Eduvest – Journal of Universal Studies
Volume 4 Number 10, October, 2024
p- ISSN 2775-3735- e-ISSN 2775-3727

FINANCIAL LITERACY AND INCLUSION OF FARMERS AND FISHERMEN: A CASE STUDY IN TAWIRI VILLAGE AND DUSUN SERI AMBON CITY ISLAND, MALUKU INDONESIA

Patricya F. V. Pattipeilohy[1], S. F. W. Thenu[2], I. T. Matitaputty[3], Wardis Girsang[4*]
[1,2,3,4] Universitas Pattimura Ambon, Indonesia
Email: pattipeilohytina@gmail, stevethenu@gmail.com, tonnymatitaputty@gmail.com, wardisgirsang641@gmail.com
Corresponding author: wardisgirsang641@gmail.com

ABSTRACT

Financial literacy and financial inclusion are needed to improve people's lives through Financial Services Institutions. The 2016 and 2019 National Surveys on Financial Literacy and Inclusion show that the financial literacy index of farmers and fishermen is the lowest compared to other types of work. Indonesia has considerable potential for agricultural land and marine fisheries, especially in Ambon City. This study aims to determine the effect of financial literacy on financial inclusion for farmers and fishermen. The research method is a survey of 65 households of farmers and fishermen—data analysis using SMART PLS4.0 software. The results showed that knowledge or literacy and attitudes affect skills, while skills affect access. Furthermore, access and trust affect inclusion. The implication is that improving skills and attitudes will improve access; access affects trust, which determines financial inclusion.

KEYWORDS *Financial literacy, Financial inclusion, Farmers, Fishermen*

INTRODUCTION

Financial literacy plays an important role in improving people's welfare (Fitri, 2021; Trisucti, 2023) through the expansion and ease of access to financial products and services, including credit facilities in rural areas, the capacity of individuals to decide on profitable investments, and offering more accessible modes of transactions (Benedict et al., 2024). The level of public literacy and inclusion in Indonesia is measured based on a periodic survey by OJK called the Survey on the Level of Financial Literacy and Inclusion in 2013, then updated in 2016, 2019, and 2022. The 2022 Survey on the Level of Financial Literacy and Inclusion in 34

How to cite: Patricya F. V. Pattipeilohy, et al. (2024). Financial Literacy And Inclusion Of Farmers And Fishermen: A Case Study In Tawiri Village And Dusun Seri Ambon City Island, Maluku Indonesia. Journal Eduvest. *4*(10): 9791-9808
E-ISSN: 2775-3727
Published by: https://greenpublisher.id/

provinces illustrates that the financial literacy index of the Indonesian people is 49.68%. This figure increased by about 12% compared to 2019, which was only 38.03%, almost the same as in Cyprus at 37.33% (Panayiotis et al., 2021) and Punjab, India at 47% (Aggarwal et al., 2014). The financial inclusion index reached 85.10% in 2022, an increase of about 9% compared to 2019 at 76.19%. The inclusion percentage is higher than financial literacy, and the gap between literacy and inclusion levels is decreasing, although still high, from 38% in 2019 to 35% in 2022.

The decrease in the gap between literacy and inclusion in 2019 and 2022 indicates that what is known about finance is followed by the ownership of financial products, including saving, investment, and or insurance. The problem is that the extensive literacy and inclusion gap of 35% indicates that financial service products are not yet based on an adequate literacy or understanding of financial products and services, especially for farmers and fishermen. According to the National Survey on Financial Literacy and Inclusion in 2016 and 2017 (Financial Services Authority, 2021), the literacy index of farmers and fishermen groups is the lowest compared to entrepreneurs/self-employed, employees and professionals, students, housewives, retirees, and people who are not working. Data shows that the literacy rate of farmers and fishermen in 2016 and 2017 was 0% and close to 21%, respectively, while employees and professionals had the highest literacy rates in the same years, 40% and 54%, respectively. In Indonesia, there are 28,419,398 households managing 36.8 million farms, including 7.5 million paddy fields and 11.4 million dry fields (Ministry of Agriculture, 2020; Central Bureau of Statistics, 2023). If one household has four people, the number of RTUPs is 113,677,592, or almost 41% of Indonesia's population. One of the causes of low literacy among farmers and fishermen is low formal education and income and the underdevelopment of modern information and technology (Wahyudin, 2005).

In Maluku province, the number of farmers and fishermen is 186,285 and 67,367 households, respectively (Ministry of Marine Affairs and Fisheries, 2021). If each household has four people, the number of farmers and fishermen in Maluku is 745,140 people and 269,468 people, respectively. This means that the number of farmers and fishermen is 56% of the 1.8 million people in Maluku. Specifically, Ambon City has 4856 and 3820 households of farmers and fishermen, respectively. If one household has four people, the number of household members of farmers and fishermen is 19,424 and 15,280 people, respectively (Ambon City Fisheries Service, 2023), or about 11% of the 340,000 population of Ambon City. On the one hand, Maluku's fisheries potential is quite large, which is around 3 million tons per year or 30% of the national fish potential. However, Maluku's fish production is only around 27,190 tons per year, eight times lower than fish production in Central Java province of 214,999 tons (BPS, 2023), so that the welfare of farmers and fishermen is the lowest. Farmers and fishermen are not yet prosperous because of low income. Low income is due to low production and productivity. Low productivity due to the use of conventional production technology. Conventional technology is due to weak financial capital, and weak financial capital is due to low financial literacy and inclusion. Literacy and inclusion, i.e., access to formal financial services, should improve farmers' and fishers' financial resilience and

welfare. In reality, fisher households are not yet prosperous because they still have constraints, namely low literacy and capacity, limited assets for collateral, geographical distance from financial institutions, and incomplete formal identity (Pomeroy et al., 2020).

Literacy, Inclusion, and Welfare

Circular Letter of the Financial Services Authority Number 30/SEOJK.07/2017, financial literacy is knowledge, skills, and beliefs that influence attitudes and behaviors to improve the quality of decision-making in financial management to improve welfare (OJK, 2021). The main objective of literacy is to improve the quality of individual financial decision-making and encourage changes in individual skills, behavior, and attitudes in better financial management. Micro, Small, and Medium Enterprises (MSMEs) producers, consumers, and the public are expected to be able to choose and utilize financial institutions, products, and services according to their needs and abilities to achieve prosperity. Ideally, people who have well-informed financial literacy will find it easier to reach the financial products and services industry (National Council for Inclusive Finance, 2020). They are more skillful in making decisions regarding the selection of financial services and products according to their needs and ability to improve welfare. A better literacy will result in better welfare (Made Agung et al., 2021). In fact, farmers and fishermen, classified as the most vulnerable and poor communities, still have the lowest literacy levels. Literacy is influenced by land size, education, investment, and income (Fiti, 2021; Hishamudin et al., 2024).

In contrast to literacy, financial inclusion, according to Circular Letter of the Financial Services Authority Number 31/SEOJK.07/2017 (OJK, 2021) is the availability of access to various financial institutions, products, and financial services per the needs and abilities to improve people's welfare. The first objective of financial inclusion is to increase public access to financial institutions, products, and services for financial services business actors (PUJK). Another goal is to improve the use and quality of utilization of financial products and services according to the needs and abilities of the community. So literacy and inclusion aim to improve welfare. Suppose someone has good financial literacy and inclusion. In that case, they should be able to make the right financial decisions when obtaining financing/credit to expand access and increase business capacity. Proper financial management will lead to profitable businesses, increased income, living standards, and welfare. Conversely, someone who is inclusive but not well literate has the potential to make wrong financial decisions. As a result, financing/credit provided by financial service institutions is not used to increase business capacity but to fulfill desires and consumptive activities, resulting in business losses and failure. Therefore, it is important to study the level of financial literacy and inclusion among farmers and fishermen, especially in the small island city of Ambon. The farmers studied are migrant farmers who cultivate horticultural vegetables, while the small-scale fishermen are indigenous people whose main occupation is fishing and whose side job is cultivating plantation crops. The research question is, what is the level of literacy and inclusion of farmers and fishermen, and what factors are associated with financial literacy and inclusion?

RESEARCH METHOD

This research used a survey method in Tawiri village and Seri hamlet between September and October 2024. Tawiri village is an agricultural village with closer and easier access to Ambon city, while Seri hamlet is a fishing hamlet located further away with more difficult access to Ambon city center. According to BPS (2022), the number of farmers in Tawiri Village is 139 from + 70 households divided into 11 Farmer Groups (POKTAN). BPS Kota Ambon notes that the total population of farmers in Tawiri village is 139 people, while the number of fishermen in Seri hamlet is 316 households (1209 people).

Due to the relatively homogeneous characteristics of the population, respondents were identified in the villages and hamlets based on their main livelihoods, and then purposive sampling selected 65 respondents. Maryati (2020) states that the minimum number of respondents is 30. One of the main requirements for selecting respondents intentionally is the researcher's familiarity with the research location and characteristics of the respondents, even if the researcher becomes a research instrument (Sugiyono, 2017; Sugiyono, 2018).

Furthermore, four enumerators who had experience conducting surveys were trained to understand and use the questionnaire as a tool for observing and interviewing respondents in the field. Each enumerator interviewed respondents at their place of business or home. Interviews were complemented by focus group discussions and direct observations of fishermen and farmers' businesses. The purpose of combining interviews, observations, and focus group discussions with several farmers and fishermen is so that researchers understand and can also see, dialogue, and feel what respondents say. Research data was collected from secondary sources, including government documents, libraries, and published journals.

The financial literacy variable in this study is measured by 2 indicators of Formal Financial Services Institutions, namely indicators of knowledge about formal financial services institutions and the banking sector and the non-bank financial industry. The non-bank financial industry has insurance, pension funds, financing institutions, and other financial service institutions. Reference to the division of the financial services sector based on Law Number 21 of 2024 concerning the Financial Services Authority (OJK), which contains the duties of the OJK to regulate and supervise financial services activities in the banking sector, the non-bank financial industry sector and the capital market sector. The capital market sector is not a variable in this study. In the 2025 National Survey of Financial Inclusion Literacy, there are 4 indicators of financial literacy (OJK, 2021), namely knowledge, skills, confidence in financial services institutions, and financial attitudes and behavior. Then, the financial inclusion research variable is 2 fields in formal Financial Services Institutions (LJK): banking and the non-bank financial industry (INKB). According to the World Bank (2020), financial literacy

indicators include knowledge, skills, and attitudes. Financial inclusion includes access, trust, and use or utilization of financial products and services in a quality and sustainable manner.

Literacy indicators are arranged in several forms, using questions and answers using a Likert scale. Knowledge variables, skills to use money, access to financial products and services, and inclusion variables are presented in Appendix 1, 2, 3, and 4. Researchers used a questionnaire tool to collect data through questions whose answers were designed using a Likert Scale as follows: (1) Strongly Disagree (STS), (2) Disagree (TS), (3) Undecided or Neutral (R), (4) Agree (S), and Strongly Agree (SS). The research model describing the relationship between constructs is presented in Figure 1.

Data analysis using path analysis using the SmartPLS4.0 software tool (Ghozali, 2021). In this case, there are two stages of analysis, namely, the analysis of the measurement model (outer model) and the inner model or structural model. In the measurement model, several conditions must be met, namely the loading factor of each variable or construct must be> 0.7, the reliability and validity values indicated by Cronbach's Alpha, and Composite reliability whose values are> 0.7 and the average variance extracted (AVE) value greater than 0.5 (Chin, 1998; Hair, 2017). Another requirement is the collinearity value (VIF) cross loading value> 0.8 and discriminant validity Heterotrait-monotrait ratio whose value is <0.9. If these requirements are met, then further analysis can be used, namely structural analysis (inner model), which tests the significance between constructs.

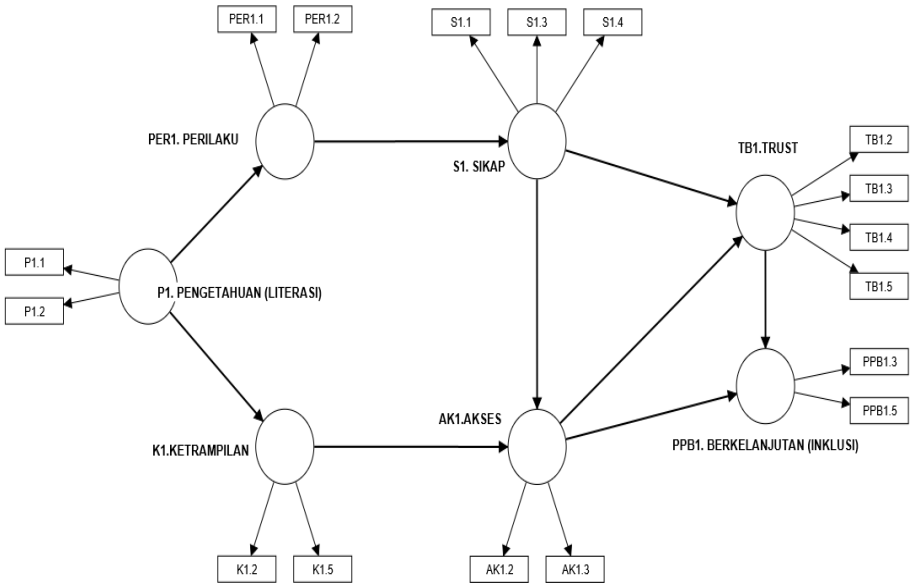

Figure 1. Research model on financial literacy and inclusion of farmers and fishermen

The main purpose of the model in PLS is to forecast the results (Cohen, 1988). The feasibility test of the model is to provide assurance that the assumptions

specified in forecasting the model can be met. SmartPLS4 is an effective software that helps check model feasibility more easily so that forecasting done through the model can be trusted (robust). In this study, forecasting is done on human behavior, which is actually challenging to do because human behavior is dynamic and can change at any time without knowing the exact cause. The level of financial literacy of farmers and fishermen is expected to determine skills and attitudes and then affect access and trust, which directly affect the utilization of quality products. Unlike physical goods that decrease in value as they are used more and more, trust will increase in value the more it is used (Girsang, 2013), thus triggering the inclusion of farmers and fishermen.

RESULT AND DISCUSSION

General description of location and household characteristics

Ambon City is located on Ambon Island, is the capital of Maluku Province, and has a population of 355365 people in 2023 with a population density of 1200 people/km^2. Based on Government Regulation No. 13/1979, Ambon City has an area of 377 km^2 or 40% of the total area of Ambon Island. As for Ambon Island, there are also parts of the Central Maluku Regency. The land area of Ambon City is 359.45 km^2, while the sea area is 17.55 km^2, with a coastline length of 98 km. Astronomically, the administrative area of Ambon City is located between 3º34'4.80“ to 3º47'38.40” south latitude and 128º1'33.60“ to 128º18'7.20” east longitude, surrounded by coastline, and located at Ambon Bay and Baguala Bay. Ambon City has a topography of undulating to steep hills with an area of $\pm$ 208 km^2 or 87% and plain areas with an area of $\pm$ 42 km^2 or 13% of the total land area. Geographically, Ambon City is surrounded by the sea and experiences 2 climates: tropical and rainy seasons. The influence of the sea surrounding Ambon City plays an important role in the seasonal climate, namely the west and east seasons. The west season is characterized by summer, and the east season by the rainy season. The season has a significant effect on fishermen's activities. Fishermen will stop fishing for approximately 4-5 months because it is included in the wave season.

Tawiri Village is located in the Teluk Ambon sub-district of Baguala - Ambon City, with an area of 5.68 km^2. The distance between the zero point of Ambon City and Tawiri Village is 19.3 km, which can be reached by road for $\pm$ 38 minutes. Based on data from BPS Ambon City in 2016, the population of Tawiri Village was 6,680 people, consisting of 3,236 men and 3,344 women. The second research location in Seri Hamlet is located in Nusaniwe Sub-district, Ambon City, and is located in the southern part of Ambon Island, with an area of 15.5 km^2, has a population of more than 6,154 people, consisting of 3,155 men and 2,999 women. The distance between the zero point of Ambon City and Dusun Seri is 20.7 km, which can be reached by road trip for $\pm$ 42 minutes. The average age of farmers and fishermen is 40 years old, the number of dependents is around 4, and none of the children are already working and earning money. This means that the main source of household income is the head of the family. The characteristics of the respondents can be seen in Table 1.

Table 1. Characteristics of respondents in Tawiri and Seri

Variable	*Obs Mean*	*Std. dev.*	*Min*	*Max*
Age	65 40.41538	12,274	16	70
Gender	65 1.276923	0,451	1	2
Work duration	65 14.01538	9,140	1	44
Number of children	65 2.169231	1,577	0	8
Kids work	65 .5846154	1,144	0	5
Education	65 2.015385	0,927	1	3
Ethnicity	65 2.153846	0,775	1	3
Number of dependents	65 4.276923	1,484	1	9
Area	65 .3307692	0,675	0	5
Income	65 4.338462	2,109	1	9
Expenditure	65 3.046154	1,956	1	9

The education of the head of the household is generally junior high school, so they can read and are open to new information and technology from outside. Farmers are generally of Makassar ethnicity and have horticultural vegetable businesses on rented land. Fishermen generally go to sea, but some also have farms with an average area of 0.3 hectares. The farming technology is *intangible indigenous knowledge*, namely *Dusung* agroforestry systems that integrate landscape and seascape (Girsang et al., 2023). During the wave season, they farm while maintaining fishing gear, while during the non-wave season, they go to sea to catch fish.

Farmers' and fishermen's incomes averaged Rp 4.3 million, and expenditures were around Rp3.05 million monthly. When compared by ethnicity, the income of horticultural farmers is larger and more stable than that of fishermen. For example, almost 50% of farmers are generally of Sulawesi ethnicity, and only 7% and 4% of Seri and Ambon ethnicities, respectively, have income levels above Rp3 million per month (Table 2). This indicates that the income of horticultural farmers is more stable than that of fishermen, even though each faces the risk of price fluctuations and crop failure. Farmers and fishermen already have financial literacy because they know the priorities of using money, namely consumption and education, followed by housing, especially the Ambon and Sulawesi ethnicities (Table 3).

Table 2: Characteristics of respondents in Tawiri and Seri

Pendapatan (Rp000)	*Ethnic*			
	Seri	Ambon	Makassar	Total
<500	0	1	0	1
999	4	5	2	11
1499	5	11	1	17
1999	2	5	2	9
2499	3	2	8	13
2999	0	0	4	4
3499	1	0	2	3
3999	0	1	0	1
>3999	0	0	6	6
Total	15	25	25	65

Table 3. Distribution of respondents according to Priority of household expenditure

Priority of expenses	*Ethnic*			
First Priority	Seri	Ambon	Makassar	Total
Consumption	7	23	21	51
Education	7	1	4	12
Health	1	0	0	1
Saving	0	1	0	1
Total	15	25	25	65
Second Priority				
None	0	1	0	1
Consumption	2	0	4	6
Education	7	6	2	15
Health	6	1	0	7
Housing	0	17	12	29
Clothing	0	0	7	7
Total	15	25	25	65

Measurement model

The measurement model aims to check whether the requirements for structural analysis are met. Based on the measurement model test results, several construct indicators had to be removed because their values did not meet the requirements, so the capital used was a construct whose loading factor was more than 0.7. The research model is generally feasible if it meets several mandatory requirements. These conditions are the value of outer loading, reliability and validity, discriminant validity, Fornell-Larker criterion, cross-loading, and collinearity. The analysis results show that outer loading helps see the relationship between constructs or variables and their indicators or the correlation between variables and their indicators or loading factors, each of which is expected to be> 0.7. Some indicators with a loading factor of less than 0.7 have been removed from the model so that the loading factor value is valid, followed by the coefficient value and R square value, namely the number inside the circle (Figure 2).

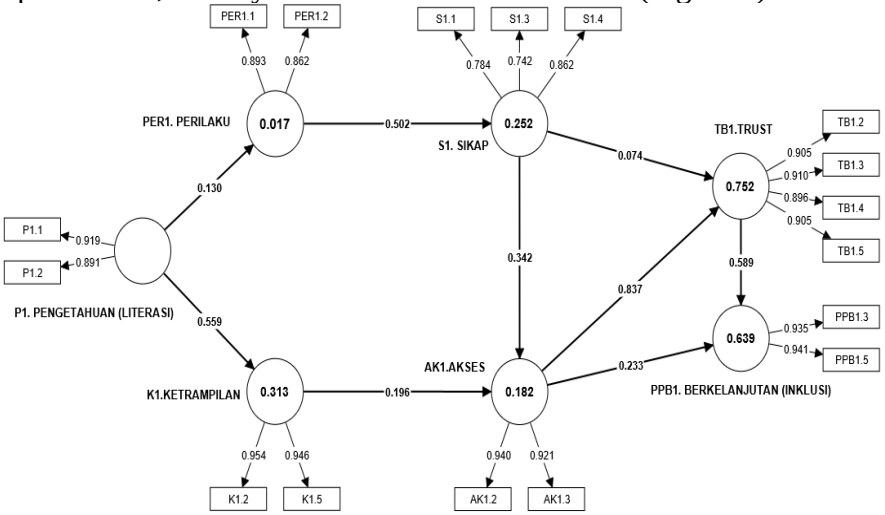

Figure 2. Outer model of financial literacy and inclusion of farmers and fishermen
Notes:

P=Knowledge; PER=Behavior; K1=Skills; S=Attitude; AK=Access; TB1=Trust in bank institutions; and PPB=Product utilization (inclusion);

Second, *reliability* and *validity* are measured by Cronbach's alpha and *composite* reliability values, which are expected to be >0.7, while composite reliability (rho_c) is expected to be >0.8. Another requirement in the model is the average variance extracted (AVE) value, which describes the variation between constructs where the required value is> 0.5. This means that the model is valid because more than 50% of the data variation in the construct can be explained by the model (Table 4).

Third, *discriminant* validity or Heterotrait-Monotrait ratio (HTMT) is useful for seeing the lowest and highest variations in data so as not to cause bias in forecasting results. The expected HTMT value is ≤ 0.9, but if there is a number greater than 0.9, it needs to be seen from other prerequisites, namely the Fornell_Larker criterion, which illustrates that the value of one construct must be higher than the value below it. Another prerequisite for discriminant validity is the construct cross-loading value greater than 0.7 (>0.7). Another requirement is the value of *collinearity*, namely the similarity of data found between constructs, so there is a similarity of meaning. The expected collinearity value to avoid overlapping data between constructs is below 5 (<5).

Table 4. Reliability and construct validity

Variabel/Konstruk	*Cronbach's alpha*	*Composite reliability (rho_a)*	*Composite reliability (rho_c)*	*Average variance extracted (AVE)*
Access	0.845	0.855	0.928	0.865
Skills	0.892	0.895	0.949	0.902
Knowledge/Literacy	0.781	0.792	0.901	0.820
Behaviour	0.703	0.710	0.870	0.770
Sustainable product utilization inclusion	0.863	0.865	0.936	0.880
Attitudes	0.719	0.746	0.839	0.636
Trust	0.925	0.926	0.947	0.817

Indicators of whether a model is valid or not can be seen from the fit model indicator, where the *Standardized Root Mean Square Residual* (SRMR) value is smaller than 0.08 or 0.1 and the *Normed Fit Index* (NFI) value will be better if it is close to one. The model can be said to be valid and fit even though the SRMR value is smaller than 0.1 or 0.082 and the NFI is close to one, namely 0.9 or one (Table 5).

Table 5. Fit Model of Financial Literacy and Inclusion of Farmers and Fishermen

Indikator	Saturated model	Estimated model
SRMR	0.082	0.090
d_ULS	1.030	1.247
d_G	1.087	1.122
Chi-square	389.450	381.337

Indikator	Saturated model	Estimated model
NFI	0.586	0.595

Structural Model

Suppose the measurement model describes how each construct relates to one another, followed by the value of each coefficient between constructs, and has met the requirements of a model (valid). In that case, the structural model is useful in seeing whether the path coefficient connecting between constructs is significant. If the alpha value is less than 0.05 (α <0.05) or 5%, the effect between one construct and another is declared meaningful or significant. If the value is greater than 0.05 (ά>0.05), the influence between one construct and another is declared insignificant. The path coefficient value and the significance of the effect between exogenous to endogenous constructs, for example, the value of knowledge, significantly affect skills with a coefficient of 0.559 and a value of α <0.05 (Figure 3 and Table 6).

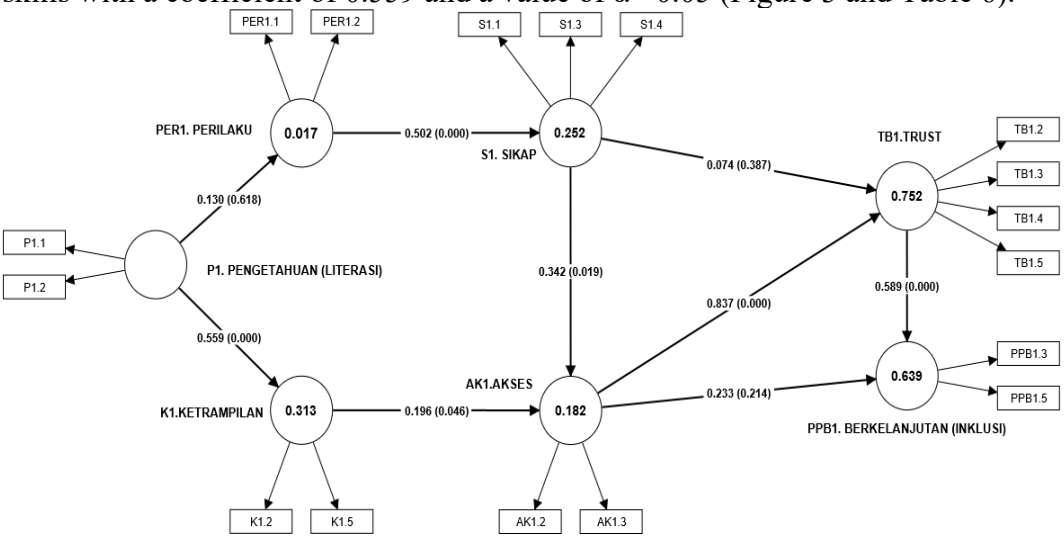

Figure 3: Structural model (inner model) of financial literacy and financial inclusion

Notes: P=Knowledge; PER=Behavior; K1=Skills; S=Attitude; AK=Access; TB1=Trust in financial institutions; and PPB=Utilization of financial products and services (Inclusion).

Table 6. Hypothesis, Mean, STDEV, T values, p values, path coefficients values, and confidence of interval

Hypothesis	*Mean, STDEV, T values, p values*					*Interval*	
	Original sample	Sample mean	Standard deviation	T statistics	p values	2.5 %	97.5 %
1. *Knowledge → Skill*	0.559	0.554	0.129	4.331	0.000	0.259	0.760
2. *Knowledge → Behaviour*	0.130	0.171	0.261	0.498	0.618	-0.324	0.631
3. *Behaviour → Attitude*	0.502	0.523	0.105	4.790	0.000	0.315	0.727

4. *Attitude → Access*	0.342	0.338	0.145	2.354	0.019	0.022	0.585
5. *Skill → Access*	0.196	0.202	0.099	1.992	0.046	0.008	0.395
6. *Access → Sustainable Inclusion*	0.233	0.248	0.188	1.242	0.214	-0.096	0.634
7. *Attitude → Trust*	0.074	0.084	0.085	0.865	0.387	-0.073	0.253
8. *Access → Trust*	0.837	0.832	0.060	13.846	0.000	0.696	0.930
9. *Trust → Sustainable Inclusion*	0.589	0.574	0.167	3.532	0.000	0.218	0.868

Figure 3 and Table 6 provide an understanding of the path analysis of nine hypotheses related to quality and sustainable financial literacy and inclusion. The hypotheses can be explained as follows.

1. Hypothesis 1

Financial knowledge (literacy) is very important to manage finances well while avoiding fraud and misuse. Financial knowledge or literacy significantly affects financial management skills where the value of $\alpha<0.05$ ($\alpha=0.00$) and $t>1.96$ ($t=4.331$). The coefficient value shows that a one-unit change in knowledge (literacy) will improve financial management skills by 0.559 units or 56% (between 0.259 and 0.760) with a coefficient of determination (R square) of 31.3%. This means that about 31% of the variation in the value of financial management skills can be explained or determined by the financial knowledge (literacy) variable; other variables explain the remaining 69%. Financial literacy affects financial management skills, namely the ability to understand basic economic and financial concepts and know how to apply them properly. Financial literacy will affect financial skills, namely the ability to understand the basic concepts of economics and finance and to know how to apply them appropriately. T Income and age affect financial education (Mmari et al., 2024), and education significantly affects financial literacy. Using digital platforms in education will even accelerate literacy and cost efficiency and expand the reach of bank customers. The adoption of digital platforms in financial education was found to be significantly determined by social influence (individuals, groups, and media) in making decisions, the demonstration of expected benefits, the effort or complexity of the technology, and the flexibility of interpretation that makes the technology accessible to understand (Hishamudin et al., 2024). Competence will be realized when knowledge and skills are used to improve performance. Panayiotis et al. (2021) found that literacy will increase Internet banking (i-banking), so it is very important to prioritize improving skills, behavior, and attitudes in financial management.

2. Hypothesis 2

Knowledge has an effect but is not significant on behavior. A one-unit change in knowledge will improve behavior by 0.13 or 13% with an R square value of 1.7%. This means that the literacy variable on behavior is very small because it

can only explain about 2% of the variation in the value of financial management behavior.

3. Hypothesis 3

Behavior has a significant effect on the attitude of farmers and fishermen in financial management. Improving behavior will improve attitudes by 0.502 or 50%, with a coefficient of determination of around 25%. Behavior is an action that is repeated to form awareness and habit patterns. The process of changing attitudes is not done by touching aspects of cognition or knowledge, but changes in behavior occur through repeated learning. Repeated habits will form *interest* and *attitude* patterns, namely changes in willingness to own and adopt good financial management. Changes in the attitude of farmers and fishermen in a planned, gradual, and sustainable manner can be intervened in by facilitators as *agents of learning* and not just *agents of technology transfer*.

4. Hypothesis 4 and 5

The attitudes and skills of farmers and fishermen significantly influence access to formal financial products and services. The contribution of attitude and skills to access is 34% and 20% respectively. The R square value shows that 18% of the variation in access value can be explained by the behavior patterns and skills of farmers and fishermen. This means that interventions to change attitudes and financial management skills are determinants of access to financial products and services.

5. Hypothesis 6

Access has an effect of 0.233 (23%) but is not real on inclusion. This means that providing access to financial products and services does not necessarily affect the acceptance and utilization of bank financial institution products in a quality and sustainable manner.

6. Hypothesis 7

Attitude has an effect but is not real on trust. The coefficient value of attitude is 0.074. This means that a one-unit change in the attitude variable will result in a change in the trust variable of around 7.4%, but this value is not meaningful.

7. Hypothesis 8

The access variable significantly affects trust ($\alpha = 0.00$) with a coefficient value of 0.837. This means that a one-unit change in access will improve farmers' and fishermen's trust in bank financial institutions by 84%. The R square value of 0.752 (classified as a high category) indicates that 75% of the variation in the value of trust can be explained by the access and attitude variables. Panayiotis et al. (2021) found that access affects behavior and trust in using internet banking. Access to financial products and services is an intervention door to improve farmers' and fishermen's trust in financial institutions. Trust is one of the components of social *capital* assets in addition to values, rules, and networking. Unlike physical capital assets, which decrease in value the more they are used. In contrast, the value of *trust* increases the more it is used, lowering costs and accelerating achievements. Thus, increasing access to financial products and services will increase farmers' and fishermen's trust in financial institutions.

8. Hypothesis 9

Trust has a real effect on the inclusion or the use of financial products and services in a quality, efficient, effective, and sustainable manner. The coefficient value of trust on inclusion is 0.589. This means that a one-unit improvement in the trust variable will result in a 59% change in inclusion. The R square value of 0.639 (moderate-high) indicates that about 64% of the variation in the value of inclusion can be explained by the trust and access variables, and other variables explain the remaining 36%. Adhitya and Suarmanayasa (2022) also found that literacy and trust affect quality financial inclusion. Furthermore, inclusion will strengthen the economic resilience of fisher households (Pomeroy et al., 2020). Attitudes and skills are prerequisites for building access. Attitudes and skills influence access, and skills are influenced by literacy. So, literacy does not directly affect inclusion, but literacy and inclusion together affect operational performance. According to Panayiotis et al. (2021), the level of financial literacy has a significant effect on the frequency of using Internet banking, while Eriana Astuty et al. (2024) found that the adoption of digital technology will determine the sustainability of profitable business performance, even Yuqing and Guangwen (2020) stated that literacy and inclusion will increase the financial assets of farmer households.

Effect of Literacy and Inclusion

The structural model shows that knowledge and inclusion are not directly related. Tonia et al. (2024) also found no direct relationship between literacy and inclusion, but both variables significantly affect operational performance, especially productivity, profit, and business competitiveness. Literacy is inseparable from skills, attitudes, and behaviors in financial management. Farmers and fishermen have been able to prioritize the allocation of the use of money, even knowing information on credit, savings, credit loans from banks, insurance, and loans from non-bank institutions, savings and loan cooperatives, and loan sharks. Farmers' literacy is generally more about risk diversification and inflation than money's interest and time value.

Unlike farmers, fishermen are also aware of bank financial institutions, savings, and credit loans. However, their skills, behaviors, and attitudes tend to keep money at home and not borrow credit from banks despite the low interest rates (6%-7% per year). Instead, they borrow loans from moneylenders in the name of savings and loan cooperatives with high interest rates (20% per month). This happens because financial knowledge is low or inadequate (Septiana, 2018), so they are forced to seek alternative sources of capital from illegal moneylenders with high interest rates (Tonia et al., 2024). Unlike formal financial institutions, moneylenders create a sense of trust with borrowers; the terms and administration are easy, and the need for money, especially to buy fuel for fishing, is always easy to provide. The fishermen's debts and interest will be paid from the fish catch. If the catch is sufficient, the debt can be repaid, but if the catch is insufficient, the debt will increase due to high interest and will be repaid from the following fish catch.

Because farmers' businesses, especially small-scale fishermen, have a high risk of yield failure, the impact of climate change, and price fluctuations, plus no collateral, formal financial institutions do not trust and are reluctant to provide credit loans. Therefore, the socialization of financial literacy is crucial for the

government because it will shape the skills to manage finances with the right decisions. Simultaneously, intervention programs and activities to change the behavior of farmers and fishermen are very important to build a positive attitude about financial management. A good and positive attitude followed by financial management skills will significantly affect access to finance. Financial literacy technology, then, needs to be upgraded towards digitization for cost efficiency, increasing production and satisfaction of farmers and fishermen (Rahayu, 2021), and even encouraging the growth of Micro, Small, and Medium enterprises (Made et al., 2021), and the stability of national and regional financial systems (Awanti, 2017). Digital technology is *necessary* but in*sufficient, and it* is not possible to achieve quality financial inclusion without access and trust.

This research structure model has limitations, which only apply to banking Financial Services Institutions (FSIs) and does not apply to the Nonbank Financial Industry (IKNB). In IKNB, only farmers and fishermen access BPJS Kesehatan. At the same time, other types of insurance and financing cannot be understood and trusted and do not want to be accessed by farmers and fishermen. BPJS Kesehatan is an IKNB regulated and supervised by, and a public legal entity established to organize a health insurance program as referred to in Law Number 24 of 2011 concerning the Social Security Organizing Agency. BPJS insurance ensures that all Indonesian people obtain health care benefits and protection to meet basic health needs. BPJS Kesehatan is a *mandatory* health insurance program for the government and the community. In principle, farmers and fishermen believe in BPJS because it is easily accessible, cheap, and supported by financial literacy and inclusion aimed at the community's welfare.

CONCLUSION

According to previous studies, the financial literacy level of smallholder farmers and fishers is the lowest compared to other occupations. This study supports these findings but indicates that the literacy of smallholder farmers and fishermen still needs to be improved to realize quality and sustainable inclusion among farmers and fishermen. Field observations show that horticultural farmers and capture fishermen already have financial literacy, including skills, behaviors, and attitudes related to financial management. This makes sense because they generally have a high school education, are open to information through mobile phones and other digital media, and are already aware of financial institutions, products, and services, including saving, borrowing credit, and insurance, especially BPJS health. Farmers and fishermen also have the skills to prioritize expenditures for the needs of household members. The problem is that, unlike some ethnic Makassarese farmers who have taken credit from banks with low interest rates to support horticultural farming business capital, fishermen take credit from moneylenders and keep money at home. If they need business capital, they borrow from moneylenders in the name of cooperatives but with high interest rates. This happens because fishermen's access to moneylenders is very close and easy, while access to formal financial institutions is far more difficult due to geographical constraints. Fishermen

and lenders have a close relationship (patron-client), without complicated written rules and administration, can borrow at any time, and are repaid from fish catches with high risk and business uncertainty.

The structural model of the study shows that literacy with attitudes and skills is an imperative requirement for quality and sustainable inclusion but is insufficient without access and trust. Access to financial services institutions (FSIs), especially for the formal banking industry, greatly influences trust in the sustainable use of financial products/services. Suppose farmers and fishermen are literate and have sound financial management attitudes and skills. In that case, when given adequate access, they will believe and loyally use financial products/services on an ongoing basis from formal Financial Services Institutions (FSIs), which will automatically reduce dependence on loan sharks.

The solution to overcome access problems due to geographical constraints and long distances is digital financial literacy, which makes it more efficient and effective to utilize digital banking (Mmari et al., 2024). The problems of low literacy, limited awareness, and the reluctance of various financial institutions, including high transaction costs and poor infrastructure support, are some obstacles to quality financial inclusion (Mehta et al., 2024). Therefore, financial education for community groups needs to be carried out by the competent authority, related agencies, and financial services institutions (FSIs). Financial education is intended not only to improve the knowledge and skills of farmers and fishermen but also to restore/increase confidence in Financial Services Institutions (FSIs).

The agriculture and fisheries sectors in Ambon City require special attention from both the provincial government and the city government. The agricultural sector needs to encourage local ethnicities to be actively involved in the agricultural sector because, compared to ethnicities from South Sulawesi, local ethnicities tend to farm seasonally and not routinely. For the fisheries sector, assistance is needed from the local government and formal financial institutions to build financing schemes for farmers and especially capture fishermen.

The financing scheme for fishermen can be adopted in the Scheme/Financing for MSMEs carried out by the Central Maluku Cooperative and SME Office in collaboration with PT Maluku and North Maluku Regional Development Bank (BPDM). BPDM provides Creative Micro Business Credit (KUMK) for debtors with a maximum ceiling of Rp20,000,000 and an interest subsidy from the Central Maluku District Government budget. This scheme would be perfect if the Ambon City Government could carry it out through the Regional Financial Access Acceleration Team (TPAKD), which involves the City Government, related Authorities, and Formal Financial Services Institutions (FSIs) to formulate various programs to encourage access to financing to various levels of society. This research has limitations for banking Financial Services Institutions (FSIs), not including the Nonbank Financial Industry (IKNB). In addition, the research subjects are still limited to farming and fishing households in Ambon City.

REFERENCES

Adhitya P. G. B. dan Suarmanayasa I. N. 2022. Pengaruh Literasi Keuangan dan Modal Sosial Terhadap Inklusi Keuangan pada Buruh Angkut Barang di Pasar Banyuasar.Universitas Pendidikan Ganesha. Jurnal Manajemen Vol 8 No. 2 Bulan Agustus Tahun 2022.

Awanti, Erni. 2017. Analysis of the Financial Inclusion Effect on the Stability of the Financial System in South East's Developing Countries. Universitas Airlangga. Jurnal Ilmu Ekonomi Terapan Vol. 2 No. 2 (2017): 99-121

Badan Pusat Statistik. 2023. Produksi Perikanan Laut yang Dijual di Tempat Pelelangan Ikan Provinsi Jawa Tengah 2022. Badan Pusat Statistik Provinsi Jawa Tengah.

Badan Pusat Statistik. 2023. Hasil Pencacahan Lengkap Sensus Pertanian 2023-Tahap. I. Jakarta: Pelayanan Statistik Terpadu (PST).

BPS, 2022. Kota Ambon dalam Angka. BPS dan Bappeda Kota Ambon. Ambon, Maluku.

Benedict, O., Imhanrenialena, Wilson, Ebhotemhen, Ugwu, Cyril Ndubuisi, Benjamin Ibe, and Chukwu, 2024. Investing in Rural Agriculture in the Face of Innovative Financial Services: Does Financial Literacy Matter in Nigeria? SAGE Open April-June 2024: 1–14, https://doi.org/10.1177/21582440241244685

Chin, W.W., 1998. The partial least squares approach to structural equation modelling. Mod. Methods Bus. Res. 2: 295–336.

Cohen, J., 1988. Statistical power analysis for the behavioural sciences. Lawrence Erlbaum Associates, Hillside, NJ.

Dewan Nasional Keuangan Inklusif (2020). Inklusi Keuangan Indonesia 2020 (Revisit 2017).

Eriana A., Ivan Diryana Sudirman & Rudy Aryanto (2024). Sustainable resilience strategy: unleash the micro-businesses's potential in the digitalization and sustainability era, Cogent Business & Management, 11:1, 2313672, DOI:10.1080/23311975.2024.2313672

Fitri, Arianti B. 2021. Literasi Keuangan (Teori dan Implementasinya). Banyumas: CV. Pena Persada

Girsang, W., Matsuda M., Sota Y., 2023. Dusung Agroforestry Systems on Ambon Island, Central Maluku, Indonesia: Sustainable Livelihoods, Land Property Rights, and Poverty Reduction, Journal of Marine and Island Cultures, v12n3, DOI: 3 10.21463/jmic.2023.12.3.12 , ISSN 2212-6821, Makpo University, South Korea

1 Girsang, W., 2013. Non-economic dimensions of poverty: A case of small islands in Maluku province Indonesia, *in* M. Handry Imansyah,M.H., Budy P. Resosudarmo, Suryani, Syahrituah Siregar, D.S. Priyarsono, Arief A. Yusuf (eds), Regional Development, Natural Resources and Public Goods in

Indonesia during the Global Financial Crisis, IRSA Book Series on Regional Development No.1, University of Indonesia Press (UI-Press), ISBN 978-979-456-531-5, https://irsa.or.id/2013/05/01/regional-development-natural-resources-and-public-goods-in-indonesia-during-the-global-financial-crisis/

Ghozali, I., 2023. Partial Least Squares: onsep, Teknik dan aplikasi menggunakan program SmartPLS3.2.9 untuk penelitian empiris. Badan Penerbit Universitas Diponegoro. Semarang

Hair, J.F., Hult, G.T.M., Ringle, C.M., 2017. A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage, Thousand Oaks, CA.

Hishamudin, M. Z., Kamarudin, N. S., Abdul Hadi, N., & Ahmad, A. (2024). Intention to Use Digital Platforms for Islamic Financial Education in Malaysia: Structural Equation Model. *Journal of Advanced Research in Applied Sciences and Engineering Technology*, *49*(1), 298–311. https://doi.org/10.37934/araset.49.1.298311

Kementerian Pertanian, 2020. Statistik Lahan Pertanian Tahun 2015-2019. Pusat Data dan Sistem Informasi Pertanian, Sekertariat Jenderal Kementerian Pertanian. Jakarta.

Made A. M. I Gusti Ayu, Pratiwi A. 2021. Literasi Keuangan dalam Hubungan dengan Keberlangsungan UMKM dan Kesejahteraan Masyarakat di Kabupaten Gianyar. Universitas Udayana Bali. Jurnal Prodi Akuntansi Volume 7 No 1 Mei 2021.

Mehta, N., Arora, S. and Gulia, D. (2024), "Framework for Financial Inclusion Barriers in the Agriculture Sector in India", Misra, R.K., Purankar, S.A., Goel, D., Kapoor, S. and Sharma, R.B. (Ed.) *Resilient Businesses for Sustainability* (*Advanced Series in Management, Vol. 34A*), Emerald Publishing Limited, Leeds, pp. 9-24. https://doi.org/10.1108/S1877-63612024000034A002

Mmari, Peter, Renee Horne, Erasmus Kofi Appiah, and Jenika Gobind. 2024. "The Role of Digital Financial Literacy for Inclusive Banking in Tanzania." *The International Journal of Organizational Diversity* 24 (2): 17-40. doi:10.18848/2328-6261/CGP/v24i02/17-40.

Navdeep Aggarwal, Mohit Gupta, Simrandeep Singh, 2014. Financial Literacy among Farmers: Empirical Evidence from Punjab, Pacific Business Review International, Volume 6, Issue 7, January 2014, http://www.pbr.co.in/2014/2014_month/jan/4.pdf

Otoritas Jasa Keuangan (2021) Strategi Nasional Literasi Keuangan Indonesia (SNLKI) 2021-2025.

Panayiotis C. Andreou, Sofia Anyfantaki, 2021. Financial literacy and its influence on internet banking behavior, European Management Journal,Volume 39, Issue 5, 2021, Pages 658-674

Pomeroy, R., Carlos Arango, Cristopher G. Lomboy, Steve Box, 2020. Financial inclusion to build economic resilience in small-scale fisheries, Marine

Policy Volume 118, August 2020, 103982, https://doi.org/10.1016/j.marpol.2020.103982

Rahayu, Sri. 2021. Pengaruh Edukasi Penggunaan Alat Pendeteksi Ikan Portable untuk Meningkatkan Kepuasan Nelayan dalam produksi Ikan di Kelurahan Bagan Deli Kecamatan Medan Belawan. Jurnal Manajemen Vol. 13 No 1 Juni 2021.

Septiana, Shinta. 2018. Sistem Sosial-Budaya Pantai: Mata Pencaharian Nelayan dan Pengolahan Ikan di Kelurahan Panggung Kecamatan Tegal Timur Kota Tegal. Sabda Volume 13 No 1 Juni 2018.

Statistik Kementerian Kelautan dan Perikanan (KKP), 2021. Produksi Perikanan. Diakses dari https://statistik.kkp.go.id

Sugiyono. 2017. Metode Penelitian Kuantitatif Kualitatif dan R&D. Bandung: Alfabeta.

Sugiyono. 2018. Metode Penelitian Kuantitatif. Bandung: Alfabeta

Tonia, N., Bestadrian Prawiro Theng and Calen, 2024. Investigating the effect of financial literacy and financial inclusion on operational and sustainable supply chain performance of SMEs, Uncertain Supply Chain Management 12 (2024) 573–582, DOI:10.5267/j.uscm.2023.8.014

Trisucti, Icha. 2023. Pengatuh Literasi Keuangan terhadap Kesejahteraan Keuangan melalui Pengelolaan Keuangan Keluarga pada Usaha Mikro Kabupaten Batang Hari. Jurnal Manajemen Terapan dan Keuangan Vol. 12 No.01

Wahyudin. 2005. Petani dan Keterbelakangannya.Bandung: Citra Aditya Bhakti

World Bank, 2010. Financial Literacy Survey, Report on the Key Findings of the Survey Prepared for the World Bank, Alpha research, Sofia-Bulgaria.

Yuqing, Zhou, He Guangwen, 2020. The Effect of Digital Inclusive Finance Development on Farmers' Household Financial Assets Allocation, *Modern Economic Science*Volume 42, Issue 3, Pages 92 - 10515 May 2020,