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Quantitative Research Article

## The Mediating Role of Financial Behavior on Financial Literacy/Inclusion, and Financial Well-being among SMEs Owners in Indonesian Marine and Fisheries Industry

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### Abstract

**Background/ problem:** Rapid advancement of digital technology and financial innovation has created new opportunities for small and medium-sized enterprises (SMEs). However, limited financial literacy and the digital divide continue to hinder the financial well-being of business actors, especially in archipelagic regions on Indonesia.

**Objective/ purpose:** This study examined the inter-relations between financial literacy, digital financial inclusion, financial behavior, and financial well-being of maritime SME owners in Eastern Indonesia according to the theories of social learning and planned behavior.

**Design and Methodology:** A survey of  $n = 303$  SME owners was conducted using a quantitative approach. All constructs demonstrated acceptable reliability ( $\alpha > .70$ ). Data were analyzed using partial least squares structural equation modelling.

**Results:** Financial literacy significantly influenced financial behavior ( $\beta = .28, p < .001$ ) and financial well-being ( $\beta = .49, p < .001$ ). Digital financial inclusion also significantly affected financial behavior ( $\beta = .26, p < .001$ ) and financial well-being ( $\beta = .16, p = .01$ ). Financial behavior predicted financial well-being ( $\beta = .13, p = .009$ ) and mediated the effects of financial literacy ( $\beta = .04, p = .04$ ) and digital financial inclusion ( $\beta = .03, p = .03$ ).

**Conclusion and Implications:** The findings confirm that financial literacy and digital financial inclusion promote SME owners' financial well-being through behavioral change. From a behavioral science perspective, interventions must expand literacy and digital tools while shaping attitudes, intentions, and habits. Policies integrating literacy, digital access, and community learning can foster resilience and financial well-being in coastal and island contexts.

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Financial well-being is a key indicator reflecting the quality of life within a society (García-Mata & Zerón-Félix, 2022). This condition encompasses not only financial aspects such as income and the ability to meet basic needs but also economic stability, which serves as a crucial prerequisite for achieving overall well-being. According to the World Bank (2024), approximately 8.50% of the global population still lives below the extreme poverty line, earning less than USD 2.15 per day. Although poverty in Indonesia has decreased, regional disparities remain significant, with financial literacy only 65.43% compared to financial inclusion at 75.02% (Indonesia Financial Services Authority [OJK], 2024). In this context, the small and medium-sized enterprises (SMEs) sector is vital for inclusive economic development. Fisheries and marine SMEs differ from other small enterprises as they confront specific challenges, including the unpredictability of aquatic resources, fluctuating seafood market prices, and limited digital infrastructure in coastal and island regions (Jainuddin et al., 2024).

A study conducted from the perspective of financial well-being (FWB) for SMEs is most applicable in obtaining economic sustainability and resilience. It is noted that FWB is most advantageous from the perspective of personal and organizational outcomes for SMEs (Garg, 2024). Financial well-being refers to an individual's ability to fulfill financial responsibilities, manage risks, and achieve financial goals, thereby enhancing the quality of life and financial stability (Sabri et al., 2023). There is no financial well-being without the dominance of the two most important determinants: financial literacy and digital financial inclusion. Poor financial literacy deprives financial decision-making of its full potential, and poor digital financial inclusion hinders people's ability to access beneficial financial services. Financial literacy has been found to provide a positive impact on financial decision-making.

The interaction between financial literacy, digital financial inclusion, and financial well-being yields a contradiction: financial literacy can improve risk management while raising financial stress (Zhang & Chatterjee, 2023). Similarly, while digital financial inclusion expands access to finance, it may also encourage irresponsible debts (Bawalle et al., 2024). These contradictions underscore the importance of behavioral mediation as both a bridge and a critical mechanism of change between financial literacy, digital inclusion, and financial well-being. Although previous research has mostly focused on the direct effects of financial literacy and inclusion on financial well-being, considering financial behavior as the main mediator offers a mechanism-based explanation that makes clear how behavioral finance converts available resources and theoretical knowledge into sound business decisions, resolving the seeming conflicts between literacy/inclusion and financial stress or debt.

Utilizing SME owners as the unit of analysis, this study addresses the gap in research pertaining to blue entrepreneurship and financial well-being, two fields that have historically developed separately. Empirical evidence also supports the notion that SME financial empowerment can promote the achievement of the sustainable development goals (SDGs) given by the United Nations (n.d.), especially the SDG 14 (life below water) and SDG 8 (decent work and economic growth) by examining how maritime community relations, skills competencies, and digital infrastructure contribute to sustainable and inclusive economic growth for maritime communities. The findings are consistent with Indonesia's national blue economy policies under the Ministry of Marine Affairs and Fisheries, which emphasize digital financial inclusion and coastal community empowerment, and align with regional fisheries association priorities on sustainable livelihoods and resilience of small-scale enterprises.

This study is grounded in the theory of planned behavior (TPB; Ajzen, 1991) and the social learning theory (SLT; Bandura, 1969), which explain the financial behavior of SME owners by connecting individual decision-making to community-based learning and knowledge sharing. By combining these theories, this study provides a comprehensive framework that reflects the interaction between personal dispositions and social environments, providing deeper insights into how financial literacy and digital inclusion influence financial well-being through behavioral mechanisms. Positioning financial behavior as a mediator opens new opportunities for behavioral finance, particularly among marine SMEs in archipelagic regions. The findings could inform financial policies and services aimed at promoting sustainable and inclusive economic empowerment in regions with higher poverty rates.

## Literature Review

This study investigates how financial literacy and digital financial inclusion shape financial well-being, with financial behavior serving as a mediating factor. Using the theory of planned behavior (TPB) and social learning theory (SLT), the research develops and tests hypotheses linking financial literacy, digital financial inclusion, financial behavior, and financial well-being.

### Theory of Planned Behavior

The theory of planned behavior explains that individual behavior is influenced by intentions based on attitudes, subjective norms, and perceived behavioral control. For SME owners, these components play a crucial role in decision-making and resource management (particularly in financial matter). A positive attitude toward financial literacy and investment leads to wiser choices (Bongomin et al., 2024). Other subjective norms, such as social environmental pressures, also influence financial behavior. Business actors

tend to adjust their financial practices to be accepted or considered normal among their networks (Bani-Khalid et al., 2022). Perceptions of control influence financial decisions. Lack of access to financial products and services, as well as a lack of financial literacy in the community, reduces the perception of control. In contrast, financial literacy and better access to products and services increase this perception, empowering SME owners to operate within a solid financial literacy framework and improve their financial well-being.

### **Social Learning Theory**

According to the social learning theory, formulated by Bandura (1969), learning is considered as a cognitive and socially mediated process, dependent on observation and interaction with the environment. Financial literacy is also defined as the ability to make good choices about spending money a choice that can be developed through social learning, observing and adopting healthy financial behaviors (Tuffour et al., 2020). People tend to be more willing to use innovations, such as digital financial services, when observing that their peers have obtained favorable outcomes through their utilization of said technologies. Empirical research has demonstrated that individuals are more likely to adopt certain tools if they receive reinforcement from friends, relatives, or colleagues. (Murendo et al., 2017). Financial education serves as a foundation, providing individuals with the opportunity to develop practical financial planning skills within a social environment. Empirical evidence has shown that observing and practicing positive financial behaviors significantly improve financial well-being in adulthood (Pak et al., 2023). Social learning theory can be used to provide the proper context for improving financial behavior and well-being through social learning. Through the introduction of financial literacy and the development of responsible financial practices, entrepreneurs gain the ability to engage in disciplined financial behaviors that can lead to sustainable financial well-being.

### **Financial Literacy and Financial Behavior**

Financial literacy is the body of knowledge that forms the foundation for informed financial decision-making, investment, and effective financial management. Societies with high financial literacy levels tend to exhibit judicious financial behavior, as they are experienced in overcoming financial constraints and making informed financial choices (Zaimović et al., 2025). On the other hand, the cultural variables have a significant impact on financial behavior (Wijaya, 2024).

Studies consistently have showed that individuals with higher financial literacy tend to exhibit more favorable financial habits, such as prudent debt management, adequate retirement savings, and effective spending management (Fong, 2025). Financial literacy also enhances self-efficacy in financial decision-making. Existing literature has also provided evidence that enhanced financial literacy is associated with increased self-efficacy, which is a factor that enhances the quality of life in financial activities (Sajid, 2024). Thus, this research proposes:

H1: Financial literacy has a positive effect on the financial behavior of SME owners.

### **Financial Literacy and Financial Well-Being**

Financial literacy refers to the ability to comprehend and make informed decisions about personal finances in a timely and responsible manner (Klapper & Lusardi, 2019). Kar (2024) noted that there are various definitional positions on financial literacy, with some scholars emphasizing not only knowledge and skills but also the emotional and social factors that influence financial decision-making.

The use of financial literacy is significant in increasing financial well-being, defined as an individual's overall satisfaction with their financial situation. The article by Orozco-Orozco (2023) established a positive relationship between financial literacy and the outcome of financial health, indicating that associated financial awareness can positively influence the outcome. Lone and Bhat (2022) demonstrated the role of financial literacy in building financial self-efficacy, which increases confidence in financial decisions-making and, in turn, improves financial well-being. Similarly, Nazneen (2024) indicated that policy awareness as well as self-confidence are positively associated with financial literacy and contribute to improved financial outcomes. Kuutol (2024) also highlighted that the availability of

information on financial matters enhances financial literacy and well-being, especially in rural regions where the provision of financial literacy is limited.

In the case of SMEs, those with strong financial literacy are able to make informed decisions, engage in effective, and maintain a fruitful relationship with financial organizations, all of which contribute to improved financial well-being (Agyei et al., 2019). Based on this rationale, this study proposes the following hypothesis:

H2: Financial literacy has a positive effect on the financial well-being of SME owners.

### **Digital Financial Inclusion and Financial Behavior**

More recent research has therefore examined the effect of digital financial inclusion on financial behavior, recognizing that access to digital financial services such as online payments, savings, credit, and investment gateways redefines how individuals and small and medium-sized enterprises (SMEs) manage their finances. Digital financial inclusion is not merely about access to technology but also about how digital services reshape financial practices and decision-making. By lowering transaction costs, providing real-time financial information, and expanding access to credit and savings, digital platforms encourage SME owners to adopt structured behaviors such as disciplined saving, budgeting, and timely repayment (Angeles, 2022).

From a behavioral finance perspective, these platforms also act as enablers, reducing cognitive biases through features such as automatic reminders and transaction histories, thereby fostering accountability and minimizing impulsive spending. However, the extent of these positive effects depends on user literacy. Access may result in misuse or risky borrowing without sufficient financial and digital competence. In contrast, with proper literacy, SME owners gain confidence in using financial platforms and improve decision quality, leading to healthier financial behaviors, including prudent borrowing, consistent saving, and effective resource allocation (Huda et al., 2024)

H3: Digital financial inclusion has a positive effect on the financial behavior of SME owners.

### **Digital Financial Inclusion and Financial Well-Being**

Digital financial inclusion (DFI) facilitates the delivery of financial services through digital platforms, providing individuals and businesses with more efficient access to the financial system. DFI, such as digital payments, savings, credit, and insurance, aim to narrow down the access gap (especially in developing economies that have basic banking infrastructure (Du et al., 2022). Enhancing the financial engagement and general financial well-being is a critically important function of DFI. For instance, the unrestricted supply of digital financial services was found to boost both the activity of banks and the overall life satisfaction of Chinese households (Du et al., 2022). According to a study in Malaysia, the use of digital financial services among low-income families effectively moderated the effects of financial stress on subjective financial well-being (Mahdzan et al., 2022).

Evidence also highlights the gendered dimensions of DFI, with women often experiencing greater economic benefits compared to men (Tan et al., 2024). Beyond individuals, DFI supports the long-term survival and growth of businesses and plays an important role in improving SME welfare and driving economic development in areas lacking access to traditional financial services (Zhang et al., 2023). Accordingly, the fourth hypothesis is formulated as follows:

H4: Digital financial inclusion has a positive effect on the financial well-being of SME owners.

### **Financial Behavior and Financial Well-Being**

Responsible financial behaviors such as effective money management are positively associated with financial well-being, happiness, and overall financial quality. In contrast, financial stress and poor financial habits have been shown to reduce financial well-being. Emotional factors, financial knowledge, and age further contribute to variations in financial well-being, with financially informed behaviors supporting positive outcomes (Enete et al., 2022). Particularly in low-income households, sound financial

management of income and expenses is a critical predictor of financial well-being. Fan and Henager (2021) also emphasized that good planning and healthy financial habits are strongly correlated with higher financial satisfaction and well-being.

H5: Financial behavior has a positive effect on the financial well-being of SME owners.

### Financial Literacy, Financial Behavior, and Financial Well-Being

High financial literacy increases confidence in financial decision-making. Individuals with strong financial knowledge often feel capable of managing tasks such as budgeting or investing. However, this confidence may result in overconfidence and poor decisions when individuals overestimate their understanding. Both financial knowledge and consistent, responsible financial behaviors contribute to effective financial management and, ultimately, financial well-being. Financial well-being strengthens the correlation between knowledge and behavior. Nonetheless, poor financial habits can undermine outcomes even in the presence of high financial literacy. Abdi (2024) found that SME managers with strong financial knowledge still made inefficient investment decisions when lacking effective financial behaviors. Therefore, the implementation of financial literacy is contingent on behavior. This study proposes financial behavior as a mediating variable between financial literacy and financial well-being. Positive financial behaviors translate knowledge into effective decisions that improve financial well-being.

H6: Financial behavior mediates the relationship between financial literacy and financial well-being.

### Digital Financial Inclusion, Financial Behavior, and Financial Well-Being

Digital financial inclusion (DFI) expands access to financial services through technology, offering potential benefits for financial well-being. However, available access is not the only determinant of good decisions or money management. The successful use of digital services depends on financial behavior (Du et al., 2022). Moreover, the benefits of DFI often appear gradually. While DFI has been linked to improved well-being, its effects typically take time to manifest. Lei et al. (2023) observed that DFI's impact on subjective well-being is not immediate but through sustained use. In this study, financial behavior acts as a mediator between digital financial inclusion and financial well-being. In light of this, we propose that financial behavior serves as a mediating variable between digital financial inclusion and financial well-being.

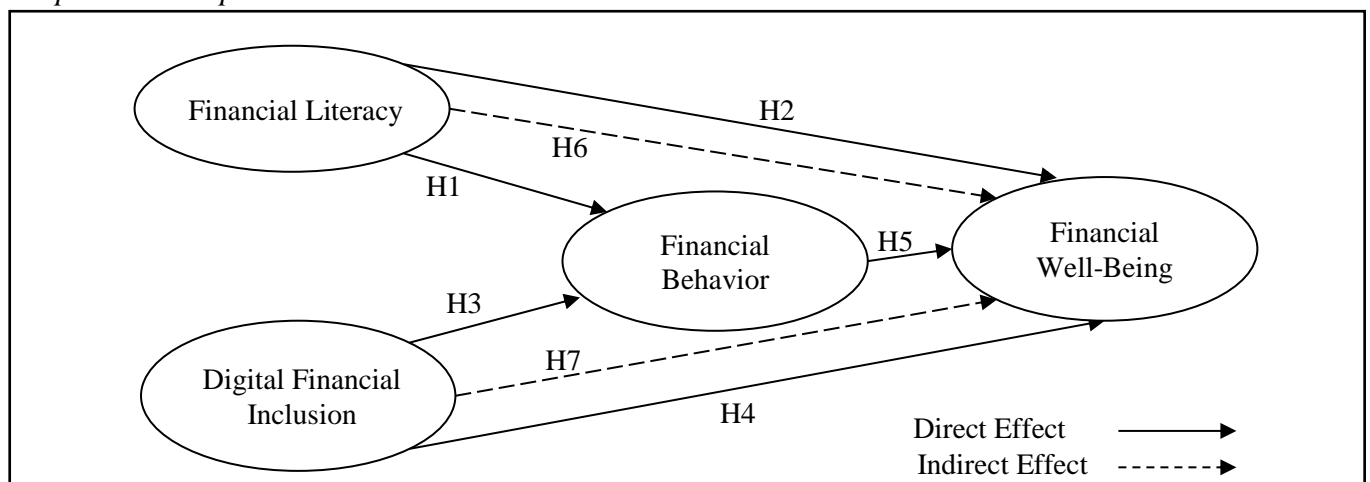
H7: Financial behavior mediates the relationship between digital financial inclusion and financial well-being.

### Conceptual Framework

The proposed research model is illustrated in Figure 1, based on the theoretical review and the hypotheses formulated in this study.

**Figure 1**

*Proposed Conceptual Framework*



## Method

### Research Design

This study adopted a causal research design with a quantitative approach, targeting SME owners as respondents and representing them as the unit of analysis. Partial least squares structural equation modeling (PLS-SEM) was employed to test the proposed relationships. This method was chosen because it is suitable for predictive and exploratory analysis, can accommodate medium sample sizes such as the 303 respondents in this study, and is robust to non-normal data distributions (Hair et al., 2022). The mediation effect was examined by testing the significance of indirect paths through financial behavior as the mediator. Indirect paths were assessed using a bootstrapping procedure with 5,000 resamples in SmartPLS.

### Sample

The study population was the small, and medium enterprises (SMEs) in the marine and fisheries activities within the Maluku Province in Indonesia. Despite having one of the highest percentages of poverty (15.78% in 2024), Maluku provides over 36% of Indonesia's total fisheries resources. Its economic advantages are still underutilized in spite of this potential. A non-probability sampling method was employed, specifically using the accidental sampling technique. Accidental sampling is a form of non-probability sampling in which participants are selected based on certain criteria such as ease of access, geographical proximity, availability at a given time, or willingness to participate, in alignment with the research objectives. We distributed the questionnaire both offline and online, using a Google link shared via private messages with SME actors relevant to the research context. A total of 320 SME owners were invited to participate, and 303 responses were received during the data collection period from August to October 2024, resulting in a response rate of 94.70%. Therefore, the final sample size of 303 respondents met the required threshold. The collected data were subsequently processed and analyzed for further examination.

### Instruments

Questionnaires were constructed with reference to Scopus-indexed research articles and were tailored for administration among SME proprietors in Eastern Indonesia within the frameworks the social learning theory (SLT) and the theory of planned behavior (TPB) frameworks. The wordings were revised to be clear, culturally appropriate, and construct-compatible with norms, self-efficacy, and social learning. The translation protocol was the standard procedure with forward translation from bilingual professionals, reconciliation of both versions, pilot administration with SME owners with reference to clarity, and back-translation protocol. The former ensured that the questionnaire was linguistically correct and contextually appropriate, akin to previous TJBS research that highlights cultural adaptation and linguistic equivalence (Lestari et al., 2025). A five-point Likert scale with response levels ranging from 1 (strongly disagree) to 5 (strongly agree) was used in measuring all the constructs.

Financial literacy was assessed using seven items from Tuffour et al. (2020), including financial knowledge (4 items) and financial attitude (3 items). These included items indicating the respondent's level of awareness of financial management, ability to read financial documents, and financial decision-making discipline. Example: "I can read basic financial documentation (cash flow documents or loss and profit documents).

Digital financial inclusion was measured using six items adapted from Jin and Liu (2024), which reflected two domains: access and ability to use digital financial services (3 items) and trust or attitudes toward digital services (3 items). These items captured SME owners' use of e-wallets, mobile banking, and other fintech platforms, as well as their perceptions of the security and efficiency of these tools. A sample item is, "I frequently rely on online financial services (e-wallet, mobile banking, and so on) as part of the business.

Financial behavior was measured using 13 items adapted from Raharja et al. (2022), covering three dimensions: debt management and borrowing behavior (5 items), retirement preparedness and saving

behavior (4 items), and consumption behavior (4 items). These items reflect SME owners' responsible use of debt, savings for future needs, and prudent consumption habits. The example statements include, "I always save a part of my income" and "Before making decisions regarding financial or investment matters, I carefully consider the associated risks."

Financial well-being was evaluated using eight items adapted from Agyei et al. (2019) items, which were distributed in four domains as follows: (1) current financial capability; (2) financial management and resilience; (3) financial confidence; and (4) prospective financial success. They measure the capability of meeting present responsibilities, resilience in responding to financial shocks, belief in the appropriateness of financial decisions, and prospective future financial success. A sample item is, "I can meet my business needs as well as my family responsibilities with what my business generates."

The reliability of all scales is reported in Table 2.

## Results

### Sample Characteristics

The respondents' profile presented in Table 1 demonstrates a diverse range in demographic characteristics. The majority of SME actors in the marine and fisheries sector that participated as respondents are women (56.44%), while men accounting for (43.56%) of the sample. The largest share of respondents is within the productive age range of 31–50 years (58.00%), highlighting the significant potential for digital technology adoption and the importance of enhancing financial literacy among this active business-owning demographic. The majority of respondents had completed secondary-level education senior high school (63.37%) and had been operating their businesses for more than five years (89%). This suggested that the participants possessed sufficient entrepreneurial experience, enabling them to provide informed insights regarding their financial behavior, the effectiveness of digital financial inclusion, and their financial well-being.

**Table 1**

*The Respondents' Profile (n=303)*

Measure	Description	Frequency	Percentage
Gender	Male	132	43.56
	Female	171	56.44
Age	=/<30	62	20.46
	31–40	87	28.71
	41–50	90	29.70
	=/>51	64	21.13
	Educational Background	Junior High school	2
	Senior High school	192	63.37
	Diploma	16	5.28
	Bachelor's Degree	90	29.70
	Master's	1	.33
	PhD	2	.66
Length of SME Experience	3–5 years	33	10.89
	6–10 years	122	40.27
	=/>11 years	148	48.84
Total		303	100.00

### Measurement Model Assessment

All research variables have a Cronbach's alpha and composite reliability value of more than .7. Thus, it can be concluded that all indicator constructs have met the required reliability. In addition, all latent variables have an AVE value of more than .5 as shown in Table 2. Thus, the model has met convergent validity (Hair et al., 2022).

**Table 2**  
*Validity and Reliability*

Latent Variables	Cronbach’s Alpha	Composite Reliability	AVE
Financial literacy	.84	.88	.52
Digital financial inclusion	.90	.92	.66
Financial behavior	.91	.93	.51
Financial well-being	.88	.91	.55

**Table 3**  
*The Heterotrait-Monotrait Ratio (HTMT) and Fornell-Larcker Criterion*

	Digital Financial Inclusion		Financial Literacy		Financial Behavior		Financial Well-being	
	HTMT	Fornell-Larcker	HTMT	Fornell-Larcker	HTMT	Fornell-Larcker	HTMT	Fornell-Larcker
Digital financial inclusion		.81						
Financial literacy	.69	.60		.72				
Financial behavior	.47	.43	.49	.44		.71		
Financial well-being	.57	.51	.74	.64	.45	.40		.74

Furthermore, the heterotrait-monotrait ratio (HTMT), along with the corresponding mean and standard deviation values, was examined. The HTMT results showed that each construct satisfied the discriminant validity criterion, as all values were below the accepted threshold of .90 (Hair et al., 2022). The Fornell–Larcker criterion showed that the square roots of the AVE for each construct exceeded its correlations with other constructs in the model. The results in Table 3 show that both criteria provide consistent evidence that the variables are distinct, thereby demonstrating sound discriminant validity.

The standardized root means square residual (SRMR) was .07 for the current study, which was lower than the proposed cutoff value of .08. This result implied that the research model demonstrated an acceptable level of model fit (Hair et al., 2022). The adjusted R<sup>2</sup> value for the dependent variable *financial behavior* was .23, indicating that the independent variables accounted for 23.00% of the total variance. Adjusted R<sup>2</sup> value for *financial well-being* was .44 indicating that the model accounted for approximately 44% of the variance in financial well-being.

**Results of Hypotheses Testing**

The results of the hypothesis testing for direct effects are presented in Table 4, along with the outcomes of the mediation effect analysis. The first hypothesis was supported ( $t = 3.84, p = .00$ ), confirming that financial literacy had a significant effect on financial behavior. The second hypothesis was also supported ( $t = 7.50, p = .00$ ), indicating that financial literacy significantly affected financial well-being. The findings showed that financial behavior was significantly and directly influenced by digital financial inclusion ( $t = 3.59, p = .00$ ), supporting the third hypothesis. Likewise, the fourth hypothesis was supported, demonstrating that digital financial inclusion had a positive effect ( $t = 2.60, p = .01$ ). The fifth hypothesis was confirmed ( $t = 2.62, p = .00$ ), showing that financial behavior significantly influenced financial well-being. Additionally, the sixth hypothesis, concerning mediation, was supported ( $t = 2.01, p = .04$ ), indicating that financial behavior served as a mediating variable between financial literacy and financial well-being. The seventh hypothesis, also related to mediation, was supported ( $t = 2.11, p = .03$ ), suggesting that financial behavior mediated the relationship between digital financial inclusion and financial well-being.

**Table 4**  
*Hypothesis Testing*

Hypothesis	Path	$\beta$	S.E.	<i>t</i> -value	<i>p</i> -value	Interpretation
H1	FL → FB	.28	.07	3.84	.00	Significant Effect
H2	FL → FWB	.49	.07	7.50	.00	Significant Effect
H3	DFI → FB	.26	.07	3.59	.00	Significant Effect
H4	DFI → FWB	.16	.06	2.60	.01	Significant Effect
H5	FB → FWB	.13	.05	2.62	.00	Significant Effect
H6	FL → FB → FWB	.04	.02	2.01	.04	Significant Effect
H7	DFI → FB → FWB	.03	.02	2.11	.03	Significant Effect

*Note.* FL: financial literacy; FB: financial behavior; DFI: digital financial inclusion, FWB: financial well-being.

## Discussion and Conclusion

### Discussion of Main Results

This study utilized the theory of (TPB) and social learning (SLT) as analytical frameworks to examine how financial behavior mediates the relationship between financial literacy, digital financial inclusion, and financial well-being. Using TPB, it was discovered that SME owners' attitudes toward financial management and perceived control over financial decisions directly influenced their ability to adopt effective financial strategies. These strategies led to better financial outcomes. For instance, owners with higher confidence and a positive attitude towards financial planning reported greater business finance management success. Social learning theory highlighted how SME owners learned from peers, adopting successful financial strategies. This theoretical combination offers a comprehensive understanding of financial behavior in the digital age, particularly in the maritime sector. This area that remains unexplored in the behavioral finance literature.

The first finding indicated that financial literacy enhanced responsible behavior among SME owners. When individuals understand how to save, invest, and manage their debts, they are more likely to behave responsibly than those with impulsive spending tendencies (Fong, 2025). The presence of literacy skills, coupled with the capacity to implement effective strategies, sense of control and a positive attitude can be understood within TPB model. This enables individuals to adopt behaviors that are both modeled, in line with Bandura's SLT theory (1969) and demonstrably effective. Tuffour et al. (2020) demonstrated that observational learning and social interaction, particularly through discussions, contribute to the development of financial literacy over time.

The second finding highlights that financial literacy encompasses not only the transmission of knowledge but also the socio-psychological processes that foster financial prosperity. In the TPB, financial literacy fosters positive meanings (viewing discipline as beneficial), increases norms (individual expectations), and enhances perceived behavior control (a sense of ability to make financial decisions). These factors intensify the motivation to engage in actions such as saving income or paying off debt, thereby reducing financial burdens, increasing liquidity, and enhancing financial security. In SLT, SME owners observe others who are successfully managing their finances, which forms vicarious outcome expectations and leads them to imitate corresponding behaviors. Such social reinforcement aligns with the findings of Tuffour et al. (2020), who demonstrated improvements in saving behavior when credible and successful role models are observable. This process of social empowerment reinforces the importance of accessible and validated social models in promoting positive financial behavior. The integration of TPB and SLT is a two-way causal relationship. Financial literacy is one of the variables that influences the development of changes in attitudes, intentions, and perceived control as outlined in the TPB, thereby encouraging the formation of certain financial behaviors, such as budgeting, efficient saving, and smart debt management. The social processes of recognition and imitation as described in SLT also support these actions. This process ultimately has a tangible impact that leads to increasing asset value, minimizing problem debt, and establishing income stability, which are crucial for the financial well-being of SME owners.

The third finding acknowledges that digital financial inclusion, through products such as digital banking, e-wallets, and peer-to-peer lending, facilitates more responsive financial behavior in response to change. Ease of access simplifies decision-making regarding fund management and investment, enabling faster and more informed actions (Angeles, 2022; Zaimović, 2025). It has been argued that perceived behavioral control is facilitated by the accessibility of digital platforms, which increases user's sense of control due to reduced distance, bureaucracy, and fewer time constraints. Such heightened perceptions of control foster intentions to adopt more rational and planned financial behaviors. Within the SLT framework, the ability of peers to effectively use digital financial services (obtaining working capital or increasing the pace of cash flow) serves as a powerful model for imitation (Murendo et al., 2017). The SLT points out that observing the successful behaviors of others can exacerbate the desire to do the same, especially in homogeneous communities.

The fourth finding shows that digital financial inclusion is statistically correlated with financial well-being. The intersection of higher individual capability and social support contributes to improved financial control, reduced income vulnerability, and increased financial security among SME owners. This conclusion aligns with the findings of Tan et al. (2024), who reported that access, availability, use, and affordability of internet services promote well-being in micro-enterprises. Key indicators of digital financial inclusion, such as accessibility, availability, usage, and affordability, serve as central drivers of improved financial well-being.

The fifth finding shows that financial behavior has a direct impact on the financial well-being of SME entrepreneurs. This can be explained in accordance with the TPB, businesspeople who believe they are competent and have financial goals are more likely to achieve controlled daily habits, which promote financial stability and reduce stress (Fan & Henager, 2021). According to SLT, financial behavior is influenced by internal and social aspects. Peer experiences are a source of learning and reinforcement that strengthen the belief that prudent financial practice has concrete consequences. This behavior becomes a socially supported norm that is likely to be maintained over time. Blending TPB and SLT reveals that financial practice serves as an essential bridge, connecting internal motivations and social learning to enhanced financial well-being. For SME owners, financial behavior is both a practice of managing money and a strategy for survival in business and enhancing their living standards.

Mediation analysis presents financial behavior as a central middleman between financial literacy, digital financial inclusion, and financial well-being. Individuals who are more financially literate exhibit sound financial behavior (Sajid, 2024), while internet access to finance integrates money management into everyday life (Zaimović et al., 2025). In the TPB, financial behavior is shaped by intentions and beliefs about financial decision-control. From an SLT perspective, it is facilitated by social learning, as SME owners adopt successful practices observed in their environment. Financial behavior thus guides knowledge and access to improved economic outcomes. Findings verify that economic health is something one does, knows, and maintains over times. Budgeting, saving, and managing debt are manifestations of both psychological and social processes. This mediating further confirms that changes in behavior play a crucial part in converting financial potential into enduring well-being.

The Sustainable Development Goals (SDGs) are the United Nations' 17 global objectives to end poverty, protect the planet, and ensure prosperity by 2030 (United Nations, n.d.). Integrating these goals and SLT in the blue economy and behavioral finance framework implies that supporting coastal SMEs requires collective action. This includes scaling up financial education, expanding digital infrastructure, and leveraging social networks through cross-learning. The framework advocates for targeted policies that accelerate digital inclusion and financial literacy in the marine and fisheries sector, thereby reducing poverty and enhancing the well-being of island communities.

## **Limitations**

This study has several limitations, which should be considered. The sample was small and drawn from a single location, limiting generalizability of the finding. Second, there is no longitudinal monitoring

of behavioral change or time evolution in digital inclusion and literacy for this work. Third, ability to assess changes in behavior or the development of digital inclusion and literacy was constrained by the use of a quantitative, cross-sectional design, which does not capture long-term financial behavior.

### Implications for Behavioral Science

This study contributes to behavioral science by integrating the theory of planned behavior (TPB) and the social learning theory (SLT) to expound on SMEs' financial behavior changes in the maritime and fisheries sectors. The TPB places financial literacy as its cognitive foundation, shaping positive financial attitudes and intentions. The SLT identifies how social norms and powerful role models support the adoption of behavior through observational learning. In this regard, financial behavior is a key mediator between financial literacy, digital financial inclusion, and financial well-being. Financial literacy equips SMEs with financial knowledge, while digital financial inclusion provides access to tools such as e-wallets, low-interest online loans, and digital bookkeeping systems. However, the sustainable outcomes are only achieved when knowledge and access are transformed into habitual activities such as budgeting, saving, and debt management (Bawalle et al., 2024). This reinforces the behavioral science tenet that behavior bridges cognitive ability and structural opportunity. Interventions should therefore be effectively combined with capacity building and community-based processes to establish and sustain healthy financial practices (Raharja et al., 2022). Policy strategies that integrate financial literacy, digital access, and social learning can develop synergies, boosting economic resilience, lowering inequality, and improving financial well-being in island and coastal communities.

### Conclusion

This study substantiates how digital financial inclusion and financial literacy significantly reduce the financial vulnerability of marine and fisheries SME owners in Indonesia, with financial behavior serving as an intermediary variable. Financial inclusion in digital financial services and financial literacy improve owners' attitudes, norms, and subjective behavioral control, as proposed by the theory of planned behavior. Additionally, they facilitate learning through observation, reinforcement, and enhanced self-confidence, in line with social learning theory. The integration of planned cognitive mechanisms and social learning process supports improved financial management practices, reduces financial vulnerability, and promotes operational efficiency in coastal areas with limited infrastructural networks.

### Declarations

**Conflicts of Interest:** We declare that there are no conflicts of interest.

**Ethical Approval Statement:** The study was conducted in accordance with the guidelines reviewed and approved by the Institutional Review Board of the Dean of the Faculty of Economics and Business at Brawijaya University, Malang, Indonesia (protocol code: 0016/UN10.F0221/B/PP2024, Date of Approval: July 4, 2024).

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