

# Evaluating Public Views On Factors Affecting Islamic Financial Literacy Using Rasch Model (Evidence From Indonesia)

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**Abstract.** This study examines how religiosity, hopelessness, and financial satisfaction affect Islamic financial literacy in Indonesia. The Rasch model was used to analyze questionnaire data from 342 participants with different educational backgrounds. The data were sorted to ensure appropriate data quality. In this paper, we argue that education and social status affect Islamic financial knowledge. We found that religion and financial satisfaction increase Islamic financial knowledge, while hopelessness decreases it. This paper discusses Islamic financial literacy issues and social impacts that may interest the Indonesian halal industry. To achieve the best quality, it is essential to follow up. The authors recommend appropriate actions for future studies to address hopelessness and socioeconomic injustice related to Islamic financial literacy. This paper discusses the results of a study that used a questionnaire modified from previous work on Islamic financial literacy. The results of the study, which can be used to promote halal business in Indonesia, show how hopelessness, financial satisfaction, and religion can affect Islamic financial literacy. By providing information that can be applied as solutions, this article aims to contribute to the development of the Islamic industry sector in Indonesia.

**Keywords:** Islamic Financial Literacy, Hopelessness, Religiosity and Financial Satisfaction

## 1. Introduction

In recent years, there has been a significant expansion of Islamic finance in a number of different regions around the world [1]. One of the talents that is gaining greater attention in Indonesia is financial literacy, which is turning into one of the essential abilities. Islamic financial literacy refers to an individual's understanding, expertise, beliefs, and actions when it comes to making financial decisions. Effective management of funds is crucial for enhancing living standards and economic performance [2]. Indonesia is the nation that is home to the biggest number of people who adhere to the Islamic faith. Despite Indonesia's status as the country with the biggest

Muslim population globally, its halal industry lags well behind that of other Southeast Asian nations (World's Islamic Finance Marketplace, 2018). Hence, it is imperative to exert more substantial endeavors in order to enhance the awareness and understanding of Islamic finance among the populace. This lagging need to be worked on by Indonesia, in order to be able to compete with neighboring countries. Where in terms of population, Indonesia is clearly superior to the number of Muslim communities compared to neighboring countries. Along with the growing use of Islamic financial technology products in Indonesia [3]. This development certainly requires a deep understanding in the individual [4]. Being financially educated is seen as an obligatory responsibility for Muslims [5]. Which in essence financial education will determine how their financial attitudes and decisions.

Financial literacy significantly various elements of an individual's life and financial situation, while Islam also influences a person's financial mindset. The integration of financial expertise, financial mindsets, and Islamic principles has the potential to enhance company or economic outcomes [6]. The primary factors that contribute to the advancement of Islamic financial inclusion in Indonesia are the interplay between supply and demand, which are shaped by factors such as financial literacy, religious devotion, and social standing [7]. In addition to these elements, there are a great number of other causes that have an impact on the decisions that an individual makes regarding their finances. There are also many studies on the importance of financial education and its impact on well-being Bannier & Schwarz (2018), indicating that elements with high financial literacy and high financial education have an impact on the quality of life and increase the availability of resources that are sufficient for the future [9]–[11]. Other factors that influence financial literacy include family [12], [13], gender [14], and the strongest factor affecting money management and one's financial knowledge is religion [15].

In spite of the fact that it was indicated previously that Indonesia is home to a primarily Muslim population, when taking into consideration the topic of financial literacy, it becomes clear that this population is still not very knowledgeable about Islamic financial literacy. The Islamic finance industry in Indonesia is still developing but has already made significant progress [7]. In addition, the growth of this industry unquestionably comes with it a variety of hazards that may materialize in actual fact. The risks contained in this digital product certainly have an influence on individual actions [16]. Dewi & Ferdian [17] did a study in Indonesia to assess the level of Islamic financial literacy. In addition to demonstrating the benefits of Islamic banking, the findings can be used as a roadmap to improve Islamic financial knowledge. Ali et al [7] did a study that analyzed the degree of Islamic financial inclusion in Indonesia. They found that the factors connected to the provision of financial services played a key influence in the determination of the amount of Islamic financial inclusion in Indonesia (i.e., human resources, products, and services, regulatory policies, and infrastructure) and demand factors (i.e., financial literacy, social economists, social influence, and religious commitment) are the most important factors influencing the level of Islamic finance inclusion in Indonesia.

Rahim [18] conducted prior research that presented frameworks for improving understanding and evaluating the extent of Islamic financial literacy. The purpose of this study is to do an investigation into the elements that have an impact on the levels of Islamic financial literacy in Indonesia, both at high and low levels. To achieve this, we will utilize Rahim [18] research questionnaire and incorporate the affective variables of hopelessness, religiosity, and financial satisfaction. The research questions (RQ) and hypotheses for this study are as follows:

RQ1: What impact do the three affective variables have on Islamic financial literacy?

RQ2: What is the relationship between the affective variables and Islamic financial literacy?

H1: The hopelessness variable reduces and has a significant negative impact on Islamic financial literacy, while the financial satisfaction and religiosity variables increase and have a significantly positive impact on Islamic financial literacy.

H2: There was no significant impact on the variables tested, and the relationships that were identified were relatively the same.

## **2. Literature Review**

### **2.1 Financial Literacy**

The Islamic Economics and Finance Sector in Indonesia is seeing significant growth [19]. One way to understand consumer financial knowledge and decision-making is through nonclassical economic theory. This theory sees individual consumers making decisions for their benefit as uninterrupted market participants, but [20] also said that each person has different financial knowledge learning needs depending on context. Middle-income earners learn more through middle-class institutions, usually universities, and understand the different risks and outcomes of different types of investments, while lower-income earners learn more in informal settings, such as from friends and family. Individuals lacking financial literacy are more prone to experiencing financial anxieties, whereas those possessing financial literacy are more secure in their financial well-being [20].

Financial literacy is easier to achieve when funds are available, because when funds are insufficient, operational performance is disrupted, which affects organizational performance [21]. Financial knowledge greatly influences individual retirement planning Safari et al., [22] Financial literacy is needed to improve the business, employees, students, and everything that makes a business successful, such as productivity, work, and attendance [23]. So that financial literacy is one of the important things and cannot be separated from individual life.

### **2.1.1 Factors That Can Influence Financial Literacy**

Individuals graduating from high school soon face more complex financial decisions. A study by Candra Sari et al., [34] examined extended, reality-based financial socialization to increase Islamic financial knowledge among elementary school students. Students' knowledge was tested using pre- and post-tests that focused on basic Shariah concepts, such as borrowing, investing, saving, payment methods, and earning money. The study states that countries with a high Muslim population recognize the importance of Islamic financial education and that this education will improve financial literacy and inclusion if it occurs at an early age. People can develop bad habits regarding their personal finances if they learn from their family, which does not provide them with proper education and lets their children dispose of money without monitoring their spending [25].

Financial literacy helps enable a better perspective and quality of life [10]. Retirement planning can be significantly affected by financial literacy [22]. How financial literacy affects Japanese people's propensity to undergo preventative health screenings [35]. Higher financial literacy leads to greater ability to use banks and more success in budgeting and saving [36]. Zauro et al., [37] highlighted the importance of Islamic financial literacy in their study and called for using the Islamic financial system as a tool for efficient wealth redistribution. Dewi & Ferdian [17] pointed out that quality is paramount in Islam, which means that the Islamic finance industry must grow organically and in accordance with all aspects of Shariah principles. Therefore, deeper observation of financial literacy is very important to see the extent of understanding that individuals have.

## **3 Research Method**

### **3.1 Participants and Data Collection**

Financial literacy helps enable a better future outlook and quality of life [10]. Financial literacy can significantly affect retirement planning [22]. Higher financial literacy leads to greater ability to use banks and greater success in budgeting and saving [36]. Zauro et al., [37] highlighted the importance of Islamic financial literacy in their study and called for using the Islamic financial system as a tool for efficient wealth redistribution. [17] pointed out that quality comes first in Islam, which means that the Islamic finance industry must grow organically and in accordance with all aspects of Shariah principles.

The gathered data were examined utilizing the Rasch approach employing Winstep software. Stolt et al., [38] asserts that the Rasch method is an appropriate technique for fundamental analysis in the realm of human sciences. Employing tools such as questionnaires to gather and assess ordinal data [38]. In addition, the Rasch method meets the five criteria of objective measurement in the social sciences [39]. So that the Rasch model we make as a tool used to prove

existing hypotheses by statistical means. In addition, this method is considered the most appropriate model for use in the analysis of quantitative data derived from surveys of respondents. The responses of respondents are evaluated using a Likert scale, which allows for the collection of quantitative data. When the question items are asked online, this scale is utilized to depict the decisions that respondents make regarding their responses.

In the following table the researcher will present a demonstration and description of the sample that the researcher successfully obtained in this study. For that, readers can see as follows :

**Table 1.** Sample population

Demography	Description (Code)	N1	N2
Domicile	Jakarta (K)	177	126
	Non-Jakarta (J)	165	121
Gender	Male (L)	84	58
	Female (P)	258	189
Status	Single (X)	305	223
	Married (Y)	37	24
Religion	Islamic (A)	339	245
	Non-Islamic (B)	3	2
Age	Under 18 years old (E)	4	1
	18–22 (F)	280	207
	23–26 (G)	21	16
	27–30 (H)	3	1
	Over 30 years old (I)	34	22
Education level	High school (R)	93	67
	D3 (S)	10	6
	S1 (T)	235	170
	S2 (U)	2	2
	Other	2	2

(Source: Primary Survey)

Note: N1 = sample before screening; N2 = after screening

### 3.2 Undimensionality

In this study, the collected data were analyzed using the Rasch method by observing the dimensionality of the items, that is, whether the given constructs were unidimensional or multidimensional. In this study, Wright maps were also analyzed for item and person mapping using Winstep software. According to Stolt et al., [38], To find biased items and compare differences in item responses of sample questionnaires based on demographic data and measure ordinal data, the Rasch method conducted differential item function analysis using instruments such as questionnaires. This method is appropriate for basic analysis in the human sciences [38]. In Rasch analysis, the steps generated or applied to individuals and items Rasch method meets the five criteria of objective measurement in the same interval scales social sciences [40]. The four dimensions of the study have an eigenvalue of less than 2, which means that they have subdimensionality that allows for further scale-wise analysis [41].

**Table 2.** Undimensionality Assessment

Scale/Subscale	Raw variance explained	PCA eigenvalue
Global scale	66.8%	6.1
Islamic financial literacy	36.5%	1.72
Hopelessness	57.7%	1.90
Religiosity	82.5%	1.74
Financial satisfaction	48.8%	1.83

(Source: The Author)

Item reliability and person separation were assessed using Rasch models in the summary statistics category. Reliability of person separation was measured based on the productivity of the respondent's ability to answer a construct with the same concept. Otherwise, item separation reliability was measured and assessed based on the level of difficulty when the same constructs were answered by different groups of respondents [39]. To examine the extent to which respondents could be discriminated and how well items could be separated, a separation index—the person separation index and the item separation index—was used based on questionnaires [42]. Table 5 shows the item scores and person reliability. Following [43], the data categories for reliable persons and items can be divided into sufficient, good, very good, and special values [43].

### **3.3 Rating Scales and Item Assessment**

Each item has multiple rating scale categories, including the likelihood that someone will affect the following category based on the previous category, or that someone will be observed in one category for another item, which can be represented on the Rasch-Andrich rating scale or as a point on the latent variable (i.e., the person observed in the item category has the same likelihood in the other item categories). There were difficulties when an item had the same probability in the highest anchovy category as in the lowest category [44].

The Rasch rating scale model requires taking into account the probability of respondents answering, instead of just observing the overall attitude of the respondents or only considering the response items that were obtained [44]. The average measurement of increases is shown in table 5.

**Table 3.** Summary of Rasch Measurement Model

Parameters (with quality criteria)	Global scale (42 items)	Islamic financial literacy (IFL)	Hopelessness (HLN)	Religiosity (RLG)	Financial satisfaction (FS)
<i>Model fit: Summary of items</i>					
Item mean in logits (criteria: 0.0 logits)	.00, SD=1.05	.00, SD=0.50	.00, SD=0.42	.00, SD=0.50	.00, SD=0.73
Item reliability	0.99	0.96	0.92	0.91	0.99
Item separation reliability (criteria: good, 0.81–0.90; very good, 0.91–0.94; excellent, >0.94)	0.99	0.96	0.92	0.91	0.99
MNSQ fit model item range extremes (criteria: good, 0.5–1.5; very good, 0.71–1.4; excellent, 0.77–1.3)	Infit: 0.68–1.74 Outfit: 0.69–1.45	Infit: 0.76–1.46 Outfit: 0.70–1.39	Infit: 0.85–1.28 Outfit: 0.74–1.36	Infit: 0.62–2.16 Outfit: 0.61–1.80	Infit: 0.74–1.20 Outfit: 0.72–1.20
Item separation index (criteria > 3)	13.12th	5.16	3.43	3.24	8.81
Separate item strata = [(4 x separation index) + 1]/3 (criteria: fair, 2–3; good, 3–4; very good, 4–5; excellent, >5)	(Level 20)	(Level 7)	(Level 4)	(Level 4)	(Level 12)
<i>Model fit: Summary of persons</i>					
Person mean in logits (criteria: 0.0 logits)	0.27, SD=0.59	1.36 SD=1.10	-3.09, SD=2.04	3.21, SD=2.60	0.34, SD=0.93
Person reliability	0.85	0.69	0.75am	0.81	0.72
Person separation reliability	0.85	0.69	0.75am	0.81	0.72
Separate Person strata = [(4 x separation index) + 1]/3 (criteria: fair, 2–3; good, 3–4; very good, 4–5; excellent, >5)	(Level 3)	(Level 2)	(Level 2)	(Level 3)	(Level 2)
<i>Rating Scale Analysis</i>					
Responses per category (criteria: ≥ 10)	YES	NA	NA	NA	NA
Adjacent threshold distance (criteria: 1.4–5 logits) <sup>a</sup>	i) scale 0–1 was 0 to -0.84 = 0.84 logits; (ii) scale 1–2 was (-0.84) – (-0.63) = 0.21 logits; (iii) scale 2–3 was (-0.63) – (0.12) = 0.75; (iv) scale 3–4 was (0.12) – (1.35) = 0.23				

MNSQ Outfit (criteria: < 2 logits)	YES	NA	NA	NA	NA
Probability curve graph (criteria: distinct curve on each response category and each peak is higher than 0.5 logits)	NO	NA	NA	NA	NA
Average measure (criteria: increases monotonically across rating scale)	YES	NA	NA	NA	NA
<i>Dimensionality</i>					
Raw variance in data explained by measure (criteria: > 20%)	66.8%	36.5%	57.7%	82.5%	48.8%
PCA eigenvalue for first contrast (criteria: > 2.0 indicates the presence of another dimension; ≤ 2 supports unidimensional scale)	6.1	1.72	1.90	1.74	1.83
Unexplained variance in 1st–5th contrast of PCA of residuals (criteria: good, 5–10%; very good, 3–5%; excellent, < 3%)	7.2%–1.5%	15.2%–8.8%	11.5%–5.6%	4.4%–2.2%	13.4%–5.8%

All Participants: 343 - 96 (outliers) = 247 participants.

Note: SD: standard deviation; PCA: principal component analysis.

## 4. Result and Discussion

### 4.1 Wright Maps Analysis

The distribution of items, subjects, and the perceived difficulty level of the questionnaire items can be shown using Wright maps. Figure 1 shows the distribution of respondents' talents in depth. The most capable are shown on the top left of the figure, while the least capable are shown on the bottom right. The distribution of the item's difficulty level is displayed on the lower right side, with the most difficult items at the top and the easiest at the bottom [45]. Items Q15, Q16, Q17, Q18, and Q19 in the Religiosity construct (RLG) indicate that the average participant prays for help and protection and that they can find strength and comfort in religion. Participants also agree that God determines the meaning of life, that they follow religious teachings in all areas of life, and that they avoid anything that goes against their religious beliefs. Religion is one of the strongest determinants of how a person handles their money, with financial status being influenced by the level of Islamic financial literacy; similar results have been found in previous research [15]. Therefore, it can be concluded that high religiosity can increase Islamic financial literacy.

In addition, the constructs of Islamic financial literacy, especially items Q5, Q6, and Q7, which refer to investing only in approved services, recognizing that Islamic instruments are available in the market, and transacting only with trustworthy individuals, were found to be related to financial satisfaction. In the lower items, especially in questions Q27 and Q24 about efforts to improve the current financial situation when someone is in financial difficulties, participants can manage for a certain period. It can be concluded that financial satisfaction is also a factor that improves Islamic financial literacy to be able to invest properly by religious teachings and to be able to manage finances under difficult conditions. The findings indicate a direct



correlation between financial satisfaction and Islamic financial literacy, meaning that a higher degree of financial satisfaction might lead to an increase in Islamic financial knowledge.

Items Q9, Q11, Q12, and Q14 in the construct of hopelessness regarding the future and things that cannot be changed for the better, the impossibility of getting something one wants, and the view that all things in the future are bad are at the top of the figure, in contrast to Islamic financial literacy. Therefore, the construct of hopelessness strengthens the level of Islamic financial literacy. When a person's level of hopelessness is high, that person becomes insecure and tends to try to change the difficult situation, which decreases the level of Islamic financial literacy. It was found that the average participant thinks more about the efforts required to improve a situation rather than simply viewing everything as bad all the time. There appears to be a definite negative association between pessimism and Islamic financial knowledge, according to the statistics. In other words, as levels of hopelessness increase, levels of Islamic financial literacy decrease.



whether a response to an item is biased concerning the sociocultural context of the sample, i.e., its demographic characteristics. To find out if these 28 research items matched our demographics, a differential analysis of the items that worked was conducted [41]. It is possible that the item in question could be categorized as a DIF if the contrast value was greater than 0.5 and the probability value was less than 0.05 [47].

There is an indication of bias in item Q25. There are differences in responses regarding the question "ease of getting a loan for your needs" from the married and unmarried groups. This item is biased towards the unmarried group, indicating that on average unmarried respondents have no worries about getting a loan compared to the average. the average respondent is married. It was also found that DIF in item Q15 regarding the question "surrendering it to God when determining goals" was biased towards married respondents. In educational demographics, differences were found between SMA, D3, and S1 students in terms of attitudes towards credit, investment services, and awareness of sharia instruments in the market. It shows that the average respondent with a D3 education level has more difficulties with credit than the average respondent with a bachelor's degree education level. However, respondents with a D3 education level understand investment services better and are more aware of sharia instruments in the market compared to respondents with high school or bachelor's degree education.

**Table 4.** Differential Item Functioning Results

Items	Marital Status	DIF measure	DIF contrast	t	Probability
Q25	X	0.83	0.83	3.66	0.0004
	Y	0.00			
Q15	Y	-1.53	1.12	2.91	0.002
	X	-2.64			
Items	Education Level	DIF measure	DIF contrast	t	Probability
Q25	R	0.69	1.04	2.10	0.03
	S	-.035			
Q5	S	0.42	1.31	3.10	0.02
	R	-0.90			
Q5	S	0.42	1.32	3.17	0.002
	T	-0.90			
Q6	S	0.57	1.18	2.79	0.03
	R	-0.60			
Q6	S	0.57	1.10	2.71	0.04
	T	-0.52			

Source: The Author, 2022; *Winsteps Software*

## 5. Conclusion

As a result of our research, we are able to draw a number of conclusions after putting our findings through a series of tests using statistical tools. This study demonstrates the applicability of the variables proposed by Rahim [18] in the context of Indonesia. The study findings indicate that religiosity and financial contentment have a favorable impact on the level of Islamic financial literacy in Indonesia, whereas pessimism has a negative impact. Education level and marital status can both impact an individual's Islamic financial knowledge. Future study could expand the indicators or others. Second, future study is expected to be able to examine variables outside of research, for example government policies regarding Islamic financial literacy education in schools, standards of a person's financial satisfaction, and mental health to maintain an optimistic attitude. Thus, the discovery will be more comprehensive. In addition, of course, this study can be a consideration for various stakeholders to see various developments that need to be done so that financial literacy can increase optimally. And it cannot be separated also that an individual's education will greatly determine the financial decisions they make.

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