
Issues and Perspectives in Business and Social Sciences

Drivers of Islamic financial literacy: the roles of financial behavior, digital literacy, and financial socialization

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Abstract

This study models the determinants of Islamic financial literacy (IFL) among university students in Malaysia, focusing on the roles of financial behavior, digital literacy, and financial socialization. Using a quantitative design, data were collected from 394 respondents using an online survey. The analysis employed ordinal logistic regression (OLR), and due to a violation of the proportional odds assumption, the generalized ordinal logistic model (GOLM) was applied to improve the model accuracy. The results indicate that financial behavior, digital literacy, and financial socialization are all statistically significant predictors of IFL at the 1% level. Among the demographic variables, age, year of study, field of study, and work experience were significantly associated with high IFL levels, whereas gender was statistically insignificant. Notably, financial socialization emerged as the strongest predictor, underscoring the influence of social and religious environments on financial knowledge acquisition. These findings suggest an urgent need for holistic educational interventions that integrate Shariah-compliant financial education with digital tools and social learning. This study's insights offer valuable implications for universities and Islamic financial institutions seeking to improve IFL among youth.

Keywords:

Islamic financial literacy; Financial behavior; Digital literacy; Financial socialization; University students, Malaysia.

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1. Introduction

Financial literacy is widely recognized as the ability to understand and apply financial concepts effectively in daily life to make sound financial decisions (Servon & Kaestner, 2008). Within the Islamic context, this expands the comprehension of Shariah-compliant products and services. Thus, Islamic financial literacy (IFL) is essential for individuals to align their financial behaviors with Islamic principles (Pala et al., 2023; Osman et al., 2023). According to Bhatti (2019), IFL also plays a crucial role in helping individuals recognize the risks associated with non-compliance, thereby contributing to financial stability (Hamzah, et. al, 2024c).

Several studies have demonstrated that academic exposure to Islamic finance significantly improves financial literacy among university students (Alfarisi, 2020). However, insufficient knowledge may lead to poor financial decision making, increased vulnerability to debt, and susceptibility to scams or unethical practices (Norzitah Abdul Karim et al., 2023). Moreover, IFL

is closely linked to both personal and social well-being, positioning it not just as a financial skill but also as a religious obligation rooted in ethical financial conduct (Hossain & Abdullah, 2019).

Despite the growing importance of IFL, existing research has often focused on general financial literacy or limited age groups, overlooking the specific needs of young adults in higher education (Nik Azman et al., 2023). A recent survey found that 75% of students possess only low-to-medium levels of financial literacy, a factor that likely contributes to increasing bankruptcy rates among Malaysian youth (Sia, 2024). As young adulthood marks a critical transition into financial independence, early exposure to financial education, particularly within an Islamic framework, can play a transformative role in shaping sustainable financial behavior (Mohamad Fazli Sabri et al., 2023).

This study seeks to bridge this gap by examining the demographic and behavioral determinants of FL among Malaysian university students. Specifically, this study investigates the influence of financial behavior, digital literacy, and financial socialization on IFL levels. This research utilized a quantitative approach incorporating chi-square analysis and generalized ordinal logistic regression to comprehensively assess these relationships. Ethical considerations including informed consent and participant confidentiality were fully upheld throughout the study. Unlike previous studies that focused solely on general financial literacy, this study uniquely models IFL using generalized ordinal logistic model (GOLM), incorporating behavioral, digital, and social predictors. The application of this technique provides a more accurate and nuanced understanding of the factors shaping Shariah-compliant financial knowledge among Malaysian youths.

The research objectives guiding this investigation are as follows: (i) to analyze the demographic factors associated with the level of Islamic financial literacy among university students and (ii) to determine the relationship between financial behavior, digital literacy, and religious financial socialization with Islamic financial literacy levels. Ultimately, this study aimed to increase awareness of IFL and provide evidence-based insights for developing targeted educational programs aligned with Islamic values. These findings also offer practical implications for Islamic financial institutions seeking to understand how future generations perceive and engage with Shariah-compliant financial services, particularly through digital and social channels.

2. Islamic financial literacy

The conceptual framework guiding this study illustrates the hypothesized relationships between financial behavior, digital literacy, and financial socialization as independent variables, and IFL as the dependent variable, as depicted in Figure 1.

2.1 Financial behavior and IFL: a behavioral finance perspective

Financial behavior encompasses an individual's decisions, routines, and habits in managing money, including budgeting, saving, and spending (Hamzah et al., 2024a). The Consumer Financial Protection Bureau (2023) defines it as a collection of practices that influence financial well-being, where the effective management of cash flow is central. Bennett and Wojno (2024) emphasize the importance of tracking expenses and income to identify savings opportunities and align spending with financial goals. Savings behavior is especially crucial (Hamzah et al., 2024b). According to the Bank of America (2022), individuals who automate deposits in savings accounts are more consistent in their savings practices, contributing to long-term financial stability. This aligns with Islamic financial teaching, which discourages wastefulness and promotes the ethical stewardship of wealth.

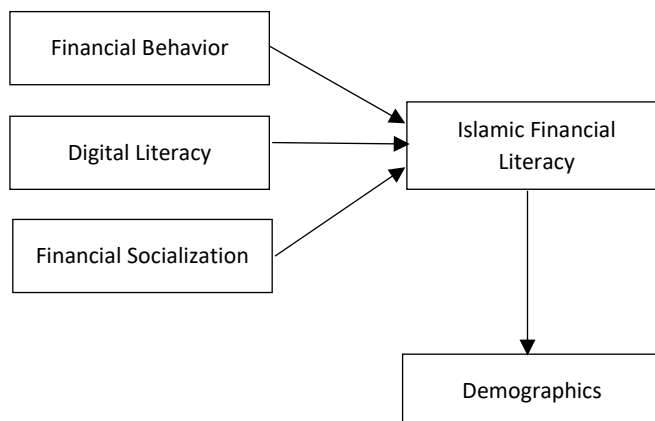


Figure 1. Research framework

From an Islamic finance perspective, understanding financial behavior includes recognizing prohibited practices such as *riba* (interest). Antara et al. (2016) highlighted the importance of educating Muslims on the rationale behind the prohibition of the *riba* and the availability of Shariah-compliant alternatives. This understanding promotes ethical awareness and strengthens IFL by encouraging choices aligned with Islamic values. Similarly, Albaity and Rahman (2019) note that individuals with high IFL tend to avoid interest-based financial products and are more inclined to adopt Islamic banking services. Moreland (2018) demonstrated that individuals seeking financial advice, whether from professionals or informed peers, tend to exhibit higher financial confidence and literacy. This finding supports the view that financial behavior is shaped not only by individual habits, but also by proactive engagement with knowledgeable sources.

Huston (2010) posits that financial literacy, including IFL, enhances financial decision making, leading to better outcomes in saving and budgeting. Pala et al. (2023) further argue that incorporating Islamic financial practices into daily routines can improve attitudes toward Islamic banking products, reinforcing positive financial behavior. In this regard, Investec (2022) suggests that individuals who take ownership of their finances are more likely to explore Shariah-compliant investment opportunities, demonstrating how proactive financial behavior contributes to stronger IFL.

2.2 Digital literacy and its role in enhancing IFL

Digital literacy refers to the ability to confidently and critically use digital technologies for information access, communication, and problem solving in various aspects of life (UNESCO, 2022). In Islamic finance, digital literacy plays an increasingly critical role in empowering individuals to explore, understand, and engage with Shariah-compliant financial products and services. Aziz et al. (2023) find that individuals with high digital literacy are more likely to use Islamic fintech applications, thereby increasing their exposure to Islamic financial instruments. As digital platforms expand their offerings, they have become vital tools in disseminating financial education, especially Islamic finance (Muhammad Zikry Hishamudin et al., 2024).

Zulfaka and Kassim (2023) emphasized the influence of digital channels on financial decision-making, asserting that accessible digital tools promote financial inclusion and literacy. Similarly, Setiawan et al. (2020) demonstrated that digital financial literacy, which includes digital knowledge, experience, skills, and awareness, positively influences financial behavior among

Jordanian millennials, reinforcing the link between digital competence and IFL. Choung et al. (2023) noted that individuals with stronger digital skills navigate financial applications and online banking platforms more efficiently, contributing to improved financial well-being. Kumar et al. (2023) echoed this, arguing that Internet-savvy individuals can more effectively access and understand a wide range of financial information, resulting in higher overall financial literacy levels.

Golden and Cordie (2022) argued that technological advancements offer new and effective avenues for financial learning, particularly for simplifying complex Islamic finance concepts. However, Dewi et al. (2022) cautioned that many individuals lack the digital and financial skills necessary to benefit from these online services, thereby limiting their engagement with Islamic finance. InfoPro (2023) added that digital exclusion remains a barrier, particularly in rural communities where internet access and digital device ownership are limited. These structural limitations hinder broader access to Islamic financial services, highlighting the need for targeted initiatives to bridge this digital divide. In summary, digital literacy enhances an individual's ability to access and interact with Islamic financial services. However, disparities in access and skills must be addressed to ensure that digital platforms effectively contribute to raising Islamic financial literacy levels across all segments of society.

2.3 Financial socialization and the development of IFL

Financial socialization refers to the process through which individuals acquire financial knowledge, skills, and attitudes from various social agents, including families, peers, educators, and religious leaders. This process plays a vital role in shaping Islamic Financial Literacy (IFL), especially among the youth. Asadi et al. (2024) emphasized the role of families as primary agents of financial education, where children observe and learn about budgeting, saving, and ethical consumption. Financial communication at home, such as parental guidance and role modeling, significantly influences financial literacy outcomes. Ullah and Yusheng (2020) found that children who received financial guidance from their parents demonstrated higher levels of financial knowledge and were more likely to adopt responsible financial behaviors.

Khalisharani et al. (2022) noted that regular discussions between family members about financial matters enhances transparency and strengthens financial decision-making habits. These interactions are particularly important for shaping young adults' understanding of Islamic financial principles. Peer influence also plays a crucial role. According to Yanto et al. (2021), interactions through social media and peer groups contribute to awareness of halal investing and other Islamic finance practices. Ahmed (2023) supported this by highlighting that peer-to-peer learning improves students' comprehension of Shariah-based financial decisions, especially when such discussions occur in educational or work settings. Ambuehl et al. (2018) observed that individuals who actively engage in financial conversations, even when they lack expertise, tend to improve their financial decision-making abilities. However, Ahn et al. (2024) cautioned that peer influence can have both positive and negative effects; while some peers may promote responsible financial behavior, others may encourage overspending or risky investments through social normalization.

Tarver (2023) emphasized that Muslims often seek financial guidance from religious scholars or family members to ensure compliance with Islamic teachings when making major financial decisions. Hidajat and Hamdani (2017) concluded that individuals who consult religious figures or trusted family members are more likely to make ethical and informed choices that are consistent with Islamic values. Overall, financial socialization serves as a crucial bridge between knowledge and practice. By fostering environments in which financial discussions are normalized, whether at home, in school, or within communities, individuals are better positioned to understand and apply Islamic financial principles.

2.4 Demographic characteristics

Demographic factors play a pivotal role in shaping the IFL levels. Md.Sapir @ Md.Shafik and Wan Ahmad (2020) found that social contexts and individual characteristics, such as gender, age, and education, significantly influenced IFL outcomes across Muslim and non-Muslim populations. Notably, sex remains a widely discussed determinant. Anshika et al. (2021) observed that men typically exhibit higher financial literacy, possibly because of greater exposure to financial discussions and investment decision-making. However, Nasyietah and Harena (2023) reported a contrasting trend in Malaysia, in which 82.69% of women outperformed men in IFL assessments, particularly among educated female respondents. This finding suggests that educational attainment may mediate the gender gap in financial literacy.

Age is another influential factor. Hisan (2019) found that younger university students tended to score higher on financial literacy assessments, potentially because of their immersion in academic environments that promote financial awareness. In contrast, Dewi et al. (2022) noted that older respondents generally exhibit greater financial literacy, possibly because of accumulated life experiences and practical exposure. This discrepancy highlights the importance of contextual variables such as education level and lifestyle. Klapper et al. (2013) emphasized the value of formal education in enhancing financial literacy, noting that individuals with financial education are better equipped to manage risk and make informed decisions. Kevser and Doğan (2021) consistently linked IFL with years of education, underscoring that those with advanced academic backgrounds have a deeper understanding of Shariah-compliant financial instruments.

Harun et al. (2024) reinforced this by identifying education as a key factor in students' grasp of Islamic finance, with higher academic attainment correlating with a better IFL. Work experience also contributes significantly; Kaur (2023) reported that students with part-time or full-time work experience demonstrated better financial decision-making capabilities. Additionally, students exposed to ethical financial environments through employment opportunities tend to develop a stronger comprehension of Islamic finance principles (Norzitah Abdul Karim et al., 2023).

These findings from prior studies underscore the relevance of demographic characteristics, specifically age, gender, education level, field of study, and work experience, as important factors influencing IFL. They provided a strong rationale for examining these variables in the current study, especially within the Malaysian university context.

3. Methods

This study adopted a quantitative research design to investigate the determinants of IFL among university students in Malaysia. A pilot study involving 40 participants was conducted prior to the full data collection. The pilot study aimed to evaluate the survey's clarity and reliability. All constructs were measured on a five-point ordinal scale ranging from 1 (Very Low) to 5 (Very High). This scaling approach supports the use of ordinal logistic regression for inferential analyses. IFL was measured using a combination of objective knowledge-based questions and self-reported perception items. For example, objective questions included multiple-choice items assessing knowledge of *riba* (interest), *zakat* obligations, and Islamic banking concepts, such as *Mudarabah* and *Takaful*. Perception-based items asked respondents to rate statements such as "I am confident in identifying Shariah-compliant financial products" or "I can explain the difference between conventional and Islamic savings accounts."

The independent variables were assessed using multiple Likert-scale statements. For financial behavior, items included statements like "I consistently set aside part of my income for savings" and "I track my monthly expenses regularly." Digital literacy was measured using items such as "I am confident in using mobile applications for financial transactions" and "I can distinguish legitimate online financial platforms from scams." Financial socialization was captured using

statements such as “My parents discuss financial topics with me” and “I often talk with peers about Islamic financial matters.”

3.1 Samples

Data were collected through a structured online survey administered using Google Forms. The survey instrument comprises several sections covering demographic characteristics, financial behavior, digital literacy, financial socialization, and knowledge of Islamic finance. To ensure representative sampling, stratified random sampling was employed, targeting students from various public universities. The online survey link was disseminated through official university mailing lists and academic WhatsApp and Telegram groups with the assistance of student representatives and faculty coordinators. These channels were selected to ensure broad and diverse participation, while maintaining institutional credibility. As of 2022, Malaysia has approximately 282,000 male and 405,000 female students enrolled in public higher education institutions (Siddharta, 2024). Using Slovin’s formula, a minimum sample size of 384 was calculated to ensure a 95% confidence level with a 5% error margin. A total of 394 valid responses were successfully collected between October and December 2024, which met the required threshold for statistical analysis.

The demographic profiles of the respondents provided a critical context for interpreting the study’s findings. As shown in Table 1, the sample comprised 394 university students, with a nearly even gender distribution—50.8% male and 49.2% female—ensuring gender-balanced insights into Islamic Financial Literacy (IFL). This demographic spread ensures diverse representations across academic disciplines and work backgrounds, which is vital for analyzing variations in IFL.

Table 1: Demographic distribution of respondents (N=394)

| Variables | Categories | Percentage |
|--------------------|-----------------------------|------------|
| Gender | Male | 50.8% |
| | Female | 49.2% |
| Age | 18 - 20 years old | 26.9% |
| | 21 - 23 years old | 60.2% |
| | 24 - 26 years old | 6.8% |
| | 27 years old or above | 6.1% |
| Year of study | Foundation/Pre-University | 9.6% |
| | Undergraduate (1st year) | 13.2% |
| | Undergraduate (2nd year) | 21.6% |
| | Undergraduate (3rd year) | 21.1% |
| | Undergraduate (4th year) | 25.6% |
| Field of Study | Postgraduate (Master’s/PhD) | 8.9% |
| | Finance/Business | 33.0% |
| | Sciences/Comp. Sciences | 25.9% |
| | Engineering | 8.6% |
| | Art Study | 11.4% |
| | Islamic Studies/Law | 15.5% |
| Working Experience | Others | 5.6% |
| | No experience | 10.9% |
| | Full Time | 31.7% |
| | Part Time | 40.6% |
| | Internship | 3.8% |
| | More than 1 experience | 12.9% |

3.2 Data reliability

A reliability test was conducted using Cronbach’s alpha to ensure internal consistency of the survey instrument. A Cronbach’s alpha value ≥ 0.70 is considered acceptable, with values ≥ 0.90 indicating excellent reliability, is considered acceptable (Tavakol & Dennick, 2011). As shown in Table 2, the results confirmed that the items used in the questionnaire reliably measured the constructs of interest. These findings confirm that each group of items measuring the respective constructs has satisfactory to excellent internal consistency. The IFL scale shows very strong reliability, ensuring confidence in the consistency of responses related to the knowledge and understanding of Shariah-compliant financial practices. The other variables also demonstrated good reliability, supporting their use in further analysis.

The mean scores suggest that students generally perceived themselves as having moderate levels of Islamic financial literacy, financial behavior, and financial socialization, while digital literacy scored the highest among all four constructs. The mean score (3.58 IFL suggests that most students consider their literacy level to be average or slightly above average. However, the presence of low and high extremes (1 to 5) implies substantial variation, warranting further investigation through a regression analysis. Digital literacy recorded the highest mean (3.65), indicating that students are relatively confident in their digital capabilities, a promising sign given the increasing reliance on digital platforms in Islamic finance. By contrast, financial behavior and socialization hovered closer to the mid-range, suggesting the need for more targeted interventions in these areas to enhance financial outcomes.

Table 2. Cronbach’s Alpha Test

| Variables | Number of Items | Mean | Std. Dev. | Cronbach’s Alpha | Interpretation |
|----------------------------|-----------------|------|-----------|------------------|----------------|
| Islamic Financial Literacy | 8 | 3.58 | 0.90 | 0.931 | Excellent |
| Financial Behavior | 6 | 3.55 | 0.82 | 0.729 | Acceptable |
| Digital Literacy | 7 | 3.65 | 0.91 | 0.811 | Good |
| Financial Socialization | 6 | 3.60 | 0.91 | 0.873 | Very Good |

4. Results

The data analysis was conducted in two phases. The first phase examined the association between demographic variables and IFL using the chi-square test. The second phase analyzed the influence of financial behavior, digital literacy, and financial socialization on IFL.

4.1 Chi-square test

To examine the association between the demographic variables and Islamic Financial Literacy, a Chi-square test was conducted. This non-parametric test determines whether statistically significant relationships exist between categorical variables. Prior to the analysis, respondents’ IFL levels were categorized into five groups based on their overall mean scores from the Islamic Financial Literacy questionnaire: Very Low (1.00 – 1.8), Low (1.81 – 2.60), Moderate (2.61 – 3.40), High (3.41 – 4.20), and Very High (4.21 – 5.00). As presented in Table 3, 73 respondents were classified under “very high” IFL category. Four demographic variables were found to be significant in relation to IFL: age ($p < 0.001$), year of study ($p < 0.001$), field of study ($p < 0.001$), and work experience ($p = 0.009$). Although gender differences were observed, with slightly more female students in the “Very High” IFL group, this difference was not statistically significant ($p = 0.810$). Age showed a statistically significant association with IFL ($p < 0.001$), with students aged 21–23 years dominating the high IFL category. Academic year also proved significant ($p < 0.001$), with final-year undergraduates showing the highest representation in the very high IFL group. Work experience was significantly associated with higher IFL levels ($p = 0.009$). Students with

part-time or full-time work experience reported stronger practical insights and awareness of financial decision-making processes.

Table 3. Results of chi-square test

| Demographic Factors | Highest Frequency Group | % Within Group | Chi-Square (<i>p</i> -value) |
|---|-------------------------|----------------|-------------------------------|
| Sex: Female | 38 | 52% | 0.810 |
| Age: 21 – 23 years old | 52 | 71% | 0.000*** |
| Year of study: Undergraduate (4th year) | 24 | 33% | 0.000*** |
| Field of Study: Finance/Business | 69 | 95% | 0.000*** |
| Work experience: Yes | 71 | 97% | 0.009*** |

***significant at 1%

4.2 Regression analysis

This section addresses the second research objective: to determine the influence of financial behavior, digital literacy, and financial socialization on Islamic Financial Literacy (IFL). The Ordinal Logistic Regression (OLR) model was employed because of the ordinal nature of the dependent variable, which ranged from 1 (Very Low) to 5 (Very High).

To ensure the robustness of the regression analysis, multicollinearity among the independent variables was examined using the Variance Inflation Factor (VIF). Multicollinearity occurs when two or more predictors in a regression model are highly correlated and can distort the estimated effects of the variables. All three predictors recorded VIF values between 2.08 and 2.88, which fall within the acceptable range of 1 to 5, as suggested by Singh (2024). These values indicate moderate multicollinearity, implying some correlation among predictors but not enough to jeopardize the reliability of the model. As shown in Table 4, the *R*-squared values further highlight each variable's unique contribution: (i) Financial Behavior explains 65.3% of the variance, (ii) Digital Literacy accounts for 64.4%, and (iii) Financial Socialization explains 51.9%. These findings support the inclusion of all three variables in the regression model, confirming that multicollinearity is not a concern in this analysis.

An Ordinal Logistic Regression (OLR) model was employed to evaluate the influence of the three main determinants, specifically financial behavior, digital literacy, and financial socialization, on IFL. Given that the dependent variable (IFL) is ordinal with five categories, OLR is appropriate to model the cumulative probabilities across ordered categories.

$$\log \frac{P(Y \leq j)}{P(Y > j)} = \tau_j + (\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3) \quad (4)$$

Where,

Y = Islamic Financial Literacy Level

τ_j = Intercept for threshold *j*

X_1 = Financial Behaviour

X_2 = Digital Literacy

X_3 = Financial Socialization

β_1 = Coefficient for Financial Behaviour

β_2 = Coefficient for Digital Literacy

β_3 = Coefficient for Financial Socialization

The significance of each coefficient was tested at $p < 0.05$.

The OLR results indicate that all three predictors are statistically significant at the 1% level, suggesting a strong influence on IFL. The coefficients imply that: (i) a one-unit increase in financial behavior raises the log-odds of being in a higher IFL category by 0.5961; (ii) a one-unit

increase in Digital Literacy increases the log-odds by 1.0570; and (iii) a one-unit increase in financial socialization results in the largest increase in log-odds at 1.7829. These results highlight financial socialization as the most influential predictor, followed by Digital Literacy and Financial Behavior. The threshold estimates represent the cumulative cut-off points between the IFL categories. For example, a respondent with a predicted score above 15.6711 is likely to fall into the Very High IFL category. The consistently significant *p*-values confirmed the robustness of the model.

Table 4: OLR results

| Variable | OLR | | | Multicollinearity test | |
|--|-----------------------|------------|-----------------|------------------------|-----------------|
| | Coefficients | | <i>p</i> -value | <i>R</i> ² | VIF |
| Financial behavior | 0.5961 | | 0.007*** | 0.6531 | 2.8828 |
| Digital literacy | 1.0570 | | 0.000*** | 0.6440 | 2.8086 |
| Financial socialization | 1.7829 | | 0.000*** | 0.5193 | 2.0801 |
| Threshold estimates for IFL categories | | | | | |
| Threshold | Estimate | | <i>p</i> -value | | |
| 1 | 3.8799 | | 0.000*** | | |
| 2 | 8.0008 | | 0.000*** | | |
| 3 | 12.3433 | | 0.000*** | | |
| 4 | 15.6711 | | 0.000*** | | |
| Brant test results | | | | | |
| | <i>X</i> ² | df | <i>p</i> -value | | |
| Omnibus | 27.07 | 9 | 0.000*** | | |
| Financial Behavior | 4.82 | 3 | 0.19 | | |
| Digital Literacy | 16.85 | 3 | 0.000*** | | |
| Financial Socialization | 5.05 | 3 | 0.17 | | |
| Likelihood test results | | | | | |
| Model | Residual df | Deviance | df | <i>X</i> ² | <i>p</i> -value |
| Null Model | 390 | 10000.1230 | - | - | - |
| Full Model (GOLM) | 387 | 601.8296 | 3 | 398.2935 | 0.000*** |
| AIC | 615.8296 | | | | |

***significant at *p*<1%

The regression equations for each threshold (*j* = 1 to 4) are:

$$\log \frac{P(Y \leq j)}{P(Y > j)} = \tau_j + (0.5961 \text{ (Financial Behaviour)} + 1.0570 \text{ (Digital Literacy)} + 1.7829 \text{ (Financial Socialization)}) \quad (6)$$

Where:

- τ_j represents the threshold estimates,
- *Y* is the IFL category (1 to 5),
- and the coefficients represent the strength of the predictors.

These results support the conclusion that all three independent variables—Financial Behavior, Digital Literacy, and Financial Socialization—have a statistically significant and positive relationship with Islamic Financial Literacy. The Brant Test was used to assess whether the proportional odds assumption of the OLR model holds true. This test checks whether the effect of each predictor variable remains constant across the ordinal outcome thresholds. The test results indicated a violation of the odds assumption of the OLR model (*p* < 0.05). A significant omnibus *p*-value (*p* = 0.000) indicates that at least one variable violates the proportional odds assumption. Specifically, Digital Literacy shows a clear violation (*p* = 0.000), while financial behavior and socialization do not (*p* > 0.05). Given this violation, this study proceeds with a generalized ordinal logistic regression model (GOLM) to allow the effects of Digital Literacy to vary across thresholds.

While the Ordinal Logistic Regression (OLR) model is useful for analyzing ordinal outcome variables, it relies on the assumption that the relationship between predictors and the outcome is consistent across all thresholds, known as the proportional odds assumption. However, this assumption does not always hold in practice. In this study, the Brant Test revealed that digital literacy violated this assumption, meaning that its influence on Islamic financial literacy varied across different levels. To address this issue, this study employed the Generalized Ordinal Logistic Model (GOLM), which allows the effect of predictors to differ across thresholds. In simpler terms, GOLM offers a more flexible and realistic approach by recognizing that factors such as digital literacy might have a stronger impact when moving from moderate to high literacy than when moving from low to moderate. This enhances the model’s accuracy and provides nuanced insights into how each variable influences financial literacy levels.

When the Brant Test indicated a violation, the study applied the generalized ordinal logistic regression model (GOLM) to relax the proportional odds assumption. This model allows predictor effects to vary across thresholds, providing a better fit when variable effects are non-uniform.

$$\log \frac{P(Y \leq j)}{P(Y > j)} = \tau_j + (\beta_{1j}X_1 + \beta_{2j}X_2 + \beta_{3j}X_3) \tag{5}$$

Where coefficients β_{1j} may vary across thresholds

While the Ordinal Logistic Regression (OLR) model is useful for analyzing ordinal outcome variables, it relies on the assumption that the relationship between predictors and the outcome is consistent across all thresholds, known as the proportional odds assumption. However, this assumption does not always hold in practice. In this study, the Brant Test revealed that digital literacy violated this assumption, meaning that its influence on Islamic financial literacy varied across different levels. To address this issue, this study employed the Generalized Ordinal Logistic Model (GOLM), which allows the effect of predictors to differ across thresholds. In simpler terms, GOLM offers a more flexible and realistic approach by recognizing that factors such as digital literacy might have a stronger impact when moving from moderate to high literacy than when moving from low to moderate. This enhances the model’s accuracy and provides nuanced insights into how each variable influences financial literacy levels.

GOLM provides greater flexibility by relaxing the proportional odds assumption, offering a more accurate estimation of how each predictor influences different levels of Islamic Financial Literacy.

$$\log \frac{P(Y \leq j)}{P(Y > j)} = \tau_j + \beta_{1j}(\text{Financial Behavior}) + \beta_{2j}(\text{Digital Literacy}) + \beta_{3j}(\text{Financial Socialization}) \tag{7}$$

This model accommodates non-proportional effects, particularly Digital Literacy, which shows a threshold-dependent influence on IFL levels. This approach enhances model fit and ensures valid inference, especially when predictors have nonuniform impacts across response categories.

To confirm the superiority of the full model over the null model, we conducted a Likelihood Ratio Test. A significant result ($p < 0.01$) supports the inclusion of predictors in explaining the variation in IFL. The test was conducted between the null model (with no predictors) and full model (including all three predictors). The highly significant p-value ($p < 0.001$) confirmed that the full model provided a substantially better fit than the null model. The Akaike Information Criterion (AIC) value of 615.83 also supports model adequacy, with lower AIC values indicating an improved fit. Overall, the statistical results confirm that Financial Behavior, Digital Literacy, and

Financial Socialization are significant predictors of Islamic Financial Literacy. GOLRM addresses the violation of proportional odds and offers deeper insights into how these predictors influence IFL across different categories. These findings provide meaningful evidence to inform targeted strategies to enhance Islamic financial education among university students.

5. Conclusion

This study presents a comprehensive examination of Islamic Financial Literacy (IFL) among university students in Malaysia, highlighting the influence of demographic factors, financial behavior, digital literacy, and financial socialization. The results confirm that these variables significantly affect students' understanding and application of Shariah-compliant financial knowledge. Specifically, students aged 21–23 years, those enrolled in Finance or Business programs in their final academic year, and those with work experience exhibited higher levels of IFL. These findings emphasize the synergistic effect of academic exposure and real-world experience in shaping financial competence. This finding mirrors Handayani et al. (2021), who noted that youths in this age range exhibit high financial awareness due to greater exposure to technology and formal education environments.

Academic year also proved significant, with final-year undergraduates showing the highest representation in the very high IFL group. This supports the findings of Nurul et al. (2023), who suggest that prolonged academic exposure to financial content enhances students' grasp of Islamic finance principles. As expected, the field of study had a significant influence. Students majoring in Finance or Business constituted 95% of the high IFL group, demonstrating that exposure to financial subjects directly correlates with improved Islamic financial understanding (Saputra & Rahmatia, 2021).

Work experience was significantly associated with higher IFL levels. Students with part-time or full-time work experience reported stronger practical insights and awareness of financial decision-making processes, which is consistent with the findings of Albaity and Rahman (2019). These results reinforce that age, field of study, academic year, and work experience are significant IFL determinants. Although gender differences were not statistically significant, educational initiatives should promote inclusive engagement strategies to enhance financial literacy across all student demographics.

Contrary to the traditional assumption that men are more financially literate, this study finds no significant gender disparity. Female students, particularly those with robust educational foundations, demonstrated equal, if not greater, financial competence, echoing the findings of Tranfaglia et al. (2024) and underscoring the importance of gender-inclusive initiatives in financial education. Furthermore, students who demonstrated strong financial behavior, such as budgeting, saving, and responsible spending, were more likely to exhibit higher IFL, reinforcing Bai's (2023) argument that disciplined financial habits are foundational to long-term financial well-being.

Digital literacy has emerged as a critical enabler of IFL, particularly in the current fintech ecosystem. Students who are digitally proficient are more adept at accessing and applying Islamic financial tools, aligning with Nurul'ain et al. (2024), who emphasized that digital competence enhances both access to and comprehension of complex Islamic finance principles. Additionally, financial socialization through family, peers, and community settings emerged as a powerful influencer, consistent with Yeni et al. (2023), who highlighted that value-based financial learning fosters alignment with Maqasid al-Shariah and ethical financial decision making.

Beyond universities and policymakers, this study recognizes the potential role of a wider network of stakeholders in advancing IFL. Commercial and Islamic banks can support this agenda by co-developing digital learning hubs, offering student-centered Shariah-compliant financial products,

and sponsoring nationwide campaigns targeting youth financial awareness. Islamic Consumer Associations can lead educational outreach programs that demystify Islamic financial principles for the public. JAKIM, as the national authority on Islamic matters, can play a pivotal role in ensuring that the content and pedagogy of IFL modules are aligned with Shariah's integrity, especially in collaboration with universities and fintech platforms.

By fostering multistakeholder collaboration across academia, industry, religious bodies, and civil society, Malaysia can cultivate a digitally fluent, ethically grounded, and financially resilient generation. Future initiatives that embed these collaborative strategies and build upon this study's insights will be instrumental in elevating Islamic Financial Literacy and ensuring its relevance in diverse educational and socioeconomic contexts.

5.1 Implications and recommendations

This study highlights the multifaceted nature of IFL and emphasizes the need for targeted inclusive strategies within the university ecosystem. Institutions of higher learning are encouraged to adopt a holistic approach that fosters responsible, ethical, and Shariah-compliant financial decision making among students. These efforts should encompass the integration of financial behavior education into formal curricula, embedding digital financial components into Islamic finance modules, and promoting peer- and family driven financial socialization initiatives. Such interventions not only provide theoretical insights but also cultivate real-world financial competencies grounded in Islamic values. To operationalize these insights, the following practical action plan is recommended for educators, policymakers, and financial institutions: (i) introduction of Islamic financial literacy topics across disciplines, especially for non-finance students; (ii) creation of interactive mobile applications or e-learning platforms with gamified Shariah-compliant financial content; (iii) promotion of peer mentorship and family engagement campaigns to strengthen financial socialization; (iv) partnership with Bank Negara Malaysia, fintech developers, and zakat/waqf bodies to co-design faith-based learning modules; and (v) implementation of tracking systems to monitor students' progress and identify those needing targeted support or guidance.

The findings of this study are also policy-relevant at both the national and institutional levels. Policymakers such as Bank Negara Malaysia and the Ministry of Higher Education can use these insights to develop inclusive financial literacy frameworks tailored to different demographic groups. Universities can enhance classroom engagement by embedding digital simulations of Islamic financial tools and encouraging scenario-based learning. Islamic fintech developers are encouraged to design platforms that incorporate the behavioral cues revealed in this study, making Shariah-compliant financial services more relatable and accessible to the youth. By aligning digital innovation with Islamic financial education and leveraging students' social ecosystems, Malaysia can cultivate a digitally fluent and ethically conscious generation prepared to manage financial challenges in accordance with Maqasid al-Shariah.

5.2 Limitations and future research

While this study provides meaningful contributions to the understanding of IFL among university students in Malaysia, several limitations must be acknowledged to contextualize its findings and guide future research. First, it employed a cross-sectional design to capture responses at a single point in time. While this design allows the identification of associations between variables, it limits the ability to determine causality or track changes in the IFL over time. As students progress through different academic years, gain exposure to financial tools, or encounter real-life financial decisions, their literacy levels and behaviors may shift. Therefore, longitudinal research designs are recommended to observe the evolution of IFL and assess the long-term effectiveness of financial education interventions on students' financial behaviors and post-graduation outcomes.

Second, the sample was restricted to students from public universities, which introduced a potential sampling bias. The exclusion of students from private universities, community colleges, and other institutions may limit the generalizability of the findings. Students from diverse educational backgrounds may have varying exposures to Islamic finance content, different socio-economic influences, and distinct digital learning environments, all of which could affect their financial literacy levels. Future research should include a broader range of student populations to enhance the representativeness and external validity of the findings. Third, the study relied on self-reported data, particularly in the measurement of constructs such as financial behavior and socialization. This method may be subject to social desirability bias or overestimation of knowledge levels. Future studies could complement survey findings with objective assessments or behavioral data, where possible.

Finally, while this study focuses on university students, it does not address how IFL develops in the earlier or later life stages. Future investigations could explore Islamic financial literacy across different age groups, professions, or geographic regions to provide a more comprehensive understanding of how literacy gaps form and can be addressed throughout life. By addressing these limitations through diversified sampling, longitudinal tracking, and more robust methodologies, future research can build on this foundation to deepen insights into Islamic financial literacy and inform more targeted, scalable solutions.

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Ethical compliance: All participants were fully informed about the nature, purpose, and procedures of the study. Participation was voluntary and informed consent was obtained from each participant prior to their participation in the study. Participants were made aware of their right to withdraw from the study at any point, without any consequences.

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