Cuadernos de Economía (2024) Volume 47, Issue 133, 61-72

Asociación Cuadernos de economía

Cuadernos de economía

www.cude.es

ARTÍCULO

Exploring Financial Behaviours in Islamic Banking: The Role of Literacy and Self-Efficacy Among Jakarta's Bank Customers

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Jel Codes:

Keywords:
Financial Literacy, Islamic Banking, Financial Self-Efficacy, Risky Financial Behaviours, Subjective Financial Literacy, Objective Financial Literacy

Abstract
It is crucial to comprehend the customer behaviour in Islamic banks in Indonesia due to the country's highly promising market. This study examines the effects of financial literacy, self-efficacy, and financial behaviour on debtors of Islamic banks in Jakarta, Indonesia. This study investigates the complex connection between subjective financial literacy (SFL), objective financial literacy (OFL), financial self-efficacy (FSE), financial skills (FSK), financial stress (FS), and risky paying behaviour (RPB) and risky borrowing behaviour (RBB). Using a quantitative methodology, information was gathered from 312 customers of Islamic banking through a well-organized survey and examined using SmartPLS. The findings revealed that SFL played a significant role in influencing FSE, while OFL did not have a notable impact on FSE. In addition, FSE has a significant impact on RPB, while RBB remains unaffected. The study also uncovers the adverse interaction effects of FSK with SFL on FSE and the influence of FS on RPB and RBB. These findings have important implications for Islamic banks and policymakers, highlighting the importance of customised financial literacy programmes to improve SFL, OFL, and FSE. The study's limitations and potential areas for future research involve expanding the geographic scope and investigating the impact of digital financial services on Islamic banking.

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https://doi.org/10.32826/cude.v47i133.1307

Introduction

On February 1, 2021, Indonesia successfully strengthened its presence in the Islamic banking sector by merging three state-owned Islamic banks: Bank Syariah Mandiri, BRI Syariah, and BNI Syariah (Bank Syariah Indonesia, 2021). This merger brought about a notable change in the country's banking industry and was driven by the goal of enhancing the reputation of Islamic banking in both the domestic and international financial arenas. In comparison to other Muslim-majority countries, Indonesia has a relatively low Islamic banking penetration rate of around 7% (Pratama, 2023). This presents a challenge and an opportunity to expand the sector's reach and impact, especially when we consider the higher penetration rates seen in countries like Malaysia and those in the Middle East (Janah, Medias, & Pratiwi, 2020).

The perceived drawback of Islamic banking in Indonesia, in comparison to the conventional banking industry, is often attributed to a lack of financial knowledge and participation in the Islamic finance sector (Hutapea & Kasri, 2010; Pepinsky, 2013). Efforts to enhance financial literacy and inclusion have faced challenges, leading to a prevailing preference among the financially knowledgeable portion of the population for traditional banking. The unique business model of Islamic banking, which avoids interest in favour of profit-sharing and sales transactions, has been presented as a more equitable and morally sound alternative to traditional banking practices (Almaida et al., 2024; Yusuf et al., 2024).

The dynamic relationship between financial literacy and technological advancements in Indonesia's fast-paced Islamic banking sector poses both challenges and opportunities for debtors (Alhammadi, 2023). The rapid growth of financial products and services, especially due to the rise of Fintech startups, has greatly reshaped the banking industry (Alt, Beck, & Smits, 2018). This transformation calls for a heightened comprehension of financial literacy among consumers, particularly those involved in Islamic banks. Given the current state of the global economy, it has become increasingly important for consumers to possess a strong understanding of financial matters. This is because the availability of financial products and services has expanded significantly, leading to more complex financial choices (Bannier & Schwarz, 2018). Researchers and policymakers have been placing a strong emphasis on improving financial literacy to address detrimental financial behaviours and promote beneficial financial habits (Finra Foundation, 2013; OECD, 2005; Tang & Baker, 2016; Xu & Zia, 2012).

Individuals who possess limited knowledge about personal finance and tend to "buy now, pay later" without considering the long-term consequences may face difficulties in managing their debts and planning for their financial future. This is supported by research conducted by Pahlevan Sharif & Yeoh (2018) and Lusardi, Mitchell, & Curto (2009). Insufficient knowledge about finances can result in making poor financial choices and struggling to cope with unexpected economic challenges, as highlighted by previous research (Fahlevi et al., 2019; Hung, Parker, & Yoong, 2009). According to research by Lusardi (2012b) and Grohmann (2018), there is a direct link between increased financial literacy and improved financial decision-making abilities, as well as a greater capacity to save, spend, invest, and borrow. As Chen & Volpe (1998) and Lusardi (2012a) point out, a lack of financial knowledge can restrict one's ability to make informed decisions. In a study conducted by Chijwani & Vidyapeeth (2014), it was found that a lack of knowledge in financial matters can result in making unwise financial choices, which can have negative consequences for one's personal finances. Research has indicated that individuals who possess a strong understanding of financial matters are more likely to make well-informed choices regarding their finances. Enhancing financial literacy can also assist individuals in reaching their financial objectives, such as making prudent decisions about saving and spending money. Nevertheless, Garg & Singh (2018) discovered that the level of financial literacy among young individuals globally remains alarmingly low, raising concerns. In a recent study conducted by Yakoboski et al. (2019), it was discovered that individuals who possess a strong understanding of financial matters are better equipped to navigate unexpected financial challenges, consistently save for their retirement, and steer clear of accumulating debt.

Recent studies have highlighted the importance of financial self-efficacy (FSE) in influencing financial behaviours, including risky paying behaviour (RPB) and risky borrowing behaviour (RBB). Research conducted by Cude, Chatterjee, & Tavosi (2020) and Mindra et al. (2017) highlights the significance of FSE in shaping financial behaviours. Cude et al. (2020) emphasises its adverse association with RBB. The study conducted by Anderson, Baker, & Robinson (2017) found that people's subjective financial literacy (SFL), specifically their confidence, is a more accurate indicator of their saving behaviour compared to their objective financial literacy (OFL), which measures their competence. This finding is supported by Seay & Robb (2013), who discovered that OFL is negatively associated with high-cost RBB. According to Singh et al. (2019) and Mindra et al. (2017), both studies indicate that FSE plays a role in connecting financial literacy and financial behaviour.

The prevalence of online loans and soaring non-performing loans (NPLs) leading to fraud underscores the need for further research in this area. This surge can be attributed to the convenience provided by online platforms, the absence of strict regulations, and the limited financial knowledge among borrowers. Conventional banks, bound by strict requirements and time-consuming approval procedures, find it challenging to address the immediate and smaller borrowing requirements of a substantial portion of the population (Marhaeni, Yasa, & Fahlevi, 2022; Sahabuddin et al., 2023; Yusuf et al., 2023). The thriving online loan industry is a result of its capacity to offer fast, convenient, and high-interest loans. Promoting financial literacy through educational initiatives and implementing regulatory measures to ensure transparency in lending practices are crucial steps in empowering individuals to make informed borrowing decisions (Adri et al., 2021; Janudin, Warasto, & Lestari, 2023), potentially reducing non-performing loans and fraudulent activities while promoting a stronger lending ecosystem. Thus, to address the knowledge gaps, this study puts forth a social cognitive theory (SCT). This theory proposes that individuals establish a sense of control and influence in their lives through various means, such as self-regulation and comparing themselves to others (Schunk, 2012). The theory covers various important motivational processes, including goal setting, self-evaluations, outcome expectations, values, and self-efficacy (Schunk, 2012).

This study seeks to examine the factors that impact debtors' RPB and RBB in the Islamic banking sector in Indonesia, given recent developments. The study focused on analysing the effects of various factors on RPB and RBB. The findings offer valuable insights for stakeholders, including Islamic banks and regulatory bodies, to formulate strategies that encourage responsible borrowing and address the risks associated with these emerging financial technologies.

Literature Review

Social Cognitive Theory (SCT)

As per Bandura's (1977) definition, SCT highlights the importance of the interplay between behavioural, social/environmental, and personal factors (Bandura, 1977;

Schunk, 2012). As per Schunk's research in 2012, this theory proposes that individuals develop a sense of control over their lives through different methods, such as self-regulation and comparing themselves to others. This theory covers various important motivational processes, including setting goals, self-evaluations, outcome expectations, values, and self-efficacy. Self-efficacy has a crucial impact on motivation and affects the choices we make, the effort we put in, our ability to keep going, and ultimately, our performance (Schunk, 2012). The theory has been widely used in various fields, including information science research. It has been applied to study workplace learning, information literacy, knowledge management, and the relationship between information behaviours and innovation processes (Middleton & Hall, 2021).

Subjective Financial Literacy (SFL)

The concept of SFL pertains to individuals' comprehension, consciousness, and perspectives regarding finances. Studies have indicated that people's level of confidence in participating in various financial activities can have an influence on their behaviour in different financial scenarios (Farrell, Fry, & Risse, 2016; Robb et al., 2015). The study conducted by Anderson et al. (2017) revealed that individuals' SFL, particularly their confidence, proved to be a more reliable indicator of saving behaviour compared to their OFL, suggesting a higher level of competence. According to a study by Allgood & Walstad (2013), SFL was superior to OFL in predicting the adoption of more cost-effective credit card usage practices. Based on these assumptions, the following hypotheses were formulated:
H1: SFL influences FSE

Objective Financial Literacy (OFL)

Various studies have explored the measurement of financial literacy through empirical methods, as discussed by Huston (2010), Lusardi et al. (2009), Xiao & Porto (2017), and other researchers. OFL is related to customers' ability to understand and effectively use financial knowledge. Memory storage plays a crucial role in facilitating the retention of financial knowledge. Evaluating financial literacy involves evaluating individuals' comprehension of different facets of financial markets and products, such as numerical skills, assets, debts, savings and investments, the concept of money's worth, inflation, compound interest, and risk management (Lusardi et al., 2009). A study conducted by Singh et al. (2019) suggests that there is a link between financial literacy and behaviour, which is mediated by FSE. This finding aligns with the research conducted by Seay & Robb (2013), who found a negative correlation between OFL and high cost borrowing behaviour. However, according to Xiao's research in 2014, it was discovered that OFL has a more significant influence on RPB and RBB. Mandell & Klein (2009) discuss the effectiveness of financial literacy programmes and propose that additional factors may influence financial behaviour. Given these assumptions, the following hypotheses were formulated:
H2: OFL influences FSE

Financial Self-Efficacy (FSE)

Bandura's (1977) idea of self-efficacy describes how a person's belief in their own abilities to succeed in a particular task is linked to their self-confidence, motivation, optimism, and problem-solving abilities. In the realm of consumer credit research, FSE is frequently employed to assess individuals' understanding and assurance regarding their finances. It is the belief in one's ability to attain financial objectives, as mentioned by Lown (2012) and Mindra et al. (2017). Research suggests that individuals with a stronger sense of FSE tend to have better cognitive skills in decision-making and evaluation, leading to more precise investment choices.
FSE has been found to significantly impact financial behaviours, including RPB and RBB. A study conducted by Cude et al. (2020) and Mindra et al. (2017) emphasises the significance of financial self-efficacy (FSE) in influencing financial behaviours. Cude et al. (2020) found a negative correlation between FSE and risky financial behaviours (RBB). Gärling, Michaelsen, & Gamble (2020) provides additional support for this finding by indicating that a pessimistic outlook on borrowing, potentially influenced by FSE, can reduce the probability of borrowing. Asebedo & Seay emphasised the correlation between FSE and saving behaviour, noting its positive nature. These findings indicate that FSE has the potential to impact RPB and RBB. Given these assumptions, the following hypotheses were formulated:
H3: FSE influences RPB
H4: FSE influences RBB

Financial Skill (FSK)

According to Lusardi (2012b), it is crucial for individuals to have a solid understanding of financial skills and knowledge to successfully manage budgets, understand credit, navigate investment options, and effectively use the banking system. The lack of proficiency in these abilities often results in financial challenges. In a recent study conducted by Singh et al. (2019), it was found that there is a connection between financial literacy and behaviour, with FSE potentially playing a moderating role. This suggests that FSK may have an influence on this relationship. Amagir et al. (2020) discovered factors related to financial literacy, such as FSE, that can be impacted by FSK. Murphy (2013) and Mandell & Klein (2009) highlight the intricate connection between financial literacy, self-efficacy, and behaviour, indicating a possible moderating role for FSK. However, additional research is required to directly examine the moderating effect of FSK on these relationships. These definitions highlight the significance of having knowledge and the skill to efficiently handle financial resources. Therefore, we propose the following hypotheses:
H5: FSK moderates the relationship between SFL and FSE
H6: FSK moderates the relationship between FSE and RPB

Financial Stress (FS)

FS is an intricate and diverse concept, with multiple measures and indices created to capture its dimensions. Illing & Liu (2003) and Oet, Dooley, & Ong (2015) created FS indices for Canada and the United States, respectively, utilising various financial variables and methodologies. In their studies, Jolly et al. (1985) and Hakkio & Keeton (2009) delved into the occurrence, strength, and length of FS within agricultural businesses and the overall U.S. economy. They shed light on the possible adverse effects on economic development and emphasised the importance of comprehensive stress indicators. These studies highlight the significance of comprehending and quantifying FS, along with their potential consequences for economic stability.
According to Singh et al. (2019) and Mindra et al. (2017), FSE plays a mediating role in the relationship between financial literacy and financial behavior. This implies that individuals with higher financial literacy are more likely to engage in positive financial behaviors when they have greater confidence in their financial management skills. Murphy (2013) contributes to this by emphasising the importance of financial satisfaction in relation to financial literacy, while Lim et al. (2014) underscore the role of FSE in influencing the relationship between FS and help-seeking behaviour. These findings indicate that there is a potential for FS to influence the connections between SFL, OFL, FSE, RPB, and RBB. However, additional research is required to directly examine

these moderating effects. Therefore, the following hypothesis was formulated:
H7: FS moderates the relationship between FSE and RBB

Risky Paying Behaviour (RPB)

Lyons (2008) and Abrantes-Braga & Veludo-de-Oliveira (2020) emphasise the widespread occurrence of RPB, especially among college students and individuals burdened with significant debt. In a recent study by Schmidt et al. (2021), they delve deeper into this topic and discover an interesting finding. It appears that the method of payment can have an impact on individuals' risk-taking behaviour. Specifically, participants tend to make riskier decisions when they are paid out for all trials. These studies highlight the importance of providing effective financial education and support, especially for marginalised communities, to address RPB.

Risky Borrowing Behaviour (RBB)

Various elements contribute to RBB. In their study, Cude et al. (2020) discovered that factors like financial knowledge and certain personality traits, including numeracy, conscientiousness, and neuroticism, have a notable impact on this behaviour. The research conducted by Machauer & Weber (1998) highlights the correlation between bank loan terms and borrower risk. It suggests that riskier borrowers face higher premiums on loan rates and have a greater dependence on bank finance. A study conducted by Abrantes-Braga & Veludo-de-Oliveira (2020) revealed that impulsive buying and financial unpreparedness play significant roles in the development of risky indebtedness. Furthermore, Harrison, Noordewier, & Yavas (2004) presented a model that suggests RBB might opt for loans with lower loan-to-value (LTV) ratios to minimise the risk of default. Therefore, these loans may experience higher default rates. These studies highlight the intricate relationship between individual, institutional, and economic factors in influencing RBB.

Research Framework

This research offers fresh insights into the intricate relationship between SFL, OFL, FSE, FSK, and FS in shaping RPB and RBB, as depicted in Figure 1. Previous research has explored each of these aspects individually. However, our study takes a unique approach by combining them into a comprehensive theoretical framework. This allows for a more integrated understanding of financial behaviour.

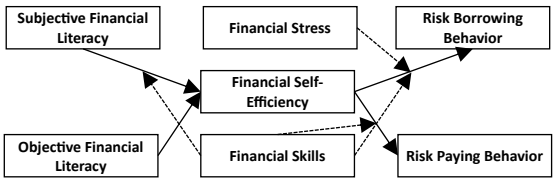

Figure 1: Research Framework.

Past studies, like Bandura SCT (1977), have highlighted the intricate relationship between behavioural, environmental, and personal factors in influencing human actions (Schunk, 2012). Our study expands upon this theory by focusing on its application in the financial domain, investigating the impact of these interactions on financial decision-making and behaviour. Within the field of academia, previous studies conducted by Farrell et al. (2016) and Robb et al. (2015) have shed light on the significant influence of SFL on financial behaviour. However, our research takes a more comprehensive approach by examining the intricate relationship between SFL, FSE, and subsequent financial behaviours. Moreover, previous studies have delved into the impact of OFL on financial behaviour (Huston, 2010; Lusardi et al., 2009; Xiao & Porto, 2017). However, our study stands out by investigating its interaction with FSE and FSK, thereby contributing a fresh perspective to the current understanding.

The concept of FSE, which is based on Bandura's (1977) research, has been explored in consumer credit studies (Lown, 2012; Mindra et al., 2017). Expanding on this, our research investigates the relationship between FSE, financial literacy, and RPB. This area has not been thoroughly examined in previous studies conducted by Cude et al. (2020) and Gärling et al. (2020). In addition, our research investigates FS as a moderating element in the connection between financial literacy and FSE, providing a fresh angle for exploration. While Singh et al. (2019) and Mindra et al. (2017) have acknowledged the mediating role of FSE, our research takes a fresh approach by investigating how FS influences these dynamics, an aspect that has not been thoroughly explored in previous studies.

Methodology

This study uses a quantitative research design to investigate the factors that impact the financial behaviour of debtors in the Islamic banking sector in Jakarta. The participants consisted of 312 debtors who were affiliated with Islamic banks in Jakarta, Indonesia. These individuals were chosen to offer insights into their understanding of finances, confidence in their abilities, and how they handle their money in the context of Islamic banking. Information was gathered through a well-organised questionnaire that aimed to assess different aspects such as SFL, OFL, FSE, FSK, FS, RPB, and RBB related to the study. The questionnaire consisted of a combination of closed-ended and Likert-scale questions to ensure a thorough evaluation of each aspect. The questionnaire was distributed to the participants through various methods, including online and offline channels, to maximise accessibility and convenience for the respondents. Before being distributed, the questionnaire was tested with a small group of respondents to ensure that the questions were clear, relevant, and reliable.

SFL is measured by conducting a self-assessment using a five-point Likert scale. This scale reflects consumers' perception of their financial knowledge in Islamic banking, drawing from the frameworks developed by Xiao & Porto (2017) and Lusardi et al. (2009). OFL is evaluated through a quiz that focuses on important concepts in Islamic banking, such as profit-sharing and interest-free transactions. The measurement of consumers' FSE in the Islamic banking domain utilises a five-item scale derived from previous studies (Lown, 2012; Mindra et al., 2017). This scale assesses self-confidence, financial planning, and problem-solving in accordance with the principles of Islamic finance. FSK is assessed using the Measure of Awareness of Financial Skills (MAFS) developed by Cramer et al. (2004), tailored to the specific features of Islamic banking, including budgeting for Mudharabah or Murabahah payments and Shariah-compliant saving and investing. FS is assessed using a set of five items derived from Lim et al. (2014). Participants are asked to express their agreement with statements that pertain to their FS. This measure seeks to understand the psychological and emotional elements involved in managing financial matters within the realm of Islamic banking. The study evaluates RPB and RBB using methodologies from Lyons (2008). RPB is assessed by considering the timeliness and accuracy of payments for Islamic financial products, while RBB is determined by looking at factors such as impulsive borrowing and inappropriate use of Islamic credit facilities. These measurement tools offer a detailed insight into the financial behaviours, literacy, and stress levels among consumers in the Islamic banking sector.

The minimum sample size for the study was determined using the G*Power software, a statistical tool commonly used for

power analysis in research. This software was instrumental in determining the optimal sample size required to ensure robust statistical power for the analysis, considering the number of predictors and anticipated effect sizes. The data collected through the questionnaires were analysed using SmartPLS, a statistical software package commonly used in social science research for analysing survey data (Hair et al., 2019; Ringle et al., 2020; Sarstedt, Ringle, & Hair, 2017). SmartPLS was selected for its capability to handle intricate models and its appropriateness for exploratory research, which focuses on identifying and measuring latent constructs. During the data analysis stage, SmartPLS was used to evaluate the measurement model, which assessed the reliability and validity of the constructs, as well as the structural model analysis, which examined the proposed relationships between constructs. This involved assessing the external loadings, Composite Reliability (CR), Average Variance Extracted (AVE), and the path coefficients between constructs (Hair et al., 2019; Ringle et al., 2020; Sarstedt et al., 2017). To determine the statistical significance of the path coefficients, a bootstrapping procedure was utilized.

The study adhered to ethical research guidelines, ensuring the privacy and anonymity of the participants. All participants were provided with informed consent, including details about the study's purpose, the voluntary nature of their participation, and their right to withdraw without any consequences.

Result and Discussion

Profile Respondents

The study centred on a particular group of individuals, specifically customers of Islamic banks in Jakarta. A total of 312 respondents took part in the research, providing valuable insights into the dynamics of financial behaviour in the Islamic banking sector. The demographic and banking behaviour characteristics of the respondents offer valuable insights into the context surrounding their financial decisions. A summary of the respondents' profile is presented in the table below, featuring hypothetical data and percentages calculated from the total number of participants (see Table 1).

Table 1: Demographic Distribution of Survey Participants.

Demographic/Banking Behaviour	Frequency	Percentage (%)
Gender		
Male	156	50.0
Female	156	50.0
Age Group		
18-25 years	62	19.9
26-35 years	94	30.1
36-45 years	78	25.0
46-55 years	47	15.1
56 years and above	31	9.9
Education Level		
High School or lower	47	15.1
Diploma	78	25.0
Bachelor's Degree	125	40.1
Postgraduate and above	62	19.8
Employment Status		
Employed	187	60.0
Self-employed	62	19.9
Unemployed	31	9.9
Student	16	5.1
Retired	16	5.1
Income Range (monthly)		
Below IDR 5 million	94	30.1
IDR 5-10 million	109	34.9
IDR 10-15 million	62	19.9
Above IDR 15 million	47	15.1

This demographic and banking behaviour profile presents a well-rounded representation of gender, with an even distribution between male and female respondents. The age distribution reveals a notable focus on the middle-aged demographic, specifically individuals aged 26-35 and 36-45. This suggests a probable increase in involvement with banking services within these age ranges. The respondents' education level leans towards higher education, with a notable portion having bachelor's degrees and postgraduate qualifications. This suggests a relatively educated sample, which could influence their understanding of and interactions with financial products. In terms of employment status, most of the respondents were employed, followed by a notable proportion of self-employed individuals. This mix offers diverse perspectives on financial behavior from different employment backgrounds. The monthly income range demonstrates a diverse distribution across various income levels, with a significant concentration in the IDR 5-10 million range. This range of income levels allows for a diverse perspective on financial behaviour among individuals of varying economic statuses. The profile of the respondents provides a thorough understanding of the customer base of Islamic banks in Jakarta, which enhances the analysis of their financial behaviour and literacy.

Descriptive Statistics

Descriptive statistics were used in this study to analyse the measurements and patterns of variability in respondents' answers. Gaining a comprehensive understanding of these statistics allows for valuable insights into the patterns of respondents' evaluations of their answers to each item within each construct in the model.

Table 2: Descriptive Statistics.

Name	Mean	Standard deviation	Excess kurtosis	Skewness	Cramér-von Mises p value
FSK1	5.394	1.359	0.485	-0.872	0.000
FSK2	5.673	1.274	-0.003	-0.834	0.000
FSK3	5.365	1.524	-0.211	-0.737	0.000
FSK4	5.625	1.189	1.719	-1.104	0.000
SFL1	3.760	0.915	0.515	-0.692	0.000
OFL1	0.503	0.500	-2.013	-0.013	0.000
OFL2	0.670	0.470	-1.483	-0.726	0.000
OFL3	0.702	0.457	-1.221	-0.887	0.000
OFL4	0.734	0.442	-0.873	-1.064	0.000
OFL5	0.615	0.487	-1.784	-0.477	0.000
RPB1	5.888	0.995	1.482	-0.949	0.000
RPB2	5.888	1.257	2.004	-1.372	0.000
RBB1	4.154	2.113	-1.349	-0.281	0.000
RBB2	4.471	2.111	-1.213	-0.434	0.000
RBB3	4.458	2.208	-1.343	-0.416	0.000
FSE1	5.740	0.977	0.753	-0.764	0.000
FSE2	5.776	1.155	1.533	-1.108	0.000
FSE3	5.750	1.172	1.623	-1.136	0.000
FSE4	5.734	1.076	2.294	-1.131	0.000
FSE5	5.631	1.096	1.172	-0.874	0.000
FS1	4.920	1.578	-0.190	-0.733	0.000
FS2	4.875	1.805	-0.485	-0.746	0.000
FS3	4.872	1.887	-0.679	-0.657	0.000
FS4	4.522	1.941	-0.993	-0.458	0.000
FS5	4.660	1.797	-0.617	-0.687	0.000

According to Table 2, SFL and OFL are measured using a formative research approach, which is different from the reflective model used for other variables. In a formative model, the indicator (question) variables are assumed to

play a crucial role in shaping the construct. This implies that each indicator brings a distinct perspective to the construct, contributing to its overall understanding. In contrast to a reflective model, where the construct is assumed to cause indicators and all indicators are expected to move together. The average values for SFL and OFL are particularly enlightening. The average for SFL1, which is 3.760, indicates a moderate level of SFL among the participants. This reflects their own evaluation or understanding of financial knowledge and skills, specifically in relation to Islamic banking. The SFL1 data shows a standard deviation of 0.915, suggesting that there is a moderate range of responses. This indicates that the participants have different levels of confidence or self-perceived knowledge. Regarding OFL, the items (OFL1 to OFL5) displayed mean values ranging from 0.503 to 0.734. The values observed are lower compared to SFL, suggesting a distinct pattern. Given that OFL measures factual knowledge through objective questions, the lower means indicate that participants' actual knowledge levels about Islamic banking may be lower than their perceived knowledge levels (as indicated by SFL). The nature of these questions, which are likely scored 0 for incorrect answers and 1 for correct answers, is the reason why the mean values are around 0.5 and the standard deviations are lower. The use of the formative model is well-suited for SFL and OFL, given the specific focus on financial literacy. Every question adds to a distinct comprehension of the broader concept of financial literacy. As an illustration, in a formative model for OFL, various questions can evaluate various aspects of knowledge related to Islamic banking. This includes comprehension of Shariah-compliant financial principles, familiarity with specific financial products, and recognition of interest-free banking concepts. Each of these factors contributes to the overall concept of 'objective financial literacy', but they do not necessarily progress together as they would in a reflective model. This approach is especially applicable to financial literacy in the context of Islamic banking, where the knowledge base is both diverse and specialised. The formative model captures the wide range of diversity and specificity, offering a more detailed understanding of literacy levels among the study participants.

The variables measured using a reflective model appear to capture various facets of financial behaviour and perceptions among respondents. FSK variables, with average values indicating a strong sense of self-assurance, suggest that respondents generally view themselves as capable in financial matters. Nevertheless, the distribution of these responses, as indicated by skewness and kurtosis, revealed some deviations from normality, suggesting that individuals had differing levels of confidence. The data reveals a fascinating contrast between RPB and RBB. The high mean values for RPB indicate a prevailing inclination among respondents to partake in financially risky behaviours, with a notable variation in responses. In contrast to the lower mean values for RBB, it suggests a decreased tendency towards risky borrowing practices. The distribution patterns, characterised by negative kurtosis for RBB, indicate a wider range of responses, which reflects the varied borrowing behaviours observed in the sample. The FSE variables are notable for their elevated mean values, indicating a notable level of assurance among respondents regarding their financial capabilities. The distribution of responses, especially for FSE4, highlights the participants' inclination towards a higher self-assessment of FSE. Variables with moderate mean values suggest a moderate level of FS. The distribution of responses among respondents indicates a range of experiences with FS, as seen in the negative skewness and kurtosis values. The reflective model utilised for these variables suggests that they are viewed as distinct representations or manifestations of the core constructs they aim to assess, including financial behaviour, self-efficacy, and stress. The statistical properties offer a detailed understanding of how these constructs are perceived and experienced by the respondents, providing valuable insights into their financial attitudes and behaviours.

Common Method Bias (CMB)

Understanding Common Method Bias (CMB) is crucial in behavioural research, especially when data for predictor and criterion variables come from the same individual. This situation may result in artificially inflated or misleading correlations between variables due to shared method variance. As indicated in Table 3, CMB was evaluated using the Variance Inflation Factor (VIF).

Table 3: Common Method Bias (CMB).

Constructs	Inner VIF
FSE	1.194
RPB	1.518
RBB	1.439

The table presents the VIF values for the constructs FSE, RPB, and RBB. The VIF values were FSE = 1.194, RPB = 1.518, and RBB = 1.439. These values hold great importance as they provide insights into the degree of multicollinearity among the constructs in the model. Based on Kock's research (2017), a VIF value below 3.3 is considered acceptable, indicating a low level of multicollinearity. In this study, all the VIF values were significantly below the threshold. It can be inferred that each of these constructs, FSE, RPB, and RBB, have individual explanatory power for the dependent variable, without being significantly influenced by one another. This indicates that when examining the relationship between these constructs and dependent variables, the chances of being affected by multicollinearity are reduced. The low VIF values indicate that the risk of CMB was minimised in this study, which strengthens the validity of these findings. Understanding the dynamics of behavioural research is essential, as it involves the intricate interplay of different behavioural constructs. By ensuring that these constructs are not excessively interconnected, this research improves the reliability and interpretability of the results.

Convergent Validity and Reliability

In this study, we performed outer loading tests to assess the ability of the indicator items to accurately represent constructs. We focused on measuring outer loading, Cronbach's alpha, and AVE (see Figure 1) to evaluate their effectiveness. Each construct's assessment was based on three key metrics: Outer Loadings, CR, and AVE.

Table 4: Outer Model.

Constructs	Outer Loadings	CR	AVE
FSE	0.726 - 0.773	0.868	0.567
RPB	0.756 - 0.857	0.790	0.654
RBB	0.922 - 0.928	0.947	0.857
FS	0.779 – 0.889	0.927	0.719
FSK	0.689 – 0.819	0.835	0.629

In Table 4, the FSE construct had outer loadings ranging from 0.726 to 0.773. The loadings, which assess the strength of the connection between each item and construct, demonstrate a robust and meaningful relationship. The coefficient of reliability for the FSE was 0.868, which surpasses the widely accepted threshold of 0.7, suggesting a strong level of internal consistency. The AVE was 0.567, slightly above the acceptable limit of 0.5, indicating that more than half of the variance in the items was explained by the construct. In relation to RPB, the outer loadings exhibited a range of 0.756 to 0.857, further confirming a robust association with the construct. The CR

was 0.790, which is considered satisfactory, and the AVE was 0.654, comfortably surpassing the threshold, indicating strong construct validity. In the case of RBB, FS, and FSK, it is worth noting that the outer loadings show significant correlations with their corresponding constructs. However, it is important to exclude FSK1 from this analysis as its loading falls below the threshold of 0.7. RBB and FS exhibited notably high outer loadings, while FSK ranged from 0.689 to 0.819, which is slightly lower but still within an acceptable range. The CR values for these constructs were all above 0.8, which suggests a high level of internal consistency. The AVE values exceeded the acceptable limits, with notably high values of RBB and FS. This suggests that a substantial portion of the variance in the items can be attributed to the constructs. The decision to remove FSK1 due to its loading being below 0.7 aligns with the recommended approach in structural equation modelling. In such cases, it is common practice to eliminate items with low loadings to enhance the overall reliability and validity of the model. Table 4 illustrates the robustness and accuracy of the constructs in this study, showcasing strong loadings, high composite reliability, and satisfactory levels of average variance extracted. This strong measurement model provides a solid basis for the analysis of the structural model in this study.

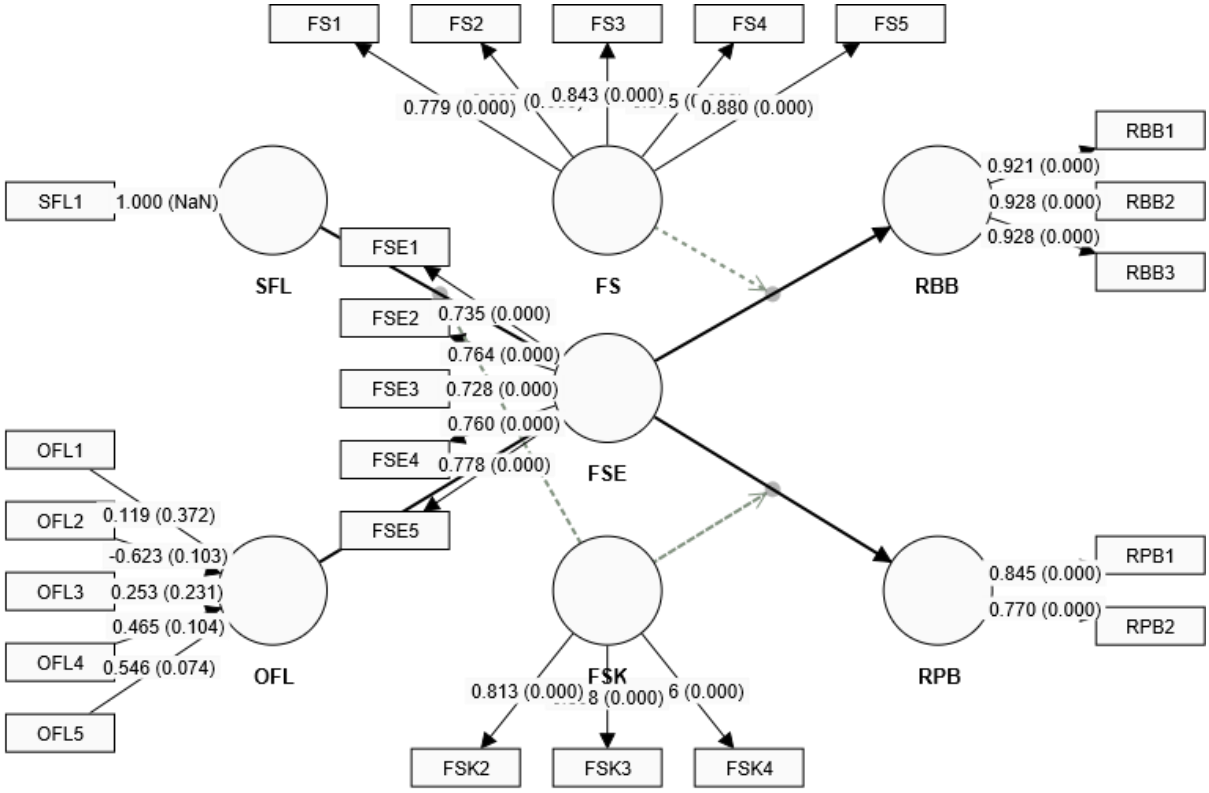

Figure 2: Outer Model.

Discriminant Validity

Ensuring the robustness of this research requires a careful assessment of convergent and discriminant validity.

Table 5: HTMT.

	FS	FSE	FSK	RBB	RPB
FS					
FSE	0.091				
FSK	0.368	0.618			
RBB	0.752	0.085	0.376		
RPB	0.260	0.593	0.486	0.254	

Table 5 presents the heterotrait-monotrait ratio (HTMT), which offers valuable information regarding the discriminant validity of these constructs. Discriminant validity evaluates how well a construct stands apart from other constructs in the model, determined by its minimal correlation with the other constructs. The HTMT values for FS, FSE, FSK, RBB, and RPB can be found in Table 4. The significance of these values lies in their ability to demonstrate the degree of overlap between each construct. The values linked to FS and other constructs, like FSE, FSK, RBB, and RPB, have a relatively low magnitude. This finding implies that FS is significantly different from these constructs, which demonstrates strong discriminant validity. The correlation of FSE with constructs such as FSK and RPB is moderate, while it is relatively low with FS and RBB. This pattern suggests that, although FSE has similarities with FSK and RPB, it remains a separate concept. FSK displayed moderate correlations with FSE and RPB, while showing a weaker correlation with RBB and FS. It appears that FSK, although connected to self-efficacy and paying behaviour, are distinct concepts. RBB showed a strong correlation with FS, but had noticeably weaker correlations with FSE, FSK, and RPB. Further investigation is necessary to determine if there is a clear distinction between these two constructs, given the strong correlation with FS. RPB's correlations with other constructs, like FSE and FSK, show a moderate level of association, indicating some similarities while also retaining their unique characteristics. The HTMT values indicate that the constructs in this study are distinct from each other, supporting the discriminant validity of the model. These values are generally below the threshold of 0.85 (or 0.90 in more conservative settings). It is of utmost importance in structural equation modelling to ensure that each construct makes a distinct contribution to the understanding of the phenomena under study, without any significant overlap that could potentially confuse the results.

Formative Validity

In this study, Tables 6 and 7 highlight the formative measurement model of OFL. Table 6. The Outer Weights

assess the significance of each indicator in relation to the OFL construct. The key metrics encompass the original sample estimate, sample mean, standard deviation, T statistics, and P-values. These metrics collectively evaluate the significance and strength of each indicator's contribution (Hair et al., 2019; Ringle et al., 2020; Sarstedt et al., 2017).

Table 6: Outer Weights.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
OFL1 -> OFL	0.119	0.116	0.362	0.328	0.372
OFL2 -> OFL	-0.623	-0.213	0.493	1.263	0.103
OFL3 -> OFL	0.253	0.190	0.344	0.735	0.231
OFL4 -> OFL	0.465	0.287	0.370	1.258	0.104
OFL5 -> OFL	0.546	0.322	0.377	1.448	0.074

The table displays the contributions of each indicator. OFL1 demonstrates a relatively minimal impact on the OFL construct, as indicated by its low weight and high P-value, suggesting that it is statistically insignificant. On the other hand, OFL2 showed a negative correlation, indicating a reverse connection with the OFL construct. This inverse weight, along with a moderate T statistic and a P-value close to the threshold of significance, may suggest an intricate or unconventional influence on the construct. OFL3 and OFL4 showed moderate contributions, with OFL3 having a slightly higher P value, indicating a less strong contribution compared to OFL4. OFL5 is particularly noteworthy due to its relatively higher weight and lower P value, suggesting a more substantial impact on the OFL construct.

Table 7: Outer VIF.

	VIF
OFL2	1.016
OFL4	1.048
OFL5	1.058

Table 7 displays the levels of multicollinearity among the indicators. The VIF values for OFL2, OFL4, and OFL5 were all close to 1, suggesting a low level of multicollinearity. This is crucial in formative models as it indicates that every indicator provides distinct information to the construct without being excessively influenced by others. It is crucial to thoroughly analyse the outer weights and VIF in the formative model for OFL to ensure that the construct effectively represents objective financial literacy. Each indicator should make distinct and meaningful contributions. This approach enhanced the credibility and accuracy of the construct within the context of this study.

Inner Model

In our final analysis, we performed a path analysis using bootstrapping with 5000 one-tailed subsamples to gain insight into the impact of each pathway in the research model of this study (see Figure 3).

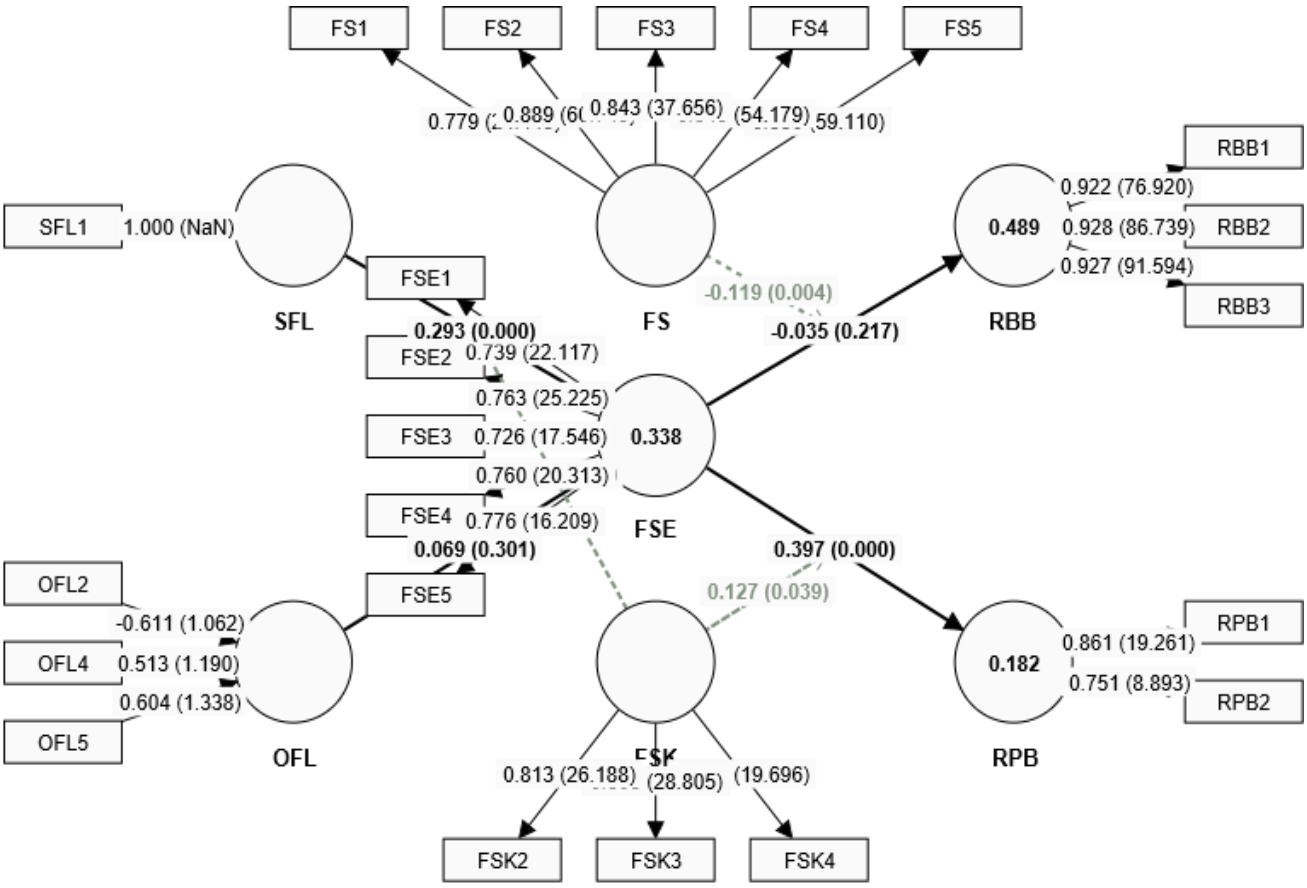

Figure 3: Path Analysis.

The findings of this study offer a thorough insight into the interplay of different constructs related to financial literacy and behaviour. There is a strong correlation between SFL and FSE, suggesting that people's confidence in handling financial matters is greatly influenced by their perception of their financial literacy. Nevertheless, the study found that OFL does not have a significant effect on FSE. This implies that having financial knowledge may not directly influence an individual's confidence in handling financial matters.

Table 8: Path Coefficients.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
SFL -> FSE	0.293	0.286	0.058	5.062	0.000
OFL -> FSE	0.069	0.088	0.133	0.522	0.301
FSE -> RPB	0.397	0.401	0.082	4.818	0.000
FSE -> RBB	-0.035	-0.034	0.045	0.781	0.217
FSK x SFL -> FSE	-0.166	-0.157	0.065	2.562	0.005
FSK x FSE -> RPB	0.127	0.125	0.073	1.758	0.039
FS x FSE -> RBB	-0.119	-0.119	0.046	2.622	0.004

As indicated in Table 8, when it comes to behavioural outcomes, there is a positive correlation between FSE and RPB. This suggests that higher levels of FSE result in an uptick in behaviours related to taking financial risks in the payments domain. On the other hand, the observed effect of FSE on RBB is negative, although it is not statistically significant. This suggests that self-efficacy in financial matters may not have a definitive impact on borrowing behaviours. It is worth noting that the relationship between FSK and SFL has a detrimental impact on FSE, indicating that when these factors are combined, it can diminish an individual's self-assurance in dealing with financial affairs. The relationship between FSK and FSE has a notable impact on RPB, suggesting that a blend of abilities and confidence plays a part in financial risk-taking behaviours. In addition, the relationship between FS and FSE has a negative effect on RBB, indicating that the combination of FS and FSE can result in a reduction in RBB. The results highlight the intricate relationship between various aspects of financial literacy, skills, and stress, and how they collectively influence financial behaviours. This study highlights the complex interplay between personal perceptions, financial knowledge, individual abilities, and stress levels in influencing financial decision-making and risk-taking behaviours.

Discussion

In the realm of Islamic banking in Indonesia, the convergence of financial literacy, technological advancements, and financial behaviour creates a complex landscape for examination. The results of this study on the connections between personal and measurable financial knowledge, FSE, and financial habits are consistent with previous research, while also providing distinct perspectives relevant to the Islamic banking industry. The impact of SFL on FSE aligns with research conducted in various financial contexts, highlighting the significant role of individuals' confidence in their financial knowledge on their financial behaviour (Farrell et al., 2016; Robb et al., 2015). This relationship is especially important in Islamic banking, where consumers encounter distinctive financial products and services. Understanding the intricacies of these products, which are often based on Shariah law, may necessitate a greater level of subjective literacy for effective navigation. Nevertheless, the absence of a substantial impact of OFL on FSE points out a potential limitation in the effectiveness of OFL in the Islamic banking context. This finding supports the idea that SFL can have a greater impact on financial behaviour compared to OFL, as indicated by previous studies (Xiao, 2014). This study also provides insights into the impact of FSE on financial behaviours, specifically RPB and RBB. The strong correlation between FSE and RPB is consistent with existing research that emphasises the impact of FSE on financial decision-making (Cude et al., 2020; Mindra et al., 2017). Nevertheless, the slight and inconclusive correlation between the FSE and RBB implies that a strong FSE may not always result in RBB within the realm of Islamic banking. This may be attributed to the distinct characteristics of Islamic financial products, which frequently prioritise risk-sharing and the avoidance of excessive uncertainty.

The interplay between FSK and SFL or FSE on financial behaviour provides additional understanding. The FSK × SFL interaction has a negative impact on the FSE, suggesting that in the Islamic banking sector, the combination of FSK and subjective literacy results in a more cautious approach. This could be attributed to the specific challenges and risks associated with these financial products. The results of this study provide valuable insights into the relationship between financial literacy, self-efficacy, and financial behaviour in the context of Islamic banking. This research can provide valuable insights for stakeholders, including Islamic banks and regulatory bodies, to develop effective strategies that promote financial literacy and responsible financial behaviour. These findings are especially relevant in the ever-changing FinTech landscape.

Conclusion

The results of this study offer valuable insights into the financial behaviour of Islamic banking customers in Jakarta. This highlights the important role of SFL in shaping FSE, which subsequently impacts risky financial behaviours. Nevertheless, the impact of OFL on FSE was not substantial, suggesting a possible deficiency in financial education. The interactions between FSK, stress, and literacy provide valuable insights into the intricate dynamics of financial decision-making within the Islamic banking context. These findings have practical implications for both Islamic banks and policymakers. There is a clear need for focused financial education programmes that not only teach important financial literacy skills, but also improve financial decision-making and foster financial stability. Islamic banks can create customised financial literacy programmes that cater to the specific characteristics of Islamic financial products. This will help promote a deeper comprehension among consumers. Furthermore, the impact of FS on financial behaviour highlights the significance of offering support mechanisms for customers encountering financial challenges.

The sample was limited to Islamic banking customers in Jakarta, which may restrict the applicability of the findings to other regions or banking sectors. In addition, the use of self-reported data in the questionnaire may introduce bias into the responses. In order to broaden the scope of future research, it would be beneficial to include a wider range of participants from various demographics and geographic locations, encompassing different regions and types of banking customers. Additionally, one can delve into the effects of digital financial services, specifically within the expanding Fintech industry, on financial behaviour within Islamic banking. Longitudinal studies offer valuable insights into the evolution of these behaviours over time, particularly in relation to economic changes or shifts in the banking industry. In addition, qualitative research has the potential to provide a deeper understanding of the individual motivations and perceptions that influence financial behaviours in the context of Islamic banking.

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