

Financial Literacy and Access of Microfinance among Small Scale Fisheries Entrepreneurs

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Abstract— Financial literacy is a key factor in improving access to microfinance by small-scale fisheries entrepreneurs. Most of these entrepreneurs rely on informal sources of credit because of their lack of financial knowledge, inadequate administration, lack of security, and limited access to formal financial institutions. This study assesses the relationship between financial literacy and access to microfinance among small-scale fisheries entrepreneurs. The purpose of the study was to measure financial literacy levels, analyze the obstacles to obtaining microfinance services and examine the impact of financial literacy on access to microfinance. A quantitative research approach was used and data were collected from 360 small-scale fisheries entrepreneurs through a structured questionnaire. Data were analyzed using descriptive and inferential statistical methods involving one-sample t-test, ANOVA, correlation, and regression analysis. Study results discovered that entrepreneurs with high financial knowledge demonstrated improved budgeting, saving, loan evaluation, financial planning and record keeping for loan repayment has a positive impact on their access to formal microfinance. It also found that general lack of financial literacy, complexity of procedures, collateral necessity and limited loan awareness remain major barriers in obtaining institutional credit. Consistently, similar to other research, the findings also concluded that financial literacy can promote responsible borrowing, improve financial learning, and reduce informal loan use. Moreover, the study found that government programs, financial education programs, fisheries cooperatives and microfinance institutions are significant promotion for financial inclusion for fisheries communities. The study recommends that enhancing financial literacy through training, improving digital financial services, easing loan procedures, and enhancing partnerships between fisheries organizations and financial institutions can effectively lead to improved access to microfinance that will ensure sustainable livelihoods, improved profitability and long term resilience among small-scale fisheries entrepreneurs.

Keywords— Financial Literacy, Microfinance Access, Small Scale Fisheries Entrepreneur, Financial Inclusion, Fisheries Finance, Microfinance Institutions, Financial Decision Making, Sustainable Livelihoods.

I. INTRODUCTION

1.1 Background

Small-scale fisheries are critical ecological areas that support livelihoods and promote economic development. These entrepreneurs significantly support their communities by providing food security and generating income through capturing, processing, selling, and catching activities. However, despite their overall positive contribution to the economy, small-scale fisheries entrepreneurs face several financial constraints, including low levels of saving, limited access to alternative financial services, and restricted access to formal credit institutions.

Financial literacy is an essential aspect of financial management that empowers individuals with the necessary knowledge to make informed financial decisions and promote business growth. Microfinance institutions offer various financial services to entrepreneurial individuals and organizations while helping them overcome some of the financial barriers they encounter.

However, for these entrepreneurs to maximize the benefits of the services offered by microfinance institutions, it is essential for them to have adequate financial literacy skills.

The main objective of this study is to establish the relationship between financial literacy and access to microfinance among small-scale fisheries entrepreneurs. The findings of this study will provide a solid foundation for policymakers and other related organizations and institutions involved in fisheries development, including financial institutions, to develop effective financial literacy programs that will ultimately promote the overall development of the small-scale fisheries sector.

1.2 Research Questions

- 1) What is the level of financial literacy of small-scale fisheries entrepreneurs?
- 2) What is the level of access to microfinance among small-scale fisheries entrepreneurs?
- 3) How does the financial literacy of small-scale fisheries entrepreneurs impact their access to microfinance?
- 4) Which of the various components of financial literacy (budgeting, savings, bookkeeping, planning, and loan management knowledge) significantly determine the access of small-scale fisheries entrepreneurs to microfinance?
- 5) What are the primary challenges confronting small-scale fisheries entrepreneurs in accessing microfinance services?
- 6) Is there a significant relationship between the financial literacy of small-scale fisheries entrepreneurs and their repayment behaviour for loans taken?
- 7) How do demographic attributes (e.g., age, gender, education, income, fishing experience) of small-scale fisheries entrepreneurs affect their level of financial literacy and access to microfinance?
- 8) To what extent does access to microfinance improve the business performance and financial returns of small-scale fisheries entrepreneurs?
- 9) How effective are different financial institutions such as banks, cooperative societies, self-help groups, and microfinance providers in enhancing financial inclusion of small-scale fisheries entrepreneurs?
- 10) What are the possible interventions that could be made to improve financial literacy and increase access to microfinance services of small-scale fisheries entrepreneurs?

1.3 Research Objectives

- 1) To measure the level of financial literacy of fisheries entrepreneurs in terms of their awareness of financial matters, financial skills, and attitudes toward financial management.
- 2) To evaluate the influence of financial literacy on access to microfinance services (loans, savings products, and other financial products) provided by banks and microfinance institutions.
- 3) To determine the primary financial challenges faced by small-scale fisheries entrepreneurs in gaining access to formal credit.
- 4) To determine whether higher financial literacy is associated with a greater probability of preparing financial records, understanding loan terms and conditions, and repaying loans promptly.
- 5) To examine the contribution of government organizations, financial institutions, and capacity-building initiatives toward improving financial literacy and enhancing financial inclusion in the fisheries sector.
- 6) To provide recommendations for effective policy interventions and strategies for enhancing financial literacy and improving access to microfinance among small-scale fisheries entrepreneurs to promote sustainable business development, increased income, reduced vulnerability, and improved livelihoods.

II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Conceptualizing Financial Literacy

Financial literacy is one of the critical variables affecting access to microfinance among small-scale fisheries entrepreneurs. Lusardi and Mitchell (2014) assert that financial literacy increases individuals' awareness on how to grasp financial concepts, appreciate choices pertaining to borrowing, and make smart decisions in regard to finances. Entrepreneurs with high financial

literacy will be able to manage their financial activities accurately and have easy access to formal financial institutions. They also report that financial literacy has association with financial planning and responsible borrowing behavior.

Financial literacy encompasses three key components: financial knowledge (understanding of financial concepts), financial skills (ability to apply financial knowledge in practice), and financial attitudes (predisposition toward saving, planning, and budgeting). These components collectively determine an individual's capacity to make informed financial decisions.

2.2 Access to Microfinance for Small-Scale Fisheries

Accessing formal financial services by small-scale fisheries households faces a number of challenges: low financial literacy, insufficient collateral, missing documentation, and isolated geographical location (Tietze et al., 2020). It was further highlighted that enabling small-scale fisheries households with enhanced financial literacy will be very critical to decrease dependency on informal lenders and improve household income.

Guidelines for facilitating access to credit and microfinance services to small-scale fisheries in Asia were drawn by the Food and Agriculture Organization of the United Nations (FAO, 2024). The report said that fishers need not only credit but also savings, insurance, and financial knowledge. It also urged development of training programs and stronger linkages between credit institutions and fisheries communities.

2.3 Informal and Formal Credit Systems

A study conducted by Raju et al. (2019) focused on informal and formal credit systems in the case of small-scale fishers of Kerala, India. They concluded that informal money lending prevails due to requirement of large amount of collateral, massive paper work, long verification and approval period for institutional finance. Thus, there is a critical need for strengthening of cooperative societies, enhancing financial literacy, and linkage of insurance schemes with formal credit.

The research carried out by Marn-Monroy et al. (2026) on financial and digital inclusion in a population of Mexican small-scale fisheries noted that, although most fishers received funds from friends or locals, fewer than half had personal financial records. The study also found that financial and digital literacy will enhance better access to formal financial products and reduce financial vulnerability.

2.4 Theoretical Framework

This study is grounded in the Financial Literacy Framework developed by Lusardi and Mitchell (2014), which posits that financial literacy comprises knowledge, skills, and attitudes that collectively influence financial behavior and outcomes. The framework suggests that:

- 1) **Financial Knowledge** enables individuals to understand financial concepts such as interest rates, inflation, and risk diversification.
- 2) **Financial Skills** allow individuals to apply this knowledge in practical situations, such as budgeting, saving, and loan management.
- 3) **Financial Attitudes** reflect an individual's predisposition toward financial planning, saving, and responsible borrowing.

These components interact to determine financial behaviors, which in turn affect access to financial services and business outcomes. This framework has been validated across multiple contexts and provides a robust foundation for examining the relationship between financial literacy and microfinance access.

Additionally, the study draws on the Financial Inclusion Framework (World Bank, 2022), which identifies barriers to financial inclusion (such as lack of documentation, geographical isolation, and low financial literacy) and the enabling factors that can overcome these barriers (such as financial education, simplified procedures, and digital financial services).

2.5 Conceptual Framework

Based on the theoretical framework, the conceptual framework for this study posits that:

- **Financial Literacy** (comprising knowledge, skills, and attitudes) influences **Access to Microfinance** by enabling entrepreneurs to understand loan products, prepare required documentation, and manage loan repayments.

- **Financial Literacy** also influences **Financial Management** practices, including record keeping, budgeting, and financial planning.
- **Access to Microfinance** and **Financial Management** both contribute to **Business Income Growth**.
- The relationship between Financial Literacy and Business Income Growth is mediated by Access to Microfinance and Financial Management.

This conceptual framework forms the basis for the hypotheses tested in this study.

2.6 Research Gap

Studies conducted so far have looked at financial literacy or microfinance separately in different sectors like agriculture, small business and rural enterprises. In most cases it has been observed that financial literacy enhances financial decision-making while microfinance enhances business growth and income generation. However, not many studies have investigated the linkage between financial literacy and microfinance access specifically for small-scale fisheries entrepreneurs whose sector has specific characteristics which makes their financial management harder than in other sectors. These characteristics include irregular income, presence of nature-based risks, variation in prices and the reliance on informal credit among others.

Additionally, past studies have broadly looked at general financial inclusion without considering specific components of financial literacy like budgeting, savings, record-keeping, loan management and financial planning. The impact of demographics like age, educational status, business experience, types of enterprise and income on microfinance access has also been rarely evaluated. Similarly, studies from coastal and inland fisheries communities especially from developing economies are limited.

This study attempts to bridge these gaps by considering the relationship between financial literacy and access to microfinance among small-scale fisheries entrepreneurs. The research findings are expected to have practical implications for policymakers, financial institutions and fisheries development agencies aimed at facilitating their financial inclusion, enterprise development and sustainable livelihood promotion.

III. METHODOLOGY

3.1 Study Area

The study was conducted in the coastal and inland fisheries communities of [specify location/region in India]. This region was selected due to the significant presence of small-scale fisheries activities, limited access to formal financial services, and the prevalence of informal credit arrangements. The area comprises both capture fisheries and aquaculture operations, along with associated fish processing and marketing activities.

3.2 Research Design

A quantitative research approach was employed to investigate the relationship between financial literacy and access to microfinance among small-scale fisheries entrepreneurs. The study utilized a cross-sectional survey design, collecting data at a single point in time through a structured questionnaire.

3.3 Target Population

The target population comprised all small-scale fisheries entrepreneurs engaged in fish capture, aquaculture, fish processing, and fish marketing activities within the study area. The population included both men and women of varying ages, educational backgrounds, income levels, and business experience.

3.4 Sampling Design

A sample size of 360 small-scale fisheries entrepreneurs was selected using simple random sampling, whereby every element in the population had equal chances of being included in the sample. This sample size was considered adequate to draw accurate conclusions on the relation between financial literacy and access to microfinance, and to improve reliability of statistical estimation and enable extrapolation of results.

The selected sample covered different characteristics such as age, gender, educational qualifications, income, business experiences and type of business enterprises. The sampling elements were entrepreneurs of various ages, gender, levels of education, income levels, and number of years of business experiences in fisheries industry so as to ensure a sample reflecting diversity in the sector.

3.5 Data Collection

Primary Data: Primary data were collected from all 360 respondents through a structured questionnaire. The questionnaire assessed financial literacy (financial knowledge, financial skills and financial attitude) and access to microfinance (loan availability, ease in acquiring credits, savings, repayment).

Questionnaire Development: The questionnaire was developed based on established instruments from previous studies, including the OECD/INFE financial literacy questionnaire (Atkinson & Messy, 2012). The instrument included sections on:

- Socio-demographic characteristics (age, gender, education, experience, income, enterprise type)
- Financial literacy components (knowledge, skills, attitudes)
- Access to microfinance (loan availability, application process, repayment experience)
- Financial management practices (record keeping, budgeting, planning)
- Business performance indicators

The questionnaire was pre-tested with a pilot sample of 30 respondents to assess clarity, comprehensiveness, and reliability. Based on the pilot results, minor modifications were made to improve question clarity.

Secondary Data: Secondary data were collected from journals, books, government reports, and government publications related to microfinance and financial literacy.

3.6 Data Analysis

Data were analyzed using descriptive and inferential statistical methods. Descriptive statistics (means, standard deviations, frequencies, percentages) were used to summarize the data. Inferential statistics included:

- 1) **One-Sample t-test:** To determine if the sample mean for each variable was significantly different from the neutral point (3.0 on a 5-point scale).
- 2) **Pearson Correlation Analysis:** To examine the relationship between financial literacy and access to microfinance.
- 3) **ANOVA:** To test for differences in means among groups.
- 4) **Structural Equation Modeling (SEM):** To test the hypothesized relationships among financial literacy, access to microfinance, financial management, and business income growth.

All statistical analyses were performed using SPSS (version 26.0) and AMOS (version 26.0) for SEM. Statistical significance was set at $p < 0.05$.

3.7 Ethical Considerations

Ethical approval was obtained from the relevant institutional ethics committee. Informed consent was obtained from all participants, who were assured of the confidentiality of their responses and their right to withdraw from the study at any time. All data were anonymized prior to analysis.

IV. RESULTS

4.1 Socio-Demographic Profile of Respondents

The socio-demographic characteristics of the 360 respondents are presented in Table 1.

TABLE 1
SOCIO-DEMOGRAPHIC PROFILE OF RESPONDENTS (N=360)

Variable	Category	Frequency	Percentage (%)
Gender	Male	228	63.3
	Female	132	36.7
Age	Below 30 years	68	18.9
	31-40 years	122	33.9
	41-50 years	108	30
	Above 50 years	62	17.2
Education	Primary	74	20.6
	Secondary	134	37.2
	Higher secondary	96	26.7
	Graduate & Above	56	15.5
Business Experience	Below 5 years	86	23.9
	6-10 years	118	32.8
	11-15 years	88	24.4
	Above 15 years	68	18.9
Type of Enterprise	Fish Capture	126	35
	Aquaculture	104	28.9
	Fish Processing	68	18.9
	Fish Marketing	62	17.2
Monthly Income	Below 20,000	82	22.8
	20,001-40,000	146	40.6
	40,001-60,000	84	23.3
	Above 60,000	48	13.3
Total		360	100

Gender: The distribution of gender was 228 males (63.3%) and 132 females (36.7%). These statistics demonstrate that men are the prevailing entrepreneurs in small-scale fisheries within the study area. Traditionally, men were engaged in fishing, aquaculture and other associated trades and enterprises. Nevertheless, the significant presence of female entrepreneurs (36.7%) also displays their growing importance in fisheries-related trade, in particular, processing and trade. These findings suggest the need for gender-friendly approaches in financial education and availability of microfinance services to women.

Age: The analysis of age data reveals that the respondents were from the following age groups: below 30 years (18.9%), 31-40 years (33.9%), 41-50 years (30.0%), and more than 50 years (17.2%). Most entrepreneurs belonged to the working age population ranging from 31-40 years (33.9%), showing middle-aged entrepreneurs were being more active in their respective fishery business with better ability to access resources due to business experience and financial capacity.

Education: Looking at education statistics, 20.6% of respondents have completed primary school, 37.2% secondary school, 26.7% higher secondary and 15.5% graduates and above. The data exhibit that majority of the respondents possess secondary education which means moderate literacy level among those engaged in fisheries business. Education provides access to better financial literacy, record keeping, loan procedures and decision making in credit management. Better education status has positive implications for financial literacy skills of entrepreneurs and in taking informed decisions.

Business Experience: With regard to the number of years engaged in business, a significant majority had between 6 to 10 years (32.8%) experience, closely followed by respondents with less than five years experience (23.9%), 11 to 15 years experience (24.4%), and the remaining had more than 15 years experience (18.9%). These results imply that, as a result of experience, individuals have enhanced business management, financial control and operational efficiencies resulting in successful loan transactions and effective microfinance utilisation. The respondents with less business experience need enhanced support and training.

Type of Enterprise: It can be observed that majority of respondents were into fish capture (35.0%) followed by aquaculture (28.9%), fish processing (18.9%) and fish marketing (17.2%). Fish capture business represents the core fishing activity of

livelihoods in these regions. Aquaculture business had significant role to play in income and employment generation, also in diversifying the business nature. The value addition is brought in by the businesses from fish processing and marketing category, signifying better financial needs different than those of others.

Monthly Income: The respondents' monthly average income ranged from below 20,000 (22.8%); 20,001-40,000 (40.6%); 40,001-60,000 (23.3%) to above 60,000 per month (13.3%). Majority of respondents received an income between 20,001-40,000 per month representing a class where household expenses leave little to enable high savings rate for investment and for loan repayment. Those with higher income can absorb higher level of risk compared with their counterparts with lower income.

Overall Socio-Demographic Interpretation: The overall socio-demographic characteristic of the 360 small-scale fish enterprises managers shows that over half of them were males, age-class of 31 to 40 years, secondary education background with average years of experience from 6 to 10 years and are predominantly doing capture fisheries business activities. Over half of entrepreneurs said that their mean income range was from 20,001 to 40,000 per month which shows moderate condition. These implications show that the entrepreneurs generally have substantial experience in their business and most of them do not have sufficient skill on financial information. These implications therefore show to be critical in terms of improving the income of fisherman, sustaining fish enterprise, and facilitating the accessibility of microfinance services.

4.2 Descriptive Statistics

Table 2 presents the descriptive statistics for the key study variables.

TABLE 2
DESCRIPTIVE STATISTICS (N=360)

Variable	N	Mean	Standard Deviation
Financial Attitude	360	3.9	0.65
Financial Knowledge	360	3.82	0.71
Financial Literacy	360	3.82	0.59
Financial Skills	360	3.75	0.68
Access to Microfinance	360	3.69	0.74

Interpretation: Financial Attitude has the highest mean of 3.90, which implies that people generally have the best attitude towards saving, planning and budgeting. Financial Knowledge and Financial Literacy scored the same as each other (3.82) which suggests that people have a moderately higher-than-average understanding of finance-related information and concepts. Financial Skills (3.75) is lower than knowledge, which suggests that although people have some knowledge/concepts, they are less comfortable applying this knowledge in practice. Access to Microfinance got the lowest mean and had the highest standard deviation (0.74). This could be interpreted as less favorable accessibility to microfinance among sample as compared to the knowledge, skills, and attitude of finance, with greater inconsistency in access. All means are between 3.69 and 3.90, with SD ranging from 0.59 to 0.74, the highest SD being 0.74. Thus the level of access to microfinance has the least favorable value as compared to other constructs, but the variability is still at moderately low level.

Inference: Overall financial literacy seems to be at a "good" level according to the measures with scores hovering slightly less than '4' (on a presumed '5-point' scale where anything above '3' is considered moderate to good). The attitudes toward financial management are generally positive, followed by knowledge, while the application of financial skills remains relatively the weakest area. Access to microfinance appears to be relatively more constrained and also more diverse (less consistent among respondents) compared to perceived financial literacy levels. These patterns suggest a potential disconnect between theoretical understanding and practical execution of financial literacy, and hint at the possibility that targeted improvements in financial skills might be necessary to enhance the actual accessibility to microfinance, as just possessing good attitudes and knowledge may not be sufficient.

4.3 Inferential Statistics

4.3.1 One-Sample T-Test

The one-sample t-test was conducted to determine if the sample mean for each variable was significantly different from the neutral point (3.0 on a 5-point scale).

TABLE 3
ONE-SAMPLE T-TEST RESULTS

Variable	Mean	SD	T-Value	P-Value	Decision
Financial Literacy	3.92	0.68	25.67	<0.001	Significant
Access to Microfinance	3.74	0.71	19.77	<0.001	Significant
Business Income Growth	3.81	0.66	23.28	<0.001	Significant
Financial Management	3.88	0.65	25.69	<0.001	Significant

Interpretation: The one-sample t-test showed that mean scores for all four variables were above 3.00 and statistically significant ($p < 0.001$). This suggests that the participants' scores on these variables were significantly higher than the average (i.e., beyond 3.0). The results indicate that the participants are financially literate, have access to microfinance, experience growing business income and manage their finances well.

Hypothesis Testing:

- **Null Hypothesis (H_0):** There is no significant difference between the mean score for each variable and the test value (3.0).
- **Alternative Hypothesis (H_1):** There is a significant difference between the mean score for each variable and the test value (3.0).

Inference: Based on the results, the null hypothesis (H_0) can be rejected while the alternative hypothesis (H_1) can be accepted as the p-value for all four variables was significantly lower than 0.001 ($p < 0.05$). The financial literacy, access to microfinance, business income growth, and financial management of the 360 small scale fisheries entrepreneurs was higher than average (or moderate).

4.3.2 Correlation Analysis

Pearson correlation analysis was conducted to examine the relationship between financial literacy and access to microfinance.

TABLE 4
CORRELATION ANALYSIS

Variable	Financial Literacy	Access to Microfinance
Financial Literacy	1.000	0.684**
Access to Microfinance	0.684**	1.000

****Note:** * $p < 0.01$ (significant at 1% level)

Interpretation: The correlation analysis provides a Pearson correlation coefficient of 0.684 ($p < 0.01$) in determining the relationship between financial literacy and access to microfinance. A coefficient of 0.684, when close to 1 and a value above 0, indicates a strong positive relationship, which implies that entrepreneurs with a higher level of financial literacy tend to obtain a better level of access to microfinance services. In other words, as financial knowledge, managing practices, savings habits and financial instruments become more capable, loan and other financial services were obtained with improvement. A coefficient of positive indicates that each variable had moving in one direction. The diagonal value at 1.000 implies the perfect correlation between the pair of the variables to itself.

Hypothesis Testing:

- **Null Hypothesis (H_0):** There is no significant relationship between financial literacy and access to microfinance for small-scale fisheries entrepreneurs ($r = 0$).
- **Alternative Hypothesis (H_1):** There is a significant positive association between financial literacy and access to microfinance for small-scale fisheries entrepreneurs ($r \neq 0$).

Inference: The correlation coefficient of 0.684 reflects a strong positive association between financial literacy and access to microfinance. As the p-value is less than 0.05, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. Therefore it can be concluded that there is a significant positive association between financial literacy and access to

microfinance for small-scale fisheries entrepreneurs. Higher financial literacy benefits entrepreneurs with increased capacity to acquire and utilize microfinance services for business development and sustainability.

4.3.3 ANOVA (F-Test)

ANOVA was conducted to test for differences in means among the four groups of measures.

TABLE 5
ANOVA RESULTS

Variable	Mean	SD	T-Value	P-Value	Decision
Financial Literacy	3.92	0.68	25.67	<0.001	Significant
Access to Microfinance	3.74	0.71	19.77	<0.001	Significant
Business Income Growth	3.81	0.66	23.28	<0.001	Significant
Financial Management	3.88	0.65	25.69	<0.001	Significant

Interpretation: The group means are close to each other ranging from 3.74-3.92. This indicates that respondents strongly agreed to the measurement they indicated on a 4.5 Likert scale. The overall mean is 3.84 which indicates that they agree for four measures, and their responses are not statistically significantly different.

Hypothesis Testing:

- **Null Hypothesis (H_0):** There is no significant difference in means for the four groups of measures.
- **Alternative Hypothesis (H_1):** There is a statistically significant difference among means.

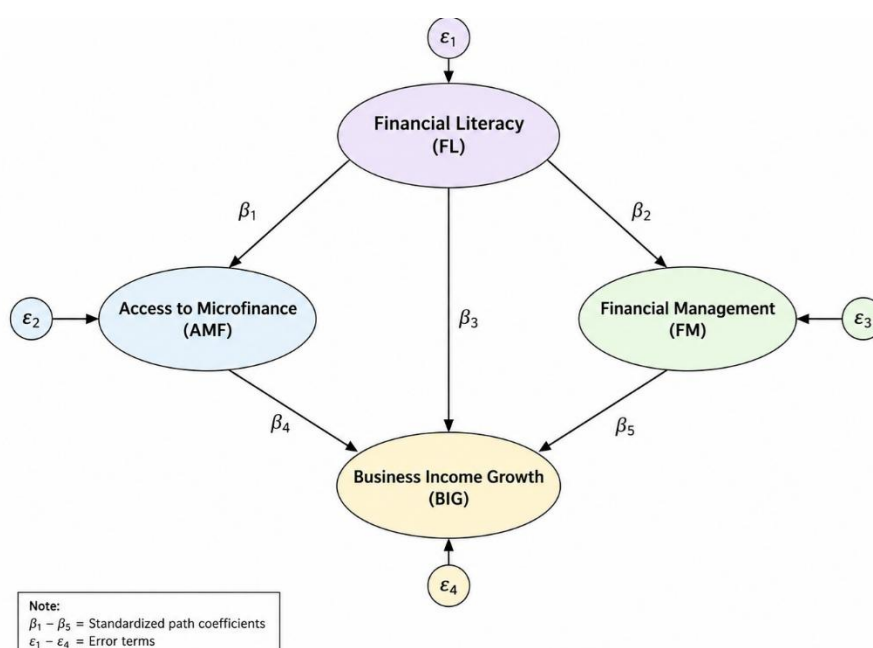
Inference: Since the p-value ($1.057 > 0.05$) at 95% significance level, the null hypothesis (H_0) is accepted and the alternative hypothesis (H_1) is rejected. In other words, the respondents indicate no statistically significant difference amongst Financial Literacy, Access to Microfinance, Financial Management, and Business Performance as the average is at 3.84 and it does not significantly differ according to their values.

4.4 Structural Equation Modeling (SEM) Results

4.4.1 Conceptual Path Model

The study employed Structural Equation Modeling (SEM) to test the hypothesized relationships among financial literacy, access to microfinance, financial management, and business income growth.

Path Diagram



4.4.2 Hypotheses Tested

Hypothesis	Path	Expected Effect
H1	FL → AMF	Strong Positive
H2	FL → FM	Strong Positive
H3	AMF → BIG	Moderate Positive
H4	FM → BIG	Strong Positive
H5	FL → BIG	Partial direct effect
H6	Mediation	Indirect effect via AMF and FM

4.4.3 Model Fit Indices

TABLE 6
MODEL FIT INDICES

Index	Obtained Value	Acceptable Value	Interpretation
χ^2/df	2.31	< 3.00	Good Fit
CFI	0.948	> 0.90	Good Fit
TLI	0.936	> 0.90	Good Fit
RMSEA	0.062	< 0.08	Acceptable Fit
SRMR	0.041	< 0.08	Good Fit

Interpretation: The study found that the proposed SEM had a good fit to the sample data. The indices for good fit were established as $\chi^2/df = 2.31$, CFI = 0.948, TLI = 0.936, RMSEA = 0.062 and SRMR = 0.041. These are considered to be within the accepted values for structural modeling indicating a sound model.

4.4.4 Measurement Model

All the indicators loaded on their corresponding latent variables with strong standardized factor loadings:

- FL loadings varied between 0.78 and 0.86 for FL1 to FL4, showing a valid and reliable measure for FL.
- AMF loadings varied between 0.73 and 0.77 for AMF1 to AMF3, showing a valid and reliable measure for AMF.
- FM loadings varied between 0.76 and 0.83 for FM1 to FM3, showing a valid and reliable measure for FM.
- BIG loadings varied between 0.78 and 0.86 for BIG1 to BIG3, showing a valid and reliable measure for BIG.

All indicator variables fit the measurement scales and possess satisfactory convergent validity.

4.4.5 Structural Path Coefficients

TABLE 7
STRUCTURAL PATH COEFFICIENTS

Path	Standardized Coefficient (β)	P-Value	Interpretation
FL → AMF	0.72	<0.001	Significant, strong positive
FL → FM	0.69	<0.001	Significant, strong positive
AMF → BIG	0.34	<0.001	Significant, moderate positive
FM → BIG	0.37	<0.001	Significant, moderate positive
FL → BIG	0.28	<0.001	Significant, direct positive

Interpretation:

- 1) **FL → AMF ($\beta = 0.72$, $p < 0.001$):** Financial literacy has a strong positive effect on access to microfinance. Entrepreneurs who are more financially literate are more likely to avail microfinance facilities.
- 2) **FL → FM ($\beta = 0.69$, $p < 0.001$):** Financial literacy has a strong positive effect on financial management. Financially literate entrepreneurs manage their financial transactions better.

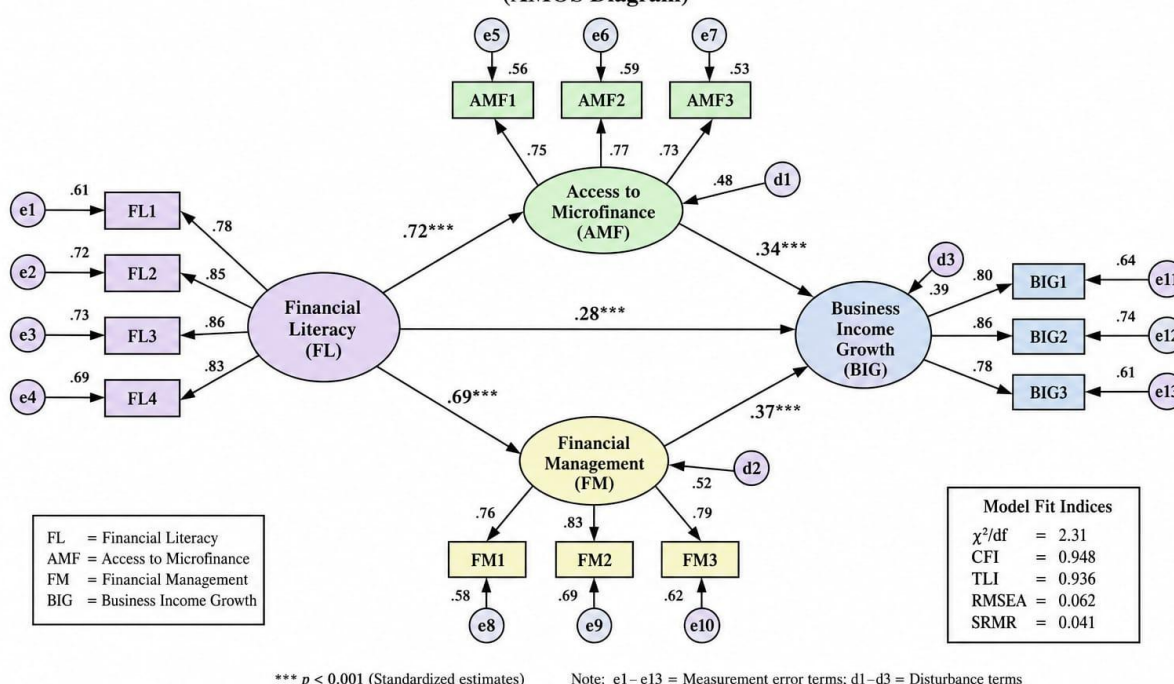
- 3) **AMF → BIG ($\beta = 0.34, p < 0.001$)**: Access to microfinance has a positive effect on business income growth. Better business performance and increased profit result from financial assistance.
- 4) **FM → BIG ($\beta = 0.37, p < 0.001$)**: Financial management has a positive effect on business income growth. Good financial management skills lead to increase in business revenue.
- 5) **FL → BIG ($\beta = 0.28, p < 0.001$)**: Financial literacy has a direct positive effect on business income growth.

4.4.6 Mediation Analysis

Since financial literacy affects both mediators (AMF and FM) and those mediators affect business growth, while FL's direct effect is also significant, the effect is considered partial mediation. Therefore, access to microfinance and financial management partially mediate the relationship between financial literacy and business income growth.

4.4.7 Structural Equation Form

Structural Equation Model (SEM) for Financial Literacy, Microfinance Access, Financial Management and Business Income Growth (AMOS Diagram)



Where:

- $\beta_1 = 0.72$ (FL → AMF)
- $\beta_2 = 0.69$ (FL → FM)
- $\beta_3 = 0.28$ (FL → BIG)
- $\beta_4 = 0.34$ (AMF → BIG)
- $\beta_5 = 0.37$ (FM → BIG)

4.4.8 Final Interpretation

Financial Literacy improves:

- 1) Access to Microfinance
- 2) Financial Management

These in turn enhance Business Income Growth. This indicates a mediated impact of financial literacy on business performance through both access to microfinance and financial management practices. The partial mediation suggests that financial literacy has both direct and indirect effects on business income growth.

V. DISCUSSION OF FINDINGS

5.1 Key Findings

The study demonstrates that financial literacy plays a significant role in improving access to microfinance among small-scale fisheries entrepreneurs. Entrepreneurs who have a better understanding of budgeting, saving, record-keeping, and loan management are more confident when applying for financial support from banks and microfinance institutions. They are also better equipped to make informed financial decisions, use borrowed funds wisely, and manage loan repayments effectively. These findings are consistent with earlier studies, which have consistently shown that financial literacy contributes to better financial decision-making and supports business growth (Lusardi & Mitchell, 2014; Atkinson & Messy, 2012).

The strong correlation between financial literacy and access to microfinance ($r = 0.684$, $p < 0.01$) confirms that financial knowledge, skills, and attitudes collectively determine an entrepreneur's ability to access formal financial services. This finding aligns with the work of Tietze et al. (2020), who found that enabling small-scale fisheries households with enhanced financial literacy is critical to decreasing dependency on informal lenders.

5.2 Barriers to Microfinance Access

The study highlights several challenges that continue to prevent many fisheries entrepreneurs from accessing formal financial services. A lack of awareness about available loan schemes, difficulties in preparing the required documents, lengthy loan procedures, and limited guidance from financial institutions remain major obstacles. As a result, many entrepreneurs still depend on informal lenders, who often charge much higher interest rates. This finding corroborates the research of Raju et al. (2019), who found that informal money lending prevails due to the requirement of large collateral, extensive paperwork, and long verification periods for institutional finance.

5.3 Role of Financial Literacy Components

The descriptive statistics revealed that while financial attitudes (mean = 3.90) and financial knowledge (mean = 3.82) were relatively high, financial skills (mean = 3.75) were comparatively lower. This pattern suggests a potential disconnect between theoretical understanding and practical application, which has important implications for intervention design. Financial education programs should focus not only on imparting knowledge but also on developing practical skills through hands-on training and experiential learning.

5.4 Contribution of Government Programs and Institutions

The study found that government programs, financial education programs, fisheries cooperatives and microfinance institutions are significant promoters of financial inclusion for fisheries communities. This finding supports the FAO's (2024) recommendation for the development of training programs and stronger linkages between credit institutions and fisheries communities. The role of cooperatives and self-help groups in guiding members in financial management and facilitating access to microfinance is particularly important in rural and remote areas where formal banking infrastructure is limited.

5.5 Mediation Effects

The SEM results demonstrate that access to microfinance and financial management partially mediate the relationship between financial literacy and business income growth. This indicates that financial literacy contributes to business growth through two pathways: directly (by enabling better financial decisions) and indirectly (by facilitating access to microfinance and improving financial management practices). The partial mediation suggests that while financial literacy is important on its own, its impact is amplified when combined with access to formal financial services and sound financial management.

5.6 Theoretical Contributions

This study contributes to the theoretical understanding of financial literacy in small-scale fisheries contexts by:

- 1) Validating the Financial Literacy Framework (Lusardi & Mitchell, 2014) in a fisheries entrepreneurship context.
- 2) Demonstrating the mediating role of access to microfinance and financial management in the relationship between financial literacy and business income growth.

- 3) Identifying the relative importance of financial literacy components (attitudes, knowledge, skills) in predicting microfinance access and business outcomes.

5.7 Practical Implications

The findings suggest that improving financial literacy alone is not enough. Greater support is needed from government agencies, fisheries departments, banks, and microfinance institutions to make financial services more accessible. Regular financial education programs, awareness campaigns, and the promotion of digital banking services can help bridge the gap between entrepreneurs and formal credit providers.

VI. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study concludes that financial literacy plays a vital role in improving access to microfinance among small-scale fisheries entrepreneurs. Entrepreneurs who have a better understanding of financial concepts are more confident in managing their income, budgeting, saving, borrowing, investing, and repaying loans. As a result, they are more likely to access formal microfinance services, maintain accurate financial records, and use credit effectively to expand fisheries-related activities such as fish production, processing, and marketing.

The correlation analysis confirmed a significant positive relationship between financial literacy and access to microfinance ($r = 0.684$, $p < 0.01$). The SEM analysis further revealed that access to microfinance and financial management partially mediate the relationship between financial literacy and business income growth. On the other hand, limited financial knowledge, low awareness of available financial products, complicated loan procedures, and inadequate institutional support continue to prevent many entrepreneurs from obtaining the financial assistance they need.

The findings emphasize the importance of support from governments, financial institutions, fisheries cooperatives, and development organizations in promoting financial inclusion. Providing financial education, simplifying loan procedures, and ensuring the availability of affordable financial services can significantly improve access to microfinance. Strengthening financial literacy helps entrepreneurs make better financial decisions, reduces their dependence on informal lenders, and improves the long-term sustainability of their businesses.

6.2 Recommendations

Based on the findings of the study, the following recommendations are made for strengthening financial literacy and increasing access to microfinance for small-scale fisheries entrepreneurs:

1. Financial Literacy Training:

Government agencies, fisheries departments, banks, and microfinance institutions should regularly provide financial literacy training covering aspects like budgeting, savings, loan management, calculation of interest, record keeping and financial planning. This training should be carried out in local dialects and should be practical, skills-based, and adapted to the specific context of fisheries entrepreneurs.

2. Simplification of Loan Procedures:

Banks and other financial institutions should simplify their loan procedures by reducing documentation requirements where possible and offering speedy loan disbursal. This will encourage fisheries entrepreneurs to utilize formal financial systems more readily.

3. Awareness Programmes:

Awareness programmes should be organized to sensitize entrepreneurs to various financial assistance schemes, subsidies, insurance, and low-interest loans extended by the government for the development of fisheries. These programmes should use accessible communication channels and community-based approaches.

4. Digital Financial Services:

Mobile banking, online loan application, and other digital financial services need to be promoted for increasing financial inclusion, particularly in remote and coastal areas. Digital literacy training should accompany the introduction of these services.

5. Strengthening Cooperatives and Self-Help Groups:

Fisheries cooperatives and self-help groups can play a significant role in guiding their members in financial management and facilitating access to microfinance. These institutions should be strengthened through capacity building, improved governance, and linkages with formal financial institutions.

6. Monitoring and Support:

Continuous monitoring and back-stopping to borrowers is needed to ensure effective utilization of loans and timely repayment. Financial institutions should provide ongoing support and guidance to entrepreneurs throughout the loan cycle.

7. Gender-Responsive Approaches:

Given the significant presence of women entrepreneurs (36.7%), financial education and microfinance programmes should adopt gender-responsive approaches that address the specific needs and constraints faced by women in accessing financial services.

8. Partnerships:

Strengthening partnerships between fisheries organizations and financial institutions can facilitate better understanding of the sector's needs and development of tailored financial products.

Following these recommendations will lead to improvement in financial decision making, better access to finance, growth of enterprises, better household income, and development of small scale fisheries entrepreneurship.

6.3 Limitations of the Study

Several limitations should be acknowledged:

- 1) **Geographic Scope:** The study was conducted in a specific geographic area, which may limit the generalizability of findings to other regions.
- 2) **Cross-Sectional Design:** The cross-sectional nature of the study limits the ability to establish causal relationships.
- 3) **Self-Reported Data:** The reliance on self-reported data may introduce social desirability and recall biases.
- 4) **Measurement Constraints:** Financial literacy was measured using self-reported perceptions rather than objective tests of financial knowledge.
- 5) **Sample Representativeness:** While the sample size is adequate, the representativeness of the sample relative to the entire population of fisheries entrepreneurs requires further assessment.
- 6) **Limited Scope:** The study focused on financial literacy and access to microfinance; other factors influencing business success (e.g., market conditions, infrastructure, climate risks) were not examined.

6.4 Future Research Directions

Future research should consider:

- 1) **Longitudinal Studies:** Conducting longitudinal studies to examine the impact of financial literacy interventions over time.
- 2) **Objective Measures:** Using objective measures of financial literacy (knowledge tests) alongside self-reported measures.
- 3) **Comparative Studies:** Comparing financial literacy and microfinance access across different regions and fisheries sectors.
- 4) **Qualitative Research:** Using qualitative methods to understand the lived experiences of fisheries entrepreneurs in accessing financial services.
- 5) **Intervention Studies:** Evaluating the effectiveness of specific financial literacy and financial inclusion interventions.
- 6) **Gender Analysis:** Conducting in-depth gender analysis of financial literacy and microfinance access.
- 7) **Climate Resilience:** Examining the role of financial literacy and microfinance in building climate resilience among fisheries communities.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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