant proportion of rural fishermen are not proficient in using digital platforms and mobile banking, which restricts their use of these financial services.

Conversely, although such digital financial systems can also improve financial inclusion, they could unintentionally make the inequality already present worse (Datta & Sahu, 2023). As per the key findings of Chakraborty et al. (2023), the fishing community experiences unequal gains since marginalised groups, especially women and small-scale operators, frequently encounter additional obstacles when trying to access digital financial services. Another major obstacle is the lack of suitable internet infrastructure in rural areas; even the best-designed digital services may not be able to reach the people for whom they are intended. Therefore, even if digital financial services have the potential to revolutionise the Indian fishing industry, their success depends on how well the complex issues of digital literacy, socioeconomic inequality, and inadequate infrastructure are handled.

3.3 Benefits of MJCC for fishermen in West Bengal

The MJCC digital finance scheme is an intentional strategy to provide fish farmers with short-term institutional credit to meet their working capital needs. The goal of this program or scheme is to reduce the fishermen's dependency on unofficial lending sources, particularly within West Bengal. It also seeks to promote income opportunities, job development, self-sufficiency, and productivity growth. The goal of the Fishermen's Credit Card Scheme is to lessen their reliance on unofficial credit sources. The Matsya Jeebi Credit Card (MJCC) is intended to assist all employees who engage in the fishing industry, including small- and medium-sized fishermen. It also includes those engaged in auxiliary fishing activities, including processing dried fish, selling fish door-to-door, and making distinctive goods like fish or prawn pickles, fish papads, and ornamental objects made from fish scales. MJCC recipients have access to a cash credit that has a lower interest rate and is designed to lessen their financial burden. Although the credit limit may differ based on the particular plan, it usually does not exceed Rs 2.00 lakh. In this way, access to loans or credit opportunities has become easier for fishermen in this state.

However, as a part of the digital feature, “the Department of Fisheries” has developed a portal for inviting online applications for MJCC (Kadfak, 2020). This online portal also helps with online processing as well as monitoring of applications of all the farmers. Furthermore, it has been ensured by the West Bengal Government that all fish farmers, including marginal and small farmers, are eligible for the MJCC, which allows cash credit at a subsidised rate of interest to farmers. The card offers the option to modify payment schedules in the event of a poor harvest, and it also introduces a flexible payback plan that aligns with the post-harvest and sales period. Up to the designated credit amount, users are permitted an infinite number of withdrawals; repaying obligations starts after harvest and sales. Collateral is not required for loans up to Rs 1.6 lakh, and an interest rebate is offered to promote early loan repayment. Thus, this digital loan scheme offers a flexible repayment schedule after the harvest season and enables rescheduling of payments in case of a bad crop season. Any number of withdrawals can be made within the credit limit. Repayment- only after harvest and marketing.

3.4 Digital Loan schemes for fishermen in West Bengal

Millions of people in West Bengal depend on the fishing industry for their living, and it also makes a substantial contribution to

exports and food security. For many fishermen, nevertheless, financial resources continue to be a major obstacle, which restricts their capacity to make investments in sustainable techniques and enhance their standard of living. Numerous digital lending programs, such as the Kisan Credit Card (KCC), the Samudra Sathi Scheme, the MJCC, and other digital financing platforms, have been launched in response to these issues. The aforementioned programs seek to augment financial inclusion, mitigate reliance on informal financing, and confer economic empowerment upon fishermen.

MJCC: One well-known digital financial service designed especially for fishermen in West Bengal is the MJCC. Its main goal is to give fishermen access to short-term institutional financing so they can finance essentials like equipment purchases, boat repairs, and business maintenance during lean seasons. Up to ₹2 lakh in credit limits are available from the MJCC, and loans up to ₹1.6 lakh don't need collateral. Small-scale and marginal fishermen, who frequently lack the resources required to get loans through conventional banking channels, will find this feature especially helpful.

Kisan Credit Card (KCC): Although not specifically intended for fishermen, the KCC program is a major contributor to the funding of several agricultural pursuits, including fishing. Fishermen can successfully manage their operating costs by making use of the credit offered by the KCC, which offers flexible repayment choices at lower interest rates. The program's objective is to increase farmers' access to credit so they can use it to finance equipment purchases, input purchases, and other costs associated with running their businesses. However, it has been contended by Sumanth et al. (2020) that The KCC has an opportunity to benefit fisherman by offering financial services that are more matched with their specific cash flow needs. The KCC helps people who fish and engage in related activities have more stable finances overall by making loans more accessible.

Samudra Sathi Scheme: The Samudra Sathi Scheme is another noteworthy effort. Its purpose is to assist fishermen throughout the annual fishing ban, which is a time when fishing is prohibited, to allow for the restocking of marine resources. Through this plan, qualifying fishermen can get financial help of ₹5,000 per month for two months, ensuring that they can continue to support their livelihoods during this difficult time without facing financial hardship. Families are able to maintain their basic necessities and avoid debt traps, which are sometimes made worse by the fishing restriction, with timely cash support. However, it has been highlighted by Bhattacharya et al. (2023) that this Scheme is essential in making sure that fishermen are not disadvantaged financially when their main source of revenue is temporarily interrupted since it provides direct cash aid. This support is essential for the economic stability of coastal regions, which benefits individual fishermen as well as the larger community.

Digital Financing Platforms: Diverse digital finance platforms have surfaced to offer customized financial solutions for fishermen, complementing government plans. By utilizing technology, these fintech companies increase accessibility and convenience by providing loans and financial products using mobile applications. These kinds of platforms can be extremely helpful in providing fishermen with access to funding sources that were previously hard to get by through conventional banking systems. According to Chakraborty et al. (2023), In order to facilitate finance for fishermen, digital financing platforms frequently concentrate on streamlining the loan application procedure and lowering administrative barriers. Additionally, these platforms can provide tools for budgeting and financial education, which can help fishermen make better financial decisions and raise their level of financial literacy overall.

Self-Help Groups (SHGs): SHGs are another important factor in the financial empowerment of fishermen. SHGs frequently use digital platforms to offer group loans for their members, even if they are not officially a lending program (Sarkar & Malik, 2019). It further helps to empower members financially as a group. Through collective action and mutual assistance, SHGs can make credit more accessible to people who might otherwise find it difficult to obtain loans on their own. Fishermen who participate in such groups have the opportunity to have access to financial resources as well as exchange knowledge and experiences, which can help

them become more proficient money managers (Government of West Bengal, 2023). By encouraging a sense of resilience and camaraderie among fishermen, this community-driven strategy can enhance their financial security.

Therefore, by comparing and contrasting the key findings of the previous studies in relation to these digital financial services in West Bengal, it can be noted that this state's numerous digital loan programs and financial efforts seek to improve financial inclusion, lessen reliance on unofficial loans, and eventually improve the lives of fishermen (Sarkar & Malik, 2019). However, persisting difficulties, such as low digital literacy and limited infrastructure, need to be addressed to optimize their effectiveness. Ensuring that these funding options reach all fishermen, especially marginalized groups, would require investments in internet and technological connectivity, as well as targeted training initiatives to improve digital skills. West Bengal may empower its fishing communities and advance sustainable development in the industry by cultivating a more inclusive financial ecosystem.

3.5 Berries in adapting digital financial systems in the fishery sector of West Bengal

In this present time, loan accessibility is one of the major problems faced by the fishermen in West Bengal, India. A study by Sumanth et al. (2020) has indicated that low levels of digital literacy among fishermen are one of the major obstacles to the adoption of such digital loan systems in West Bengal. Research on rural finance highlights the lack of digital literacy, especially in rural Bengal, where more than 40% of rural families are unable to access mobile banking and other fintech services. According to Parappurathu et al. (2019), in order to enhance loan accessibility, different automated or digital financing systems have been introduced. On the contrary, changing the fish auctioning system by installing computerized or automated auction systems at the landing centres further requires pepper knowledge and literacy of fishermen related to such digital functions. Due to this reason, it is essential to install or initiate such digital financing systems under appropriate state supervision and closely observe unofficial lending operations.

Apart from digital literacy, insufficient internet infrastructure continues to be a major hindrance. The unreliability of internet connectivity in many West Bengali rural fishing areas makes it more difficult for them to use digital banking services (Datta & Sahu, 2023). Robust digital infrastructure is necessary for the fishing industry's technological integration, including automated bidding systems and online marketplaces, in order to guarantee fishermen's effective involvement. Moreover, the difficulties associated with the adoption of digital money are made worse by socioeconomic differences in fishing villages (Sarkar & Malik, 2019). Small-scale fishermen and other marginalized groups, such as women, frequently encounter additional obstacles when trying to obtain financial services, which results in unequal possibilities for economic progress. Inadequate implementation of digital financial services has the potential of exacerbating already-existing disparities and further marginalizing the most vulnerable fishermen.

On the other hand, it has been noted by Sarkar & Malik (2019) that the adoption of digital banking systems in West Bengal's fishing industry has drawn a lot of attention recently, with opportunities and difficulties being highlighted. Numerous studies highlight how digital platforms may improve financial inclusion for fishermen by making financing, insurance, and market data more easily accessible. For example, the combination of online markets and mobile wallets might increase small-scale fishermen's profit margins by streamlining transactions and lowering their reliance on middlemen (Chakraborty et al. 2023). However, obstacles, including low levels of digital literacy, shoddy internet infrastructure, and socioeconomic inequality, make it difficult for these solutions to be widely adopted.

It has also been indicated by Bhattacharya et al. (2023) that due to insufficient skills, many fishermen in this state face difficulties in accessing such digital schemes. Due to this reason, a study by Datta & Sahu (2023) has highlighted that targeted training programs are essential to equip fishers with the necessary digital skills, alongside investments in robust technological infrastructure. Additionally, the role of local government and

cooperatives in facilitating access to digital tools is emphasized, suggesting a collaborative approach for effective implementation. Critically, some scholars argue that while digital financial systems hold promise, there is a risk of exacerbating existing inequalities if not implemented thoughtfully, as marginalised communities may remain excluded from the benefits. Thus, the literature indicates that a nuanced understanding of local contexts, combined with participatory approaches, is essential for the successful integration of digital finance in West Bengal's fishery sector, ultimately aiming for sustainable development and empowerment of fishers.

Apart from that, as per this MJCC digital scheme for marine fisheries, only the fishermen having their own registered fishing vessels or boats are eligible to access loans (Government of West Bengal, 2023). It is another limitation of this digital financing system. On the contrary, under the newest loan scheme, "Samudra Sathi Scheme", the fishermen do not have to be the owners of registered fishing boats or vessels (Government of West Bengal, 2024). From this context, it has been understood that there are also some concerning limitations of the MJCC digital loan scheme for the fishermen in West Bengal.

CONCLUSION

In West Bengal, the fishing sector is an important driver of employment, exports, and food security for the state's economy. Despite this potential, there are still many obstacles that fishermen must overcome in order to obtain financial resources. These include a lack of documentation, security, and financial literacy. One option to improve loan accessibility is the development of digital financial services, such as the Matsyajeebi Credit Card (MJCC). In addition to trying to lessen the use of unofficial loans, MJCC offers customised financial solutions that are designed to meet the particular cash flow requirements of the fishing industry.

However, enduring problems, including low digital literacy, insufficient internet infrastructure, as well as socioeconomic inequities among fishermen, hinder the efficacy of MJCC and related digital activities. Even while the MJCC waives collateral restrictions and provides a flexible repayment schedule for smaller loans, its eligibility conditions limit access to owners of registered fishing vessels, which may exclude a large number of marginalised fishermen. On the other hand, the Samudra Sathi Scheme, which takes a different tack and offers assistance without requiring vessel ownership, emphasises the necessity of a more comprehensive financial plan. In order to empower fishermen and promote the widespread use of digital financial services, it will be essential to invest in technology infrastructure and implement focused training programs in the future. It will also be crucial to promote cooperation between local governments, associations, and financial institutions to guarantee that these programs are available to and advantageous for all parties involved in the fishing industry.

In the end, a key conclusion can be drawn that even though digital financial services such as MJCC have a lot of potential to improve financial inclusion in the fishing industry in West Bengal, attaining sustainable development and raising the standard of living for fishermen throughout the region will require a thorough understanding of local situations, collaborative strategies, and inclusive policies. Therefore, in order to enhance financial accessibility for fishermen in West Bengal, a number of important recommendations had to be taken into account. First, marginalised people may have much easier access to the Matsyajeebi Credit Card (MJCC) if fishermen without registered vessels were included in the eligibility criteria. Secondly, the execution of focused digital literacy initiatives catered to the requirements of fishermen will enable them to proficiently employ digital financial services. These training programs can be facilitated and continuous assistance can be given by working with community organisations and local cooperatives. To guarantee that all fishermen have access to online platforms, it is also essential to improve internet infrastructure throughout rural areas.

Furthermore, there is a lack of research particularly related to MJCC and its impacts, as it is a very new digital fishery financing scheme in West Bengal. As a result, only based on limited

information collected from relevant reports, this study has been conducted. It is one of the major limitations of this study. Due to this reason, more research needs to be conducted in the future to know both the positive and negative aspects of this digital loan system for the fishery in India. Further studies can be conducted in this similar field by focusing on assessing the enduring effects of digital financial services, such as the Matsyajeebi Credit Card, on the financial stability and lives of fishermen. It is imperative to conduct an investigation of the efficacy of training initiatives targeted at enhancing digital literacy among fishermen. Furthermore, research that compares various financial schemes, such as the Samudra Sathi Scheme and the MJCC, may also shed light on inclusive financial practices. In order to promote sustainable growth in the fishing industry, it will be beneficial to investigate technological advancements and how they might be incorporated into conventional fishing methods. Additionally, evaluating the role that cooperatives play in providing access to digital finance should also be considered. In this context, the fishermen in this state can be directly surveyed to gather important real-time information in terms of knowing the current consequences of digital loan systems for the fishery industry in West Bengal and many other states of India

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