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Beyond access: Islamic financial literacy and women's empowerment

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Abstract

Purpose – This study examines the effect of Islamic financial literacy on women's empowerment using Islamic financial inclusion as a mediating variable. In addition, digital financial literacy was examined to capture its complementary role in expanding women's financial participation.

Methodology – Using data of 140 female who were or had been married, this group reflects household decision-making roles and provides valuable insights into women's empowerment. The relationships among the variables were analyzed using structural equation modeling-partial least squares (SEM-PLS).

Findings – The results show that both Islamic financial literacy and digital financial literacy significantly enhance Islamic financial inclusion and women's empowerment. However, Islamic financial inclusion does not significantly mediate the relationship between literacy (Islamic and digital) and women's empowerment.

Implications – The findings emphasize the need to strengthen financial literacy programs, both digital and Islamic, as part of broader efforts to advance women's empowerment in OIC (Organization of Islamic Cooperation) member countries. Financial institutions and policymakers should integrate literacy initiatives with inclusion strategies to ensure that women fully benefit from Sharia-compliant financial services.

Originality – This study provides new evidence linking Islamic financial literacy, digital financial literacy, and Islamic financial inclusion to explain women's empowerment. This offers insights into the pathways through which literacy and inclusion interact, particularly in the context of Islamic finance.

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Introduction

Women's empowerment (WE) is vital for society, as it contributes significantly to economic growth, social development, and overall community well-being. Empowered women enhance economic productivity by participating in the workforce, which strengthens household income and promotes economic stability (Abobaker, 2024). Empowerment is also closely tied to economic independence and decision-making capacity, both of which are strongly influenced by financial literacy and inclusion. Financial literacy provides the knowledge and skills needed to effectively manage finances and make informed financial decisions (Bongomin et al., 2020). Financial literacy

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is particularly important for women as it increases their participation in economic activities (Pal et al., 2022) and, in turn, supports greater independence (Lee & Huruta, 2022). This issue is particularly important for Indonesia, where nearly 70% (137 million) of women fall within the productive age group (15-64 yo), as illustrated in figure below.

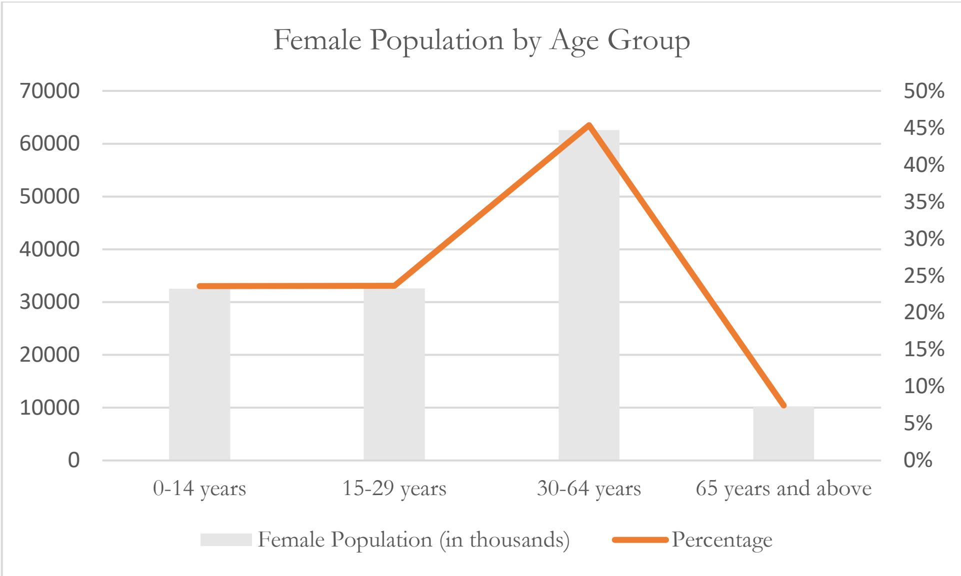

Figure 1. Female population by age group
Source: Badan Pusat Statistik, 2023

A high proportion of women in the productive age group makes WE a pressing issue. In Indonesia, where the Muslim population is the majority, many women have turned to Islamic financial institutions (IFIs) to meet their financial needs. These institutions hold a strong potential for advancing WE (Mboutchouang Kountchou et al., 2025; Rahayu, 2020; Shaikh & Ali, 2020), particularly through Islamic microfinance services that provide interest-free loans (Hassan et al., 2020). Islamic financial literacy (IFL) covers knowledge of financial management, investment strategies, and interest-free loan transactions (Rahman & Arsyianti, 2021; Sufyati, 2021). This literacy is especially valuable for women who face economic disadvantages within their families owing to cultural and systemic barriers in conventional finance. By strengthening women's financial literacy, their access to financial services can be improved, which in turn enhances their empowerment (Barus et al., 2024; Muslichah et al., 2023; Nawaz et al., 2021; Sadiq et al., 2023).

One critical pathway for advancing WE is access to inclusive financial systems, particularly those aligned with Islamic principles. Islamic financial inclusion (IFI) facilitates equitable access to financial resources for both individuals and businesses, thereby contributing to improvements in economic well-being (Bhatia & Singh, 2019; Siddik, 2017) while ensuring compliance with Sharia principles. Baber (2020) highlighted that Islamic finance is more inclusive than its conventional counterpart and plays a significant role in advancing WE. In the context of rapid technological development, digital financial literacy (DFL) has become increasingly important in enhancing WE. Previous studies have demonstrated that DFL positively influences WE (Hasan et al., 2023; Rahayu et al., 2023). This study aimed to investigate the influence of IFL and DFL on women's empowerment, with IFI serving as an intervening variable. Housewives were selected as respondents, as they hold a strategic position in managing household finances and embrace women's empowerment at the grassroots level.

Previous studies provide clear evidence that financial access, financial literacy, and financial inclusion are critical drivers of WE. Hazarika & Goswani, 2018) studied entrepreneurship in the micro-woven glove industry and found that digital financial systems improve access to Islamic finance, while increasing women's participation in entrepreneurial activities. However, that research focused on the entrepreneurial context, whereas the proposed research broadens its scope to include women's empowerment as both entrepreneurs and workers. Kumari et al. (2020) examined the effect of financial literacy on women's economic empowerment and concluded that financial inclusion mediates the relationship between financial literacy and WE. The difference from the proposed study lies in the variables used, where this study utilizes IFL and IFI as the main variables. Handayani et al. (2021) report the effects of IFL and financial inclusion on financial planning. The results show that both variables had a positive effect on financial planning. A key distinction of the proposed study lies in its emphasis on women's empowerment as the dependent variable rather than financial planning.

We found that past studies have also explored the nexus between DFL and WE. Rahayu et al., 2023) show that DFL has a stronger impact on WE than conventional financial literacy. Their study analyzed the influence of financial literacy and DFL on WE but did not consider the role of IFI as an intervening variable. In a related study (Nawaz et al., 2021) investigated the mediating role of financial inclusion in the relationship between financial literacy and WE. Their findings indicate that financial inclusion mediates the effect of financial literacy on WE, while social capital mediates the relationship between literacy and financial inclusion. The proposed research differs from these studies in terms of context and variables, as it examines WE within the framework of financial capability, considering the rapid development of financial technology in Indonesia, particularly within the Islamic financial system. A key distinction of this study lies in its context and variables, as it examines women's empowerment within the framework of financial capability, considering the rapid development of financial technology in Indonesia, particularly within the Islamic financial system.

Despite significant progress in expanding access to financial services, recent studies suggest that financial inclusion alone does not automatically translate into meaningful improvements in women's empowerment outcomes (Kumari et al., 2025; Mabrouk et al., 2023). Evidence from Saudi Arabia shows that digital financial inclusion has become increasingly crucial to women's economic decision-making, particularly in the context of Covid-19 (Mabrouk et al., 2023). Moreover, contemporary research in Indonesia demonstrates that financial literacy and inclusion significantly support women's entrepreneurial performance and sustainability (Lestari et al., 2025). These findings align with global patterns of gender disaparity in economic agendy and financial participation (Rietveld & Patel, 2022), highlighting that access must be matched by knowledge and capability for empowerment. Nevertheless, existing studies have not sufficiently explored the roles of IFL and IFI in fostering WE in the digital era. To address this gap, this study investigates the influence of IFL and DFL on women's empowerment, with IFI as an intervening variable, within the context of Indonesia's rapidly developing Islamic financial system.

Literature Review

Empowerment theory

Empowerment Theory conceptualizes empowerment as a process through which individuals gain the ability to make strategic life choices in contexts in which this ability has been previously constrained. One of the most influential formulations is provided by Kabeer, (1999), who defined empowerment as the expansion of people's capacity to exercise agency, supported by access to resources and leading to meaningful achievements. From this perspective, empowerment is not a static condition, but a dynamic process shaped by social, economic, and institutional structures. Importantly, empowerment goes beyond material or economic outcomes and includes cognitive, relational, and behavioral dimensions. This theoretical view underscores that empowerment must be understood within the specific social and cultural context in which individuals operate.

In empowerment theory, agency plays a central role in determining whether access to resources can be translated into improved well-being. Agency refers to an individual's ability to define goals, make decisions, and act upon them, both within the household and in the broader social sphere (Kabeer, 1999). Scholars argue that women may possess access to resources without empowerment if they lack decision-making authority or autonomy over their use (Aslop et al., 2006). Consequently, empowerment is often reflected in indicators such as decision-making power, mobility, autonomy, participation, and control over resources. This multidimensional understanding aligns with empirical approaches that measure empowerment through behavioral and relational outcomes, rather than income or employment alone.

Empowerment Theory also emphasizes that knowledge and capabilities are critical enablers of an agency. Drawing on the broader capability perspective, empowerment occurs when individuals are able to convert resources and opportunities into valued functions, such as autonomy and participation. In this sense, financial literacy can be viewed as an enabling capability that strengthens women's capacity to engage in financial systems and exercise informed choices. Without adequate knowledge and skills, access to financial services may remain symbolic, rather than transformative. Empowerment Theory provides a strong theoretical foundation for examining how financial literacy and institutional access interact to shape women's empowerment outcomes.

Islamic financial literacy, Islamic financial inclusion and women economic empowerment

As described by Atkinson and Messy (2012), financial literacy refers to the combination of awareness, knowledge, attitude, and behavior required to make informed financial decisions and secure personal financial welfare. IFL involves the knowledge, skills, and attitudes necessary for individuals to effectively navigate decisions in accordance with Islamic principles. IFL is essential for underpinning the efficacy and reach of Islamic finance in various sociocultural contexts. Understanding IFL is pivotal for fostering financial inclusion, particularly among marginalized groups, including women. This notion correlates with increased financial inclusion, which allows more individuals, particularly women, to engage in the financial system. In muslim-majority countries, IFL significantly contributes to financial inclusion, as explained by Abbas et al., (2023), showing that understanding Islamic financial products directly correlates with communal economic well-being, and promotes broader financial inclusion. Similarly, Yustati et al. (2024) suggest that a higher level of IFL results in improved personal financial management, which, in turn, manifests as an increase in the use of financial products. Sevriana et al. (2024) support these findings and conclude that well-informed individuals are more likely to navigate the complexities of financial products and make sound decisions regarding investments and savings within the Islamic framework. Therefore, it is expected that IFL positively influences Islamic financial inclusion.

H_1: Islamic Financial Literacy (IFL) has a positive and significant effect on Islamic Financial Inclusion (IFI).

IFL not only builds knowledge, but also fosters trust and confidence in using Islamic financial products. Women who understand sharia-compliant financial mechanisms are more likely to utilize Islamic financial services, which enhances their financial inclusion. The positive implications of IFL extend significantly to WE. Nawaz et al. (2023) indicated that financial inclusion mediates the relationship between financial literacy and WE. Baber (2020) pointed out that financial inclusion initiatives aim to integrate women into the financial system, thereby enhancing their social and economic standing. When women are financially literate, they are more likely to use financial products, combat poverty, and improve their economic conditions. According to Nurbaiti & Suyanto, 2022), financial literacy education addressing women's needs plays a vital role in improving their confidence and financial management skills, leading to higher asset ownership and active involvement in investment. Consequently, women gain greater autonomy in their financial affairs. Thus, we hypothesize the following:

H_2: Islamic financial inclusion (IFI) significantly mediates the relationship between Islamic financial literacy (IFL) and women's empowerment (WE).

Financial literacy provides women with knowledge and confidence in managing household finances more effectively, participating in income-generating activities, and achieving financial independence, all of which strengthen their overall empowerment (Nurbaiti & Suyanto, 2022). Islamic microfinance has been highlighted as especially beneficial in providing financial resources to women in low-income settings, leading to improved livelihoods and socioeconomic status (Islam, 2020; Shaikh & Ali, 2020). By strengthening women's financial knowledge within this framework, Islamic financial literacy is expected to enhance their decision-making power, asset ownership, participation in economic activities, and overall socioeconomic empowerment. Based on this reasoning, the following hypothesis is proposed:

H_3: Islamic financial literacy (IFL) has a positive and significant impact on women's empowerment (WE).

Islamic financial inclusion (IFI) can be understood as an effort to ensure that individuals and communities, especially those who are often excluded from the financial system, have access to, and can effectively use, Sharia-complaint financial products and services. What distinguishes IFI from conventional financial inclusion is that its foundation is Islamic principles that avoid riba (interest), gharar (excessive uncertainty), and maysir (gambling), while promoting risk-sharing, fairness, and social justice (Mohieldin et al., 2011). Islamic finance is designed to promote equity and socioeconomic justice, which aligns with the goals of WE. According to Rahman et al. (2022), Islamic banking has demonstrated a significant capacity to increase women's access to financial services, thereby supporting their economic activities in OIC member countries by increasing women's account penetration in Islamic banking. Aligned with this, Shaikh and Ali (2020) also state that IFI not only facilitates financial awareness but also strengthens individual agencies, contributing to WE. (Baber, 2020) posits that Islamic microcredit serves as a pivotal tool for empowering low-income women by promoting savings and entrepreneurship and creating better livelihoods in Malaysia. Other studies (Hasan et al., 2023; Nawaz et al., 2021) have shown that financial inclusion not only supports economic resilience, but also contributes to WE by giving them greater control over financial decision-making. Therefore, financial inclusion is expected to positively influence WE. Therefore, the following hypothesis can be derived:

H_4: Islamic financial inclusion (IFI) has a positive and significant impact on women's empowerment (WE).

Figure 2 presents the conceptual research model, illustrating the hypothesized relationships among Islamic financial literacy (IFL), digital financial literacy (DFL), Islamic financial inclusion (IFI), and women's empowerment (WE), as synthesized from the existing literature and theoretical frameworks.

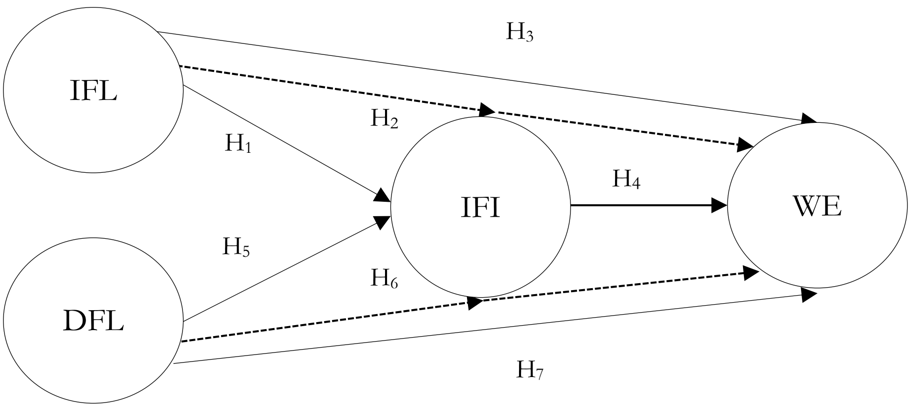

Figure 2. Conceptual research model
Source: Authors' own work, 2025

Digital financial literacy, Islamic financial inclusion, and women's empowerment

The rapid development of financial technology (fintech) has transformed how individuals interact with financial services. DFL, defined as the ability to understand and effectively utilize digital financial tools, enhances women's capacity to access financial services. According to Choung et al. (2025), DFL is a multidimensional construct that includes not only financial knowledge, but also practical skills and the awareness needed to navigate digital financial environments. This foundational knowledge is critical for women, particularly in emerging economies where access to traditional financial services is limited. The literature indicates that women with higher financial literacy are more likely to engage in digital financial services, thereby strengthening their financial inclusion (Rahayu et al., 2023). Therefore, we hypothesize as follows:

H_5: Digital financial literacy (DFL) has a positive and significant impact on Islamic financial inclusion (IFI).

DFL enables women to utilize online platforms for savings, transactions, and investment, thereby facilitating access to financial resources that are limited by geographical and sociocultural barriers. Women who are digitally literate are more likely to engage with financial institutions and often use digital financial services. Widyastuti et al. (2024) highlight the crucial link between DFL and digital financial inclusion, indicating that increased digital financial skills directly lead to improved access and use of financial services among women. The mediating role of financial inclusion is reinforced by empirical findings, indicating that access to financial resources plays a crucial role in enhancing women's economic decision-making. While prior studies present mixed evidence on the direct effect of financial literacy on economic decision making, Kass-Hanna et al. (2022) argue that digital financial literacy strengthens women's confidence in managing finances, thereby facilitating greater access to financial services. As women adopt digital financial services, their level of financial inclusion increases, which empowers them economically through greater participation in entrepreneurial and household financial activities. Hence, financial inclusion is expected to mediate the effect of DFL on WE. Based on the previous discussion, the following hypothesis was developed:

H_6: Islamic financial inclusion (IFI) significantly mediates the relationship between digital financial literacy (DFL) and women's empowerment (WE).

The use of DFL supported the empowerment of women by improving their access to financial resources and information. Proficiency in digital tools provides women with critical skills in navigating the financial landscape. Salamzadeh et al. (2024) argue that enhancing digital literacy enables women entrepreneurs to have improved access to information and markets, fueling their capacity to engage in entrepreneurial activities. Women with higher levels of financial literacy are more inclined to engage in effective financial planning and investment activities, which are crucial for empowerment and long-term sustainability (Mishra et al., 2024). DFL also facilitates participation in formal banking channels, further supporting women's empowerment. Hasan et al. (2023) highlight the distinction between general financial literacy and digital financial literacy, suggesting that the latter is vital for enabling women entrepreneurs to participate in the formal banking system (Hasan et al., 2023). This participation not only broadens their financial options, but also instills a sense of economic agency and empowerment. Similarly, research conducted by Agusti et al. (2024) explored how enhancing financial literacy and resource access can help bridge the gender wealth gap among women, supporting the notion that financial empowerment is critical).

H_7: Digital financial literacy (DFL) has a positive and significant impact on women's empowerment (WE)

Research Methods

This study employed a quantitative research design to empirically examine the relationship between IFL and DFL as independent variables, WE as the dependent variable, and IFI as the intervening construct. By integrating these variables into a single analytical framework, this study seeks to provide a more comprehensive understanding of the mechanism by which financial literacy, both Islamic and digital, contributes to WE in the context of a rapidly evolving financial landscape. To capture these relationships empirically, a structured questionnaire was developed in line with the selected variables, and the indicators for each construct were adapted from established measures in previous studies, as presented in Table 1.

Table 1. Variable indicator

No	Variable	Indicator	Sources
1.	Islamic financial literacy (IFL)	1. Knowledge about prohibited transactions in Islam (maysir, gharar, riba and batil) 2. Knowledge of Islamic financial contracts (murabahah, musyarakah, ijarah, istishna and murabahah) 3. Concept of profit sharing in Islam	(Albaity & Rahman, 2019)
2.	Digital financial literacy (DFL)	1. Knowledge on fintech product 2. Risk awareness on fintech 3. Knowledge on fintech risk control 4. Customer rights and obligations in fintech	(Rahayu et al., 2023)
3.	Islamic financial inclusion (IFI)	1. Accessibility of Islamic financial services 2. Usefulness of Islamic financial products	(Abbas et al., 2023)
4.	Women empowerment (WE)	1. Mobility 2. Decision making power 3. Self-autonomy 4. Asset ownership 5. Freedom from domination 6. Participation in activities outside home 7. Contribution to family income 8. Reproductive rights 9. Exposure to information	(Biswas & Kabir, 2004)

Source: Authors' own work, 2025

Samples and data collection

This study employed a non-probability sampling technique with a purposive–convenience hybrid approach, targeting women who are or have been married, as this group is typically central to household financial decision-making in the Indonesian sociocultural context (Biswas & Kabir, 2004). To ensure adequate representation, this study targeted a minimum of 100 female respondents aged 15 years and above, as this demographic is considered capable of making independent financial decisions. This study focuses on women who are married or have been married, because marital and household contexts provide relevant settings in which women's access to financial services, financial decision-making, and intra-household bargaining power can be observed. It is important to note that marital status was not used as a proxy for women's empowerment in this study. Following Biswas and Kabir (2004), women empowerment is conceptualized as a multidimensional construct concerning decision-making power, mobility, autonomy, rights, and participation, regardless of marital or employment status.

Data were collected through an online structured questionnaire distributed via Google Forms between June 15, 2025, and August 10, 2025. The link was disseminated through community networks and social media groups (WhatsApp and Instagram) that focused on women's economic empowerment and Islamic finance. To minimize selection bias, the questionnaire included initial screening questions to verify eligibility and IP address tracking was used to prevent duplicate applications.

The questionnaire consisted of two sections. The first section collected demographic information including place of residence, age, education level, marital status, monthly income, and expenditure. The second section contained items designed to measure the research variables. All measurement items were structured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), which is widely used to capture respondents' attitudes and perceptions with reliability and comparability across studies.

Data analysis technique

1. Outer model
   a. Convergent validity test
      In the context of Structural Equation Modeling (SEM), the assessment of the reflective measurement model aims to evaluate the validity and reliability of the instrument.

According to Hair et al. (2023), convergent validity was examined using average variance extracted (AVE). A threshold value of 0,50 is generally accepted, indicating that explains more than 50% of the variance of its indicators. Thus, an AVE value greater than 0,50 demonstrates that the construct has adequate convergent validity and is capable of representing the underlying indicators effectively. While an AVE of 0.5, or greater, is conventionally recommended, some studies suggest that values above 0.4 may be acceptable depending on specific contextual factors and supporting evidence from reliability metrics such as composite reliability (CR). Bernal-Guerrero et al. (2020) noted that while the commonly accepted threshold for AVE is at least 0.5, there are occasions where lower AVE values can be considered acceptable, particularly when evaluated alongside other indicators such as CR and the square root of AVE for assessing discriminant validity. Cai et al. (2023) highlight that if the residual variances for each dimension exceed 0.6, then it is permissible to consider an AVE greater than 0.4 as acceptable. The AVE value for all variables was > 0,40, so the construct was valid.

b. Discrimininant validity test

Discriminant validity further ensures that each construct is empirically distinct from the others. This study employed the Heterotrait-Monotrait ratio (HTMT), as recommended by Ringle et al., 2024), with values below 0,90 indicating acceptable discriminant validity. Cross-loading analysis was not applied because it is no longer considered a rigorous method for establishing discriminant validity. Table 2 shows that the HTMT score for each variable is <0.9, thus meeting the assumption of discriminant validity.

Table 2. Discriminant validity – HTMT

	DFL	IFI	IFL	WE
Digital financial literacy (DFL)				
Islamic financial inclusion (IFI)	0,713			
Islamic financial literacy (IFL)	0,864	0,730		
Women empowerment (WE)	0,602	0,391	0,593	

Source: Authors' own work, 2025

2. Inner model

The structural (inner) model was evaluated using the coefficient of determination R^2, which indicates the explanatory power of exogenous latent variables on endogenous latent variables. According to Chin and Newsted (1998), R^2 can be classified into three categories: (1) above 0,67 are considered strong; (2) >0,33 – 0,67 are considered moderate, and (2) >0,19 – 0,33 are considered weak. Changes in R^2 reflect the substantive effect of exogenous constructs on endogenous constructs, thereby indicating the model's predictive accuracy. The evaluation of the inner model revealed that the R^2 values for Islamic financial literacy and women empowerment were 0.485 and 0.342, respectively. According to the classification by Chin and Newsted (1998), these values fell within the moderate category (range > 0.33 - 0.67). This indicates that the model has a moderate capacity to explain variations in the dependent variables.

3. Goodness of Fit (GoF)

The goodness-of-fit (GoF) test was used to check whether the sample data fit the model. Specifically, it compares the sample covariance matrix with the covariance matrix estimated using the model. In this study, the standardized root mean square residual (SRMR) was used as the main indicator of the GoF. SRMR shows the difference between the observed correlation matrix and the correlation matrix predicted by the model. An SRMR value below 0.10 indicates a good fit, whereas values between 0.08 and 0.10 are still considered acceptable (Schermelleh-Engel et al., 2003). Table 3 shows that the GoF test produced an SRMR value of 0.094, indicating acceptable model fit.

Table 3. Standardized root mean square residual (SRMR)

	Saturated model	Estimated model
SRMR	0.094	0.094
d_ULS	3.616	3.616
d_G	1.470	1.470
Chi-Square	1.015.058	1.015.058

Source: Authors' own work, 2025

The measurement model results, summarized in Table 4, show that all constructs satisfied the recommended thresholds for factor loadings, Cronbach's alpha, composite reliability, and average variance extracted. These findings confirm the reliability and convergent validity of the measurement model.

Table 4. Summary model result

Construct	Indicator	FL	CA	CR	AVE
Islamic financial literacy (IFL)	IFL1	0,792	0,903	0,667	0,667
	IFL2	0,856			
	IFL3	0,893			
	IFL4	0,877			
	IFL5	0,641			
Digital financial literacy (DFL)	DFL1	0,650	0,914	0,929	0,569
	DFL2	0,811			
	DFL3	0,860			
	DFL4	0,775			
	DFL5	0,591			
	DFL6	0,676			
	DFL7	0,754			
	DFL8	0,737			
	DFL9	0,835			
	DFL10	0,809			
Islamic financial inclusion (IFI)	IFI1	0,627	0,871	0,680	0,680
	IFI2	0,851			
	IFI3	0,870			
	IFI4	0,870			
	IFI5	0,865			
	IFI6	0,835			
Women's empowerment (WE)	WE1	0,682	0,836	0,850	0,494
	WE2	0,715			
	WE3	0,632			
	WE4	0,667			
	WE5	0,679			
	WE6	0,785			
	WE7	0,747			

Note: FL: Factor loading, CA: Cronbach's alpha, CR: Composite reliability, AVE: Average variance extracted
Source: Authors' own work, 2025

4. **Hypotheses test**
   Hypotheses were tested using partial least squares structural equation modeling (PLS-SEM). PLS-SEM is appropriate for theory development, predictive objectives, and models that include reflectively measured mediating effects and latent constructs. All analyses were performed using SmartPLS with bootstrap resampling.

Results and Discussion

Results

Table 5 displays out of 148 questionnaires distributed, 140 valid responses were analyzed. Most respondents were aged 26–35 years (57.86%), followed by 36–50 years (33.57%), while fewer were

18–25 years (6.43%) and above 50 years (2.14%). The dominance of respondents aged 26–35 (57.86%) and 36–50 (33.57%) indicates that the sample is largely composed of individuals in their productive and family-oriented stages of life. This age composition may influence perspectives on household finance, stability, and long-term decision-making. In terms of marital status, the majority were married (92.14%), and only 7.86% had been previously married. Since the vast majority are married (92.14%), those responses are suitable with the research deals about family finance and household decision-making. Regarding education, most respondents completed senior high school (40.00%) or held a bachelor's degree (35.00%), while others reported a diploma (17.14%), a master's degree (7.14%), or junior high school (0.71%) as their highest education level. This suggests that respondents are relatively well-educated, which may contribute to higher awareness, financial literacy, or openness technology.

With respect to occupation, nearly half of the respondents were housewives (45.71%), followed by entrepreneurs (32.14%) and professionals (8.57%). Only a few were unemployed (1.43%), and none were identified as students, technicians, or managerial employees. The predominance of housewives (45.71%) and entrepreneurs (32.14%) shows that many respondents either depend on household income or operate small businesses. This could imply dual reliance on household financial management and micro-entrepreneurship, which might affect resilience and women's empowerment. In terms of monthly income, the largest group earned IDR. 2,500,001 and Rp. 5,000,000 (42.14%), followed by those with an income of IDR. 5,000,001 to IDR. 10,000,000 (27.14%) and IDR. 1,000,001 to IDR. 2,500,000 (19.29%). A smaller share reported earnings of less than IDR. 1,000,000 (9.29%), whereas only 2.14% earned more than IDR. 10,000,000. Most respondents fell into the middle-income categories (42.14% in Rp. 2.5–5 million, and 27.14% in Rp. 5–10 million). This middle income dominance indicates that the sample represents a relatively stable economic group.

Table 5. Sociodemographic characteristics of women in the study

No	Category	Criteria	Total	Percentage
1.	Age	18 – 25	9	6,43
		26 – 35	81	57,86
		36 – 50	47	33,57
		> 50	3	2,14
2.	Marital status	Marry	129	92,14
		Married	11	7,86
3.	Education level	Junior high school	1	0,71
		Senior high school	56	40,00
		Diploma	24	17,14
		Undergraduate	49	35,00
		Postgraduate	10	7,14
4.	Occupation	Housewife	64	45,71
		Student	0	0,00
		Entrepreneur	45	32,14
		Managerial	0	0,00
		Professional	12	8,57
		Unemployed/Not working	2	1,43
5.	Income per month	Less than IDR. 1.000.000	13	9,29
		IDR. 1.000.001,- s/d 2.500.000,-	27	19,29
		IDR. 2.500.001,- s/d 5.000.000,-	59	42,14
		IDR. 5.000.001,- s/d 10.000.000,-	38	27,14
		More than IDR. 10.000.001,-	3	2,14

Source: Authors' own work, 2025

Hypothesis test result

This study examined the influence of Islamic financial literacy and digital financial literacy on Islamic financial inclusion. Specifically, it investigates whether individuals' knowledge of Islamic finance and their technological capabilities encourages them to choose Islamic financial institutions. Furthermore, this study seeks to analyze the impact of financial literacy and digital financial literacy on women's economic empowerment. It also explores whether Islamic finance contributes to empowering women, particularly those who become customers, by measuring Islamic financial inclusion variables. This study employs structural equation modeling (SEM) with a partial least squares (PLS) approach. The results of the path analysis on the influence of exogenous variables on Islamic financial inclusion and women's economic empowerment are presented in table x and Figure 3.

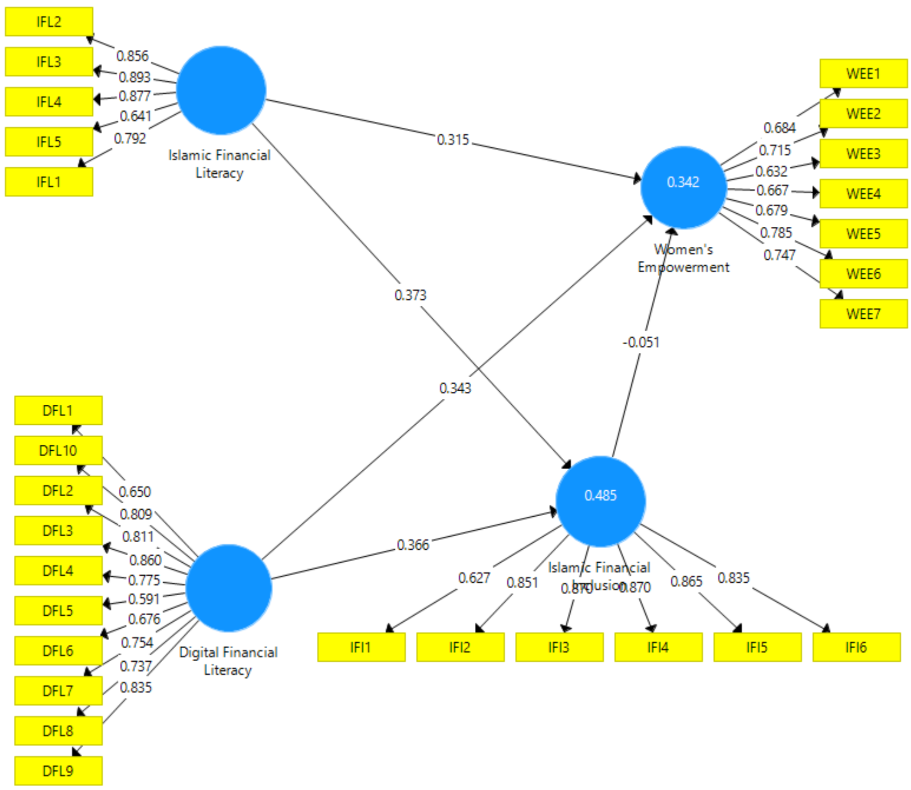

Figure 3. SEM Analysis Using SmartPLS
Source: Authors' own work, 2025

In partial least squares structural equation Modeling (PLS-SEM), three indicators are particularly important for assessing path coefficients: the original sample (O), the Sample Mean (M), and the Standard Deviation (STDEV). The O value reflects the coefficient derived from the original dataset, whereas the M value represents the average coefficient obtained through bootstrapping. A small gap between O and M typically results in a stable estimate. Meanwhile, STDEV indicates the variability of the bootstrapped coefficients, where lower values indicate greater reliability.

Table 6. Direct effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T Statistics (|O/STDEV|)	P values
IFL → IFI	0.373	0.368	0.105	3.540	0.000
IFL → WE	0.315	0.308	0.129	2.448	0.015
DFL → IFI	0.366	0.379	0.091	4.021	0.000
DFL → WE	0.343	0.354	0.135	2.534	0.012
IFI → WE	-0.051	-0.038	0.114	0.453	0.650

Source: Authors' own work, 2025

As detailed in Table 6, the first relationship, DFL → IFI, produces an original sample of 0.366 and a sample mean of 0.379, with a low standard deviation of 0.091. The closeness of O and

M demonstrates that the estimation is stable, whereas the relatively small STDEV confirms its reliability. With a significant t-statistic of 4.021 and p-value below 0.001, digital financial literacy has a strong and positive effect on Islamic financial inclusion.

For DFL → WE, the results are O = 0.343, M = 0.354, and STDEV = 0.135. Although the standard deviation is higher than that in the previous path, the difference between O and M remains minimal, suggesting that the estimate is consistent. This relationship is significant (t = 2.534, p = 0.012), providing evidence that digital financial literacy positively contributes to women's economic empowerment. This finding implies that women with stronger digital financial capabilities are more likely to improve their economic agency.

Regarding IFI → WE, the findings are quite different. The path coefficient is O = -0.051 with M = -0.038, whereas the STDEV is 0.114, which is relatively large compared to the coefficient itself. The statistical test revealed a negative relationship between the IFI and WE, but the relationship was not significant (t = 0.453, p = 0.650). These results indicate that Islamic financial inclusion does not directly affect women's economic empowerment. The negative but very small coefficient further emphasizes the lack of a meaningful impact.

In contrast, the path from IFL to IFI demonstrates strong support. The values are O = 0.373, M = 0.368, and STDEV = 0.105. The near-identical O and M values confirm the stability of the model's estimation, while a moderate standard deviation suggests reliability. With a t-statistic of 3.540 and p < 0.001, the results affirm that Islamic financial literacy has a significant and positive effect on Islamic financial inclusion.

Finally, the IFL → WE path yields O = 0.315, M = 0.308, and STDEV = 0.129. Despite the moderately high STDEV, the close alignment of the O and M signals was consistent. The path is statistically significant (t = 2.448, p = 0.015), confirming that Islamic financial literacy plays a role in advancing WE. This finding suggests that women who are more knowledgeable about Islamic financial principles are better positioned to strengthen their economic standing.

Indirect effect

In addition to direct relationships, Table 7 shows the indirect effects of the mediating variables.

Table 7. Indirect effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T Statistics (|O/STDEV|)	P values
DFL → IFI → WE	-0.019	-0.012	0.043	0.435	0.664
IFL → IFI → WE	-0.019	-0.015	0.046	0.415	0.678

Source: Authors' own work, 2025

The path from DFL to WE through IFI showed a coefficient of –0.019 with a *p-value* of 0.664, indicating that the mediation effect was not statistically significant. Similarly, the path from IFL to WE through IFI yields a coefficient of –0.019 with a *p-value* of 0.678, also demonstrating insignificance. These results suggest that IFI does not serve as a mediating variable in the relationship between financial literacy (both digital and Islamic) and women's empowerment within this study.

Discussion

These findings indicate that financial literacy is a key driver of women's empowerment even without formal financial inclusion channels. This aligns with the financial capability approach (Sherraden et al., 2015), which emphasizes that financial capability encompasses not only access (inclusion), but also knowledge and skills (literacy). In Indonesia, where the penetration of Islamic financial institutions remains low, with an IFI rate of 13% (Otoritas Jasa Keuangan, 2025), literacy serves as a self-empowerment mechanism that enables women to make better economic decisions despite limited institutional access. This finding is supported by Rachmadini and Damayanti (2023), who found that financial literacy increases women's autonomy in managing household finances, especially during crises (e.g., pandemics), even without the intervention of formal financial institutions. Similarly, Hasan et al. (2023) showed that DFL strengthens women's capacity to access market information, manage digital risks, and participate in the digital economy without relying on traditional bank inclusion.

In Indonesia, IFL is crucial because it empowers individuals to engage with Islamic financial products, thereby broadening the customer base of Islamic financial institutions (Asyik et al., 2022; Wijaya et al., 2024). The IFL movement emphasizes educational initiatives as a critical avenue for increasing public awareness of Islamic financial products (Suseno et al., 2021). This approach is supported by three pillars: promoting educational programs, enhancing financial literacy infrastructure, and leveraging Indonesia's Muslim population to bolster the understanding of Sharia-compliant financial products. Therefore, IFL is not only central to improving participation in Islamic financial services, but also lays the foundation for broader social and economic transformation.

One of the most significant dimensions of the broader impact of IFL is women's empowerment (WE). IFL helps women with both knowledge and confidence to actively participate in Islamic financial and economic life. A higher level of IFL among women enhances their decision-making competence, which subsequently shapes their financial management behavior and fosters greater empowerment. In response, several Islamic financial institutions, particularly microfinance institutions, have positioned women as a primary focus of financing and empowerment initiatives despite the persistent challenge of gender inequality within the Islamic financial sector (Hazmi & Utami, 2024). This argument is supported by Ali et al. (2021), Nawaz et al. (2021) and Rachmadini and Damayanti (2023) who find that financial literacy among women not only aids in their economic independence but also enhances their confidence in financial decision-making, enabling them to participate more fully in the economy. Women who are financially literate are more likely to engage in entrepreneurial activities and are better positioned to navigate crises and financial challenges, reinforcing their economic resilience (Nawaz, 2015; Rachmadini & Damayanti, 2023). Hence, creating environments that promote both financial literacy and access to Islamic financial services can amplify WE and contribute to social equity (Tubastuvi & Rusydiana, 2024).

This study highlights the importance of DFL in strengthening WE. Having the skills to use financial tools not only helps women manage households and personal finance more effectively but also opens opportunities to participate in income generation and access wider financial access. It enables individuals to navigate digital financial products that adhere to Islamic principles. DFL serves as a digital platform in providing financial services. In Muslim-majority countries, DFL enables individuals to effectively navigate digital financial products that comply with Islamic principles. DFL enhances users' understanding of digital platforms, thereby facilitating access to Islamic financial products while ensuring compliance with the Shariah principles. Empirical evidence demonstrates that higher levels of DFL lead to greater participation in Islamic financial systems by simplifying complex financial products and fostering more informed decision making among potential users (Abadi et al., 2022; Shen et al., 2018). DFL use mediates the relationship between financial literacy and overall financial inclusion, reinforcing the idea that higher digital literacy encourages more users to adopt these services (Rahmayati et al., 2022; Shen et al., 2018). Additionally, the Islamic financial literacy framework highlights the necessity of understanding both Islamic financing principles and the digital tools that facilitate their application. A well-structured DFL campaign not only educates users about the principles of Islamic finance, but also provides practical guidance on how to engage with available digital financial instruments (Al Balushi et al., 2019; Rachmatulloh & Solekah, 2021). By teaching women and younger audiences digitally navigating Islamic finance products, these initiatives catalyze their inclusion in formal financial markets, ultimately aiming to reduce the gender and access gap within Islamic finance (Al Balushi et al., 2019; Fadillah & Lubis, 2024).

As technology continues to advance, financial products are becoming increasingly innovative, making DFL an essential skill for anyone who uses financial services. In Indonesia, financial institutions have adopted digital innovations that allow people to easily access services through their own devices. Beyond convenience, DFL also helps protect users from risks, such as cybercrime. With sufficient knowledge, individuals can make wiser financial choices and reduce their chances of falling victim of fraud. DFL is a critical determinant of women's economic empowerment, as it offers them the skills required to effectively navigate digital financial services. DFL contributes to improved socioeconomic outcomes for women by fostering financial independence and strengthening decision-making capacity. Numerous studies have affirmed this relationship, emphasizing the significance of DFL in advancing women's empowerment across different contexts. (Hendriks, 2019) shows that digital financial services can alleviate poverty and improve household financial management among women in Kenya, where mobile money has positively impacted female-headed households. This accessibility, paired with improved financial knowledge, leads to a significant increase in women's ability to proactively engage with the financial system, thus challenging traditional economic barriers (Mabrouk et al., 2023; Ojo, 2022).

In line with DFL, having a digital account, saving, and access to digital payments are essential contributors to economic empowerment, particularly in the aftermath of the COVID-19 pandemic. Research has shown that increasing financial literacy in digital environments correlates strongly with improved income and savings for women, demonstrating that women who are educated on digital financial tools harness them effectively for economic gain (Mabrouk et al., 2023).

Based on this study's findings, the mediating role of Islamic financial institutions (IFIs) is insignificant. This can be explained through two lenses: (a) Infrastructure gaps and the reach of Islamic financial institutions. Although the Islamic financial institution (IFI) rate in Indonesia has reached 43.42% (Otoritas Jasa Keuanngan, 2025), the number of Islamic financial institutions, especially in rural areas, remains limited. This creates an "implementation gap": women are aware of Islamic products but cannot access them physically or digitally. This phenomenon was also reported by Rahman et al. (2022) in their cross-country study of the OIC, which found that the presence of Islamic banks is not evenly distributed; therefore, the benefits of inclusion are not distributed fairly to women. (b) Literacy is a prerequisite for effective inclusion. Yustati et al. (2024) emphasized that financial inclusion is only effective if preceded by adequate literacy. Without an understanding of Islamic principles or digital tools, women may become "passive customers" without the capacity to strategically utilize services. In our research, literacy directly increases empowerment because it builds agency—the ability to act— which does not always come from simply having a bank account.

This study also examines the indirect effects of DFL and IFL on WE through IFI. However, the indirect effect was not statistically significant, suggesting that IFI did not mediate the relationship between IFL and DFL in WE. The relationship between financial literacy and economic empowerment is well-established. The increased financial literacy equips women with better decision-making capabilities regarding their finances, leading to an enhanced sense of autonomy and economic security (Adiandari, 2023; Lee & Huruta, 2022; Nawaz et al., 2023; Rachmadini & Damayanti, 2023). Adiandari (2023) noted that financial literacy assists women in understanding complex financial products and navigating the financial landscape, which is essential for their empowerment. However, the direct correlation with Islamic financial inclusion remains ambiguous as it does not necessarily translate into improved economic outcomes for women.

Moreover, while financial inclusion is viewed as a vital step toward empowering women, research indicates that its effect can be limited without a foundational level of financial literacy. Yustati et al. (2024) argue that IFL can lead to better financial management practices, yet its effectiveness is contingent on an individual's access to financial inclusion resources. Mishra et al. (2024) underscored the importance of financial literacy in strengthening women's financial decision-making. However, their analysis does not extend to its implications within the framework of Islamic financial policies, indicating a gap that warrants further exploration in contexts in which Shariah-compliant finance plays a central role.

This study found a significant direct relationship between DFL and WE. This finding underscores that DFL is instrumental in improving financial behavior, a critical factor in WE. Empowerment may occur independently of financial inclusion mechanisms, reflecting that foundational skills enhance women's agency in financial decisions, without necessitating the mediating role of inclusion. Even though Islamic financial inclusion aims to broaden access to financial tools and services for women, its effectiveness can be diminished by sociocultural barriers (Ojo, 2022). Thus, when financial inclusion initiatives fail to consider sociocultural barriers, they may struggle to genuinely integrate and empower women, making their expected mediating role less effective. Recent studies show that the link between financial literacy, inclusion, and empowerment is not always straightforward. For instance, Nawaz et al., (2021) found that financial inclusion does not consistently act as a mediator, as women's empowerment is often shaped by other factors, such as personal agency and socioeconomic background. In this study, the absence of mediation through Islamic financial inclusion could be explained by the direct impact of DFL, ongoing challenges in inclusion mechanisms, unequal access to services, and differences in theoretical perspectives, particularly in the Islamic finance context. Future research should pay closer attention to sociocultural dynamics and explore collaborative strategies that connect financial education more effectively with inclusive practices.

The second indirect effect examined the role of IFI in mediating the effect of IFL on WE. The P value is 0,678 which indicate an insignificant effect, so the contribution of IFI as a mediator in this model cannot be confirmed. Although Indonesia has the largest Muslim population, the IFI often lacks the necessary infrastructure and outreach to effectively support women's economic activities. While financial literacy, defined as the ability to understand and appropriately use various financial skills, is critical for individuals, its impact is diminished in contexts in which financial institutions fail to adequately cater to women's specific financial needs. The Financial Authority Service (2025) shows that the level of IFL in Indonesia has reached 43,42%, but the gap in access to Islamic financial institutions through IFI is quite large, at only 13%, and has not shown significant improvement. This indicates that the number and outreach of Islamic financial institutions are still quite low, so women's access to Islamic finance products remains limited due to sociocultural norms and institutional biases that inhibit their participation in the financial system (Mahadi et al., 2019; Rahman et al., 2022).

Additionally, the structure of Islamic financial inclusivity frequently does not correspond to the reality of women's economic participation. Many Islamic financial institutions have not developed targeted products that consider the unique challenges faced by women entrepreneurs (Abdul Razak & Asutay, 2022; Baber, 2020). Some Islamic financial institutions are reluctant to give large amounts of credit to women; they require the husband to sign when disbursing the loan (Hazmi & Utami, 2024). Enhancing WE requires robust strategies that integrate financial education, tailored financial products, and supportive policies to foster an inclusive environment for women's economic activities).

Conclusion

This study examines the influence of Islamic financial literacy (IFL) and digital financial literacy (DFL) on women's empowerment (WE) using Islamic financial inclusion (IFI) as a mediating variable. Empirical findings show that financial literacy, both IFL and DFL, exerts a significant direct influence on WE. Moreover, both IFL and DFL significantly influenced IFI, and DFL showed a significant direct effect on WE. However, the pathway from IFI to WE was not statistically significant, and the indirect effect analysis further confirmed that IFI did not mediate the relationship between either IFL or DFL and WE. These findings suggest that the most crucial factor in empowering women is not simply access to financial services but financial literacy itself—both Sharia and digital. Although inclusion remains a valuable policy goal, its impact on empowerment hinges on basic financial literacy, which enables women to translate knowledge into economic institutions and actions.

The findings highlight the importance of strengthening women's financial literacy as these factors directly enhance WE. These findings underline the need for Islamic financial institutions to move beyond simply providing access to financial products. Digital financial service providers should expand digital access and focus on ensuring that women confidently and effectively use these services. As DFL plays a direct role in strengthening WE, providers should invest in user education through simple tutorials, interactive features, and customer support tailored to different literacy levels. By aligning product design with women's everyday financial needs, such as savings tools, micro-investment options, or budgeting features, digital financial service providers can transform access into meaningful empowerment.

This study provides insights into the factors influencing financial inclusion and women's empowerment; however, there are limitations that need to be considered. First, the non-probability (convenience-purposive) sample, although demographically representative, does not reflect national geographic diversity (e.g., provinces outside Java). Second, the IFI construct is measured using only two indicators (accessibility and usefulness), which may not capture behavioral dimensions (e.g., transaction frequency and product diversification). To address these limitations, further research should expand the sample coverage to rural and border areas to capture inclusion disparities. Further research is also recommended to uncover the differences in respondents across rural and urban areas. Finally, further research could use a more comprehensive IFI index.

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