



Assessing behavioral determinants of sharia gold investment intention: The roles of literacy, motivation, inclusivity, and risk perception

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ABSTRACT

Background: Indonesia has the second-largest Muslim population in the world, which provides a strong potential for the development of its sharia economy. However, in 2024, levels of sharia financial literacy and inclusivity remain low, with inclusivity lagging behind literacy. At the same time, sharia gold investment among young people is experiencing significant growth. This study aims to examine the influence of Islamic economic literacy, motivation, financial inclusivity, and risk perception on students' interest in sharia gold investment at Universitas Gadjah Mada. **Methods:** This research applies a quantitative survey approach using a structured questionnaire with a five-point Likert scale. A total of 173 students were selected using purposive sampling. The data were analyzed using ordered logit regression with robust standard errors to determine which factors significantly affect students' investment interest. **Findings:** The results show that Islamic economic literacy, motivation, financial inclusivity, and risk perception collectively influence students' interest in sharia gold investment. However, only Islamic economic literacy and motivation have statistically significant positive effects, while financial inclusivity and risk perception do not show significant influence in the regression model. **Conclusion:** Improving Islamic economic literacy and strengthening students' motivation are the most effective strategies to increase interest in sharia gold investment among young people. **Novelty/Originality of this article:** This study offers a comprehensive explanation of early-stage investment behavior by combining empirical survey data with inferential analysis, providing insights into the factors driving sharia investment interest in Indonesia's developing Islamic finance market.

KEYWORDS: Islamic financial literacy; motivation; sharia financial inclusivity; sharia gold investment.

1. Introduction

Indonesia is the country with the second-largest Muslim population in the world as of 2024. According to data released by the World Population Review in 2024, Pakistan holds the largest Muslim population, while Indonesia ranks second. Based on data published by DataIndonesia and drawn from the Geographic Information System (GIS) of the Directorate General of Population and Civil Registration/*Dinas Kependudukan dan Catatan Sipil* (Dukcapil), Ministry of Home Affairs, Indonesia's population reached 284.97 million as of

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December 31, 2024. This figure represents an increase of 4.24 million people (1.51%) compared to 280.73 million in the previous year. Of this total population, the majority are Muslim 248.22 million people, an increase of 3.8 million (1.56%) from 244.41 million at the end of 2023. In other words, 87.2% of Indonesia's total population adheres to Islam (DataIndonesia.id., 2024). This demographic strength should provide a significant opportunity for the growth of the Islamic (sharia) economy in Indonesia. However, in reality, the levels of Islamic financial literacy and inclusivity remain far lower than those of conventional finance. Moreover, the gap between literacy and inclusivity within the Islamic finance sector reflects the urgent need for knowledge in Islam.

According to the 2024 National Survey on Financial Literacy and Inclusion/*Survei Nasional Literasi dan Inklusi Keuangan* (SNLIK) conducted by the Financial Services Authority/*Otoritas Jasa Keuangan* (OJK), the Islamic financial literacy rate stands at 39.11%, while Islamic financial inclusion is only 12.88% (DJPPR, 2024). By contrast, conventional financial literacy and inclusion reach 65.43% and 75.02%, respectively. This substantial gap shows that Islamic financial literacy and inclusivity lag 26 to 62 percentage points behind their conventional counterparts.

Islamic financial literacy levels are higher than Islamic financial inclusivity, indicating that more people possess knowledge, skills, and confidence regarding sharia-compliant concepts and products than those who actually use them in practice (DJPPR, 2024). This mismatch suggests barriers in translating knowledge into action. Limited physical access, insufficiently tailored financial services, and perceptions that sharia financial products are less competitive than conventional alternatives remain major challenges to improving Islamic financial inclusion.

Interestingly, while data on sharia financial inclusion indicate limited usage of sharia investment instruments, in practice, interest and participation in sharia gold investment grew significantly in 2024. Globally, gold investment demand remains strong. According to the World Gold Council in 2023, global gold demand reached 4,741 tons in 2022, with an average annual price increase of 6.2% over the past decade (World Gold Council, 2024). In Indonesia, a 2022 survey by the Central Statistics Agency/*Badan Pusat Statistik* (BPS) revealed that 58% of respondents consider gold their primary investment instrument, particularly among the productive-age generation. This preference is largely driven by gold's reputation as a hedge against inflation and market volatility, compared with other investment alternatives such as stocks or deposits. Supporting this, researchers found that 72% of respondents prefer gold due to its high liquidity and stable value, even in times of economic uncertainty (Golubovic et al., 2024).

Throughout 2024, the inclusivity and usage of sharia gold investment instruments in Indonesia increased sharply. Bank Syariah Indonesia (BSI), the country's leading provider of sharia investment products, reported a 78.18% year-on-year increase in its gold business, while the number of gold customers rose by 81%, reaching approximately 336,000 clients. According to Anton Sukarna, BSI's Director of Sales & Distribution, most gold installment customers are from Generations Z and Y (millennials), who collectively represent around 50% of BSI's gold customer base (Bank Syariah Indonesia, 2024).

This gap between relatively low literacy and inclusivity levels versus high real-world interest in sharia gold investment highlights the need to better understand the relationship between these factors. Such insights will help sharia financial institutions optimize product offerings and understand Gen Z's investment behavior toward sharia-compliant gold. In this context, sharia gold investment should not be viewed solely as a financial instrument but also as part of sustainable finance, integrating social values, economic resilience, and sharia principles. Therefore, this study seeks to contribute to a deeper understanding of how literacy, motivation, inclusivity, and risk perception shape interest in sharia gold investment in ways that are both strategic and sustainable.

Based on the background, the objective of this study includes to determine the effect of Islamic economic literacy on interest in sharia gold investment; the effect of motivation on interest in sharia gold investment; the effect of sharia financial inclusivity on interest in sharia gold investment; the effect of risk perception on interest in sharia gold investment;

and to examine the simultaneous influence of Islamic economic literacy, motivation, inclusivity, and risk perception on UGM students' interest in sharia gold investment.

Sharia-compliant investment has emerged as a central focus in integrating Islamic principles with contemporary economic demands. Gold stands out as a highly favored instrument due to its inherent liquidity, resistance to inflation, and consistent long-term value. However, individuals' decisions to invest in sharia-compliant gold are influenced by psychological, social, and knowledge-based factors that collectively shape financial behavior.

The Theory of Planned Behavior (TPB), conceptualized by Ajzen (1991), offers a pertinent theoretical framework for understanding this phenomenon. TPB posits that an individual's intention to engage in a particular behavior is determined by three core components: attitude toward the behavior, subjective norms, and perceived behavioral control. These components are predictive of an individual's likelihood of undertaking a specific action.

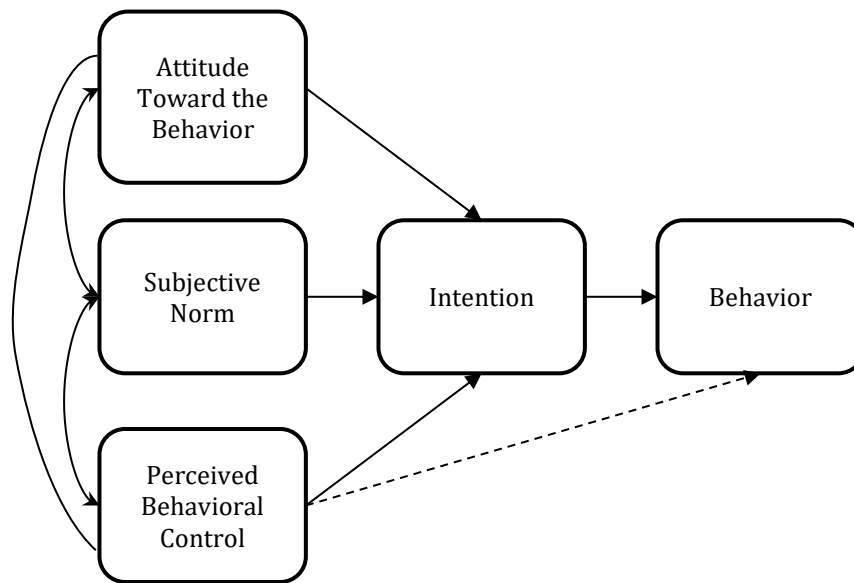


Fig. 1. Theory of planned behaviour
(Anggraini & Cahyono, 2025)

Within the scope of this study, TPB is employed to elucidate students' interest in sharia-compliant gold investment. Attitude toward the behavior is manifested through an individual's perception of the benefits and intrinsic value of sharia gold investment. Subjective norms encompass social influences, including religious and familial environments that encourage such investment behavior. Concurrently, perceived behavioral control reflects students' assessment of the ease or difficulty in executing investments, encompassing aspects such as financial literacy and accessibility to sharia investment platforms.

Beyond theoretical considerations, Islamic economic literacy plays a pivotal role in shaping financial decisions. Islamic economic literacy refers to an individual's comprehension of financial concepts and practices aligned with Islamic principles, aiming to achieve both worldly prosperity and spiritual well-being (Bank Indonesia, 2020). This literacy is characterized by six key indicators: (1) understanding Islamic economic terminology, (2) knowledge of Islamic financial institutions, (3) awareness of halal products and services, (4) sharia-based financial management, (5) numerical proficiency in Islamic economics, and (6) a future-oriented outlook. Based on comprehension levels, Islamic economic literacy is categorized into four tiers: well literate, sufficient literate, less literate,

and not literate. A robust grasp of this literacy constitutes an indispensable foundation for making sharia-compliant financial decisions, including investment activities.

Motivation, comprising both internal and external forces that impel individuals to act, is another influential factor, particularly in financial decision-making such as investments. Motivation can originate from personal experience, social surroundings, or spiritual impetus, thereby shaping one's financial orientation and behavior (Qingyan, 2025). Prior research indicates that motivation significantly encourages students to invest in gold (Lubis, 2019; Vikram & Sinha, 2026). Highly motivated individuals typically demonstrate proactive engagement in information seeking, learning, and application within their investment practices.

Furthermore, inclusivity represents a critical consideration in the advancement of sharia investment. Inclusivity refers to the principle that every individual, irrespective of background or social standing, possesses the right to full participation in social, economic, and cultural life (Krysovaty et al., 2024). In the financial domain, inclusivity is realized through financial inclusion, the process of ensuring access to, availability of, and utilization of formal financial services that are appropriate and affordable for all societal segments (Cihák et al., 2016). Financial inclusion is instrumental in mitigating economic disparities and fostering active participation, including in investment activities. In practical terms, inclusivity in sharia gold investment is exemplified by products such as gold installment plans and digital gold savings accessible via mobile applications, designed to facilitate widespread public access, particularly for students as nascent investors (Nadhriati & Suparmin, 2023). These initiatives not only promote financial equity but also support the broader dissemination of sharia-compliant financial services.

Risk perception, how individuals evaluate uncertainty and potential losses associated with investment decisions constitutes another significant factor. This perception is frequently molded by social determinants such as family norms, educational environments, and peer groups, as demonstrated in a study by Tiwari & Mishra (2025) in India. According to Sukir, risk perception reflects the uncertainty experienced by investors when the outcomes of their investment decisions cannot be accurately predicted (Badriatin et al., 2022).

Ultimately, interest in sharia-compliant gold investment arises from the complex interplay of these diverse factors. As posited by Alhamdu (2016), interest represents a psychological state in the interaction between individuals and specific objects, encompassing willingness, heightened attention, concentration, and positive sentiments toward the object. Investment interest signifies an individual's intrinsic drive to comprehend, seek information, and actively engage in investment activities, manifested through actions such as attending training sessions, acquiring information, and initiating investments (Urmila et al., 2025).

According to Adnyana (2020), investment entails the allocation of a specific amount of funds to generate future returns. In Islam, investment must adhere to the principle of prudence and must be devoid of elements such as *gharar* (uncertainty), *sharar* (harm), *maisir* (gambling), *risywah* (bribery), or injustice, as stipulated in Surah Al-Baqarah: 275. Gold is regarded as a permissible investment instrument under sharia, provided it is not utilized for speculative purposes and is executed under appropriate sharia contracts, such as *bai'*, *murabahah*, *wakalah*, or *wadiah*. Fatwa DSN-MUI No. 77/DSN-MUI/VI/2010 permits the non-cash trading of gold under specified conditions. The types of sharia-compliant gold investments include, first Physical gold, this involves investment in gold bars or coins, stored either personally or through custodial services (Sujit et al., 2025). Hudha (2021) asserts that physical gold trading is permissible under sharia if conducted in cash via *bai'* (spot sale) contracts, where the gold is immediately delivered upon full payment. Then there is Sharia digital gold savings, this investment product enables individuals to save small quantities of gold digitally (Nadhriati & Suparmin, 2023). In this system, gold is entrusted to financial institutions under a *wadiah yad amanah* contract, signifying that it is stored without being utilized by the institution (Salim, 2024). For the purchase and storage of gold on behalf of customers, a *wakalah bil ujah* contract is employed, whereby authority

is delegated for a fee (*ujrah*) (Nadhriati & Suparmin, 2023). To ensure compliance with sharia principles, these services must offer features for the physical delivery of gold as proof of ownership (*qabdh*), in accordance with Fatwa DSN-MUI No. 77/DSN-MUI/VI/2010. Lastly, Sharia gold installment plans, these are financing products that allow customers to acquire gold on credit with installment payments over a defined period. Fauziah & Surya (2016) indicate that these plans typically utilize the *murabahah* contract, where the gold is delivered after full or substantial payment. The *murabahah* contract represents a cost-plus sale with agreed profit margins disclosed to the buyer.

In this study there are 4 formulated hypotheses. H1 is the level of Islamic economic literacy that positively influences interest in sharia gold investment. H2 is the motivation positively influences interest in sharia gold investment. H3 is the inclusivity positively influences interest in sharia gold investment. H4 is the risk perception negatively influences interest in sharia gold investment.

This study builds upon the research conducted by Anggraini & Cahyono (2025), which examined the influence of Islamic financial literacy and investment risk on gold investment decisions at Pegadaian Syariah in Jepara using primary data collected through questionnaires. Their study demonstrated that Islamic financial literacy exerts a positive and significant effect on gold investment decisions, reinforcing the notion that a deeper understanding of sharia finance principles enhances individuals' interest in and adoption of compliant investment instruments. By establishing literacy as a critical driver of investment behavior, Anggraini provided an important foundation for subsequent investigations into Islamic investment decision-making.

The present study extends this prior work in two key directions to provide a more nuanced and comprehensive analysis. First, rather than examining the general public in Jepara, this research focuses on students at Universitas Gadjah Mada (UGM), representing Indonesia's younger, educated generation of potential investors. As members of Generation Z and emerging millennials, these students are at a formative stage in developing long-term financial behaviors and are expected to shape the future landscape of sharia-compliant finance. Second, in addition to Islamic economic literacy and risk perception, this study introduces two new variables: motivation and sharia financial inclusivity that enrich the analytical framework. By incorporating these variables, the research moves beyond assessing knowledge and perceived risk alone, instead capturing how personal drive and access to Islamic financial services interact to influence investment interest.

The study evaluates five key variables, Islamic economic literacy, motivation, sharia financial inclusivity, risk perception, and students' interest in sharia gold investment. Islamic economic literacy is assessed through six dimensions: understanding of Islamic economics, familiarity with Islamic social finance institutions, awareness of halal products and services, ability to manage finances based on sharia principles, numerical competence in Islamic economics, and attitudes toward future-oriented financial planning. Investment interest is measured both quantitatively, using a Likert scale, and behaviorally, through respondents' stated willingness to allocate funds toward sharia-compliant investment products. This multidimensional approach enables the study to not only identify statistically significant determinants but also to uncover deeper behavioral insights into how young Muslim investors evaluate and engage with gold as a sharia-compliant investment instrument.

2. Methods

This study employed a quantitative research design to examine the factors influencing students' interest in sharia gold investment. The research integrates econometric modeling and machine learning to obtain both inferential and predictive insights. The methodology was carefully structured to ensure replicability, transparency, and consistency with current best practices in empirical financial research.

2.1 Research design

This research adopts a positivist epistemological stance, assuming that investment interest can be objectively measured using structured instruments and statistically tested to draw generalizable conclusions. The study design is explanatory, aiming to identify positively associated with relationships between independent variables (Islamic economic literacy, motivation, financial inclusivity, and risk perception) and the dependent variable (interest in sharia gold investment). A cross-sectional survey was conducted because it provides a snapshot of attitudes and perceptions at a single point in time, which is suitable for examining behavioral intentions without requiring long-term tracking.

2.2 Research location, timing, population, and sample

The study was conducted among undergraduate students of Universitas Gadjah Mada (UGM), Yogyakarta, Indonesia. UGM students were selected because they represent a diverse academic community with exposure to financial literacy programs, making them an appropriate population for evaluating investment interest in sharia-compliant products. The research location is described textually rather than using a map to maintain clarity and because the population is institutionally well-defined. Data collection occurred between May and July 2024, a period marked by rising awareness of Islamic finance and increasing promotion of gold-based savings instruments. This timing was strategically chosen to capture informed perceptions during an active phase of product dissemination.

The study population consisted of UGM undergraduate students enrolled in the 2023/2024 academic year. A purposive sampling technique was applied to select respondents who met specific criteria: familiarity with basic investment concepts, access to online financial services, and willingness to complete the questionnaire voluntarily. A total of 173 valid responses were obtained. The sample size exceeds the minimum threshold required for ordered logit regression and machine learning analysis, ensuring sufficient statistical power.

2.3 Variables and measures

The dependent variable is interest in sharia gold investment, measured on an ordinal Likert scale ranging from “very low interest” to “very high interest.” Independent variables include Islamic economic literacy (X1) that is measured using a structured questionnaire adapted from prior studies on financial literacy, focusing on knowledge of sharia investment principles. Then there is motivation (X2) that is assessed through items measuring personal drive, perceived benefits, and long-term financial goals. Financial inclusivity (X3) that is evaluated by students’ access to financial services, digital payment platforms, and investment opportunities. Lastly there is risk perception (X4) that is measured by perceived uncertainty, volatility, and risk tolerance regarding gold investment. All items were measured using a 5-point Likert scale, where higher scores represent greater literacy, motivation, inclusivity, or risk perception. The questionnaire was reviewed by two subject-matter experts to ensure content validity.

2.4 Data collection data analysis

The primary data were collected via online questionnaires (Google Forms) distributed through academic networks, faculty groups, and student organizations. Respondents were informed that their participation was voluntary and anonymous, in line with research ethics. Two complementary approaches used are ordered Logit Regression model was employed to examine how the independent variables influence students’ interest in sharia gold investment. This model is appropriate for ordinal dependent variables because it estimates the probability of respondents being in higher or lower interest categories. Also Random Forest Classifier to complement regression results with predictive analysis, a

Random Forest Classifier was applied. This machine learning algorithm aggregates multiple decision trees to improve prediction accuracy and assess variable importance. Given that the dependent variable categories were imbalanced, the Synthetic Minority Oversampling Technique (SMOTE) was used to balance the dataset. SMOTE creates synthetic samples of the minority class to prevent model bias toward majority responses. The machine learning workflow included data preprocessing (cleaning and encoding); applying 5-fold cross-validation to evaluate model performance; calculating metrics such as accuracy, recall, precision, and F1-score; generating feature importance scores to compare with regression findings.

3. Results and Discussion

3.1 Descriptive statistics of respondents

The study involved 173 active undergraduate students from Universitas Gadjah Mada. The majority of respondents were female (59.5%) and primarily from the Faculty of Economics and Business (50.3%). This indicates that awareness and interest in sharia-compliant investment products extend across academic disciplines, although students from economics-related fields have a stronger presence in the sample. Most respondents (65%) had never invested in sharia gold before, indicating that investment interest is still largely at the intention stage rather than actual behavior. This aligns with the Theory of Planned Behavior (TPB), which states that intention precedes action. The average scores of the independent variables show that students generally have moderate to high levels of Islamic economic literacy, motivation, and access to financial services, while risk perception varies more widely among respondents. These descriptive findings provide an initial overview of the research population and establish the foundation for further statistical and predictive analysis.

Table 1. Demographic distribution of respondents

Variable	Total	Percent	
Gender	Male	70	40.5%
	Female	103	59.5%
Age	17 Year old	2	1.2%
	18 Year old	21	12.1%
	19 Year old	39	22.5%
	20 Year old	55	31.8%
	21 Year old	37	21.4%
	22 Year old	16	9.2%
	23 Year old	1	0.6%
	24 Year old	1	0.6%
	25 Year old	1	0.6%
Income Level	< 1,000,000	106	61%
	1,000,000 - 2,000,000	41	24%
	2,000,000 - 3,000,000	17	10%
	> 3,000,000	9	5%
Investment Experience	Has Ever	61	35%
	Has Never	112	65%
Faculty	Economics and Business	87	50.3%
	Cultural Sciences	9	5.2%
	Engineering	13	7.5%
	Vocational School	21	12.1%
	Agriculture	8	4.6%
	Law	3	1.7%
	Dentistry	2	1.2%
	Medicine, Public Health, and Nursing	5	2.8%
	Social and Political Sciences	7	4%
	Mathematics and Natural Sciences	5	2.9%

Animal Science	2	1.2%
Geography	2	1.2%
Veterinary Medicine	3	1.7%
Pharmacy	2	1.2%
Forestry	2	1.2%
Biology	1	0.6%
Psychology	1	0.6%

3.2 Reliability and multicollinearity testing

Before estimating the ordered logit model, the reliability of the survey instrument and the presence of multicollinearity among variables were tested to ensure validity and robustness of the analysis. Multicollinearity testing was conducted to ensure that the independent variables are not excessively correlated with one another. The tolerance values are well above 0.10 and the VIF values are well below 10, indicating that there are no serious multicollinearity issues that could distort regression estimates. These preliminary tests confirm that the dataset is valid and stable for use in subsequent modeling. These diagnostic results confirm that the data meet the necessary assumptions for reliable estimation. The questionnaire demonstrates strong internal reliability, and no problematic multicollinearity exists among variables. Consequently, the regression analysis can be performed with confidence in the validity of the findings.

Table 2. Presents the results of the multicollinearity test

Variable	VIF	1/VIF
Islamic Economic Literacy	1.58	0.633790
Motivation	1.47	0.679195
Financial Inclusivity	1.45	0.687809
Interest in Sharia Gold Investment	1.25	0.800200
Risk Perception	1.03	0.974899
Mean VIF	1.33	

Reliability testing using Cronbach’s Alpha showed satisfactory internal consistency for all independent variables (≥ 0.70). The dependent variable (investment interest) scored 0.5189, slightly below the standard threshold, but still captured meaningful empirical variation. Previous research notes that behavioral constructs among young populations may display lower reliability due to dynamic attitudes (Raykov et al., 2024).

Table 3. Presents the reliability test results

Independent Variables	Cronbach's Alpha
Islamic Economic Literacy	0.8024
Motivation	0.8411
Financial Inclusivity	0.8281
Risk Perception	0.7134
Interest in Sharia Gold Investment	0.5189

3.3 Ordered logit regression results

The ordered logit regression (*ologit*) model was applied to determine how Islamic financial literacy, motivation, sharia financial inclusivity, and risk perception influence students’ interest in sharia gold investment. Robust standard errors were used to account for potential heteroskedasticity. The results show that the model is statistically significant overall (LR $\chi^2(5) = 48.32, p < 0.01$), with a Pseudo R^2 of 0.0614. The likelihood ratio chi-square test confirms that the model is statistically significant at the 1% level, indicating that the explanatory variables collectively provide meaningful information about variations in students’ investment interest. The pseudo R-squared value, while moderate, is consistent

with similar behavioral studies where decision-making is influenced by both measurable and unobservable factors.

Table 4. Summarizes the regression results

	Description	Odds Ratio	Robust SE	p-Value
Dependents Variables	Interest in Sharia Gold Investment			
Independent Variables	Islamic Economic Literacy	1.122	0.0653	0.048**
	Motivation	2.450	0.7927	0.006***
	Financial Inclusivity	1.249	0.2485	0.264
	Risk Perception	0.962	0.2280	0.870

* p -value<0.1; ** p -value<0.05; *** p -value<0.01

Two variables were significant positive predictors of students' interest in sharia gold investment are islamic economic literacy (odds ratio = 1.122, p = 0.048): Each one-unit increase in literacy score raises the likelihood of higher investment interest by 12.2%. Higher literacy levels increase the probability that a student reports stronger investment interest, suggesting that understanding sharia principles directly translates into confidence in evaluating gold as a compliant financial instrument. This finding aligns with the *maqashid* sharia principle of *hifz al-mal* (protection of wealth), consistent with prior studies (Risman et al., 2024). Besides that, motivation also shows a significant influence (odds ratio = 2.450, p = 0.006), indicating that students with high motivation are 2.45 times more likely to demonstrate strong interest in sharia investment compared to those with lower motivation. Motivation demonstrates an even stronger positive effect, indicating that students with clear financial goals or a strong desire for economic independence are much more likely to express interest in sharia gold investment. This supports the Qur'anic principle in Surah At-Taubah [9]:105 regarding the value of purposeful effort and aligns with the Theory of Planned Behavior, where intention drives investment behavior.

Financial inclusivity (p = 0.264) and risk perception (p = 0.870) were not statistically significant, suggesting these factors do not yet drive early-stage investment intentions. The lack of significance for inclusivity suggests that, at the intention stage, students' willingness to invest is shaped more by personal knowledge and drive than by immediate access to Islamic financial services. The non-significant effect of risk perception indicates that students do not view gold as a risky instrument, reinforcing its reputation as a stable and inflation-resistant asset.

Marginal probability analysis confirms these results. A one-unit increase in Islamic financial literacy is associated with a measurable rise in the likelihood of students choosing the highest categories of investment interest, holding other variables constant. Motivation exhibits an even greater marginal effect than literacy, confirming its dominant role as a determinant of investment interest. Conversely, variations in inclusivity and risk perception do little to change predicted probabilities, aligning with their lack of statistical significance. The regression model is expressed as:

$$\text{Investment Interest} = \beta_0 + \beta_1 \text{Motivation} + \beta_2 \text{Islamic Literacy} + \beta_3 \text{Inclusivity} + \beta_4 \text{Risk Perception} + \epsilon \quad (\text{Eq. 1})$$

Overall, the ordered logit regression results indicate that Islamic financial literacy and motivation are direct significant predictor drivers of sharia gold investment interest among students. Meanwhile, inclusivity and risk perception play a weaker role at this stage, setting the stage for a deeper exploration of these relationships through the machine learning analysis presented in the next section.

3.4 Predictive modeling with random forest

To complement the ordered logit regression and provide a predictive perspective, this study applies a Random Forest classification model. While regression analysis identifies

significant predictor relationships and statistical significance, machine learning methods such as Random Forest evaluate which variables are most important in predicting students' interest in sharia gold investment, regardless of strict statistical assumptions. The evaluation process was conducted using a 5-Fold Stratified Cross-Validation technique, which preserves the proportion of target classes in each fold and minimizes potential bias toward the majority class. The model demonstrates consistent performance with an average accuracy of 97.81% and only minor deviation, indicating strong predictive stability. Table 5. Analysis of investment interest classification performance using random forest after SMOTE

Class	Precision	Recall	F1-score	Support
Not interested	0.98	0.95	0.96	169
Interested	0.95	0.98	0.96	169
Accuracy	-	-	0.96	338
Macro average	0.96	0.96	0.96	338
Weighted average	0.96	0.96	0.96	338

Because the distribution of respondents' investment interest is unbalanced (with most students falling into the "high interest" category), the Synthetic Minority Oversampling Technique (SMOTE) was applied. SMOTE generates synthetic data for the minority class by interpolating between nearest neighbors rather than simply duplicating observations. This process produces a more balanced class distribution, preventing the model from being biased toward the dominant class.

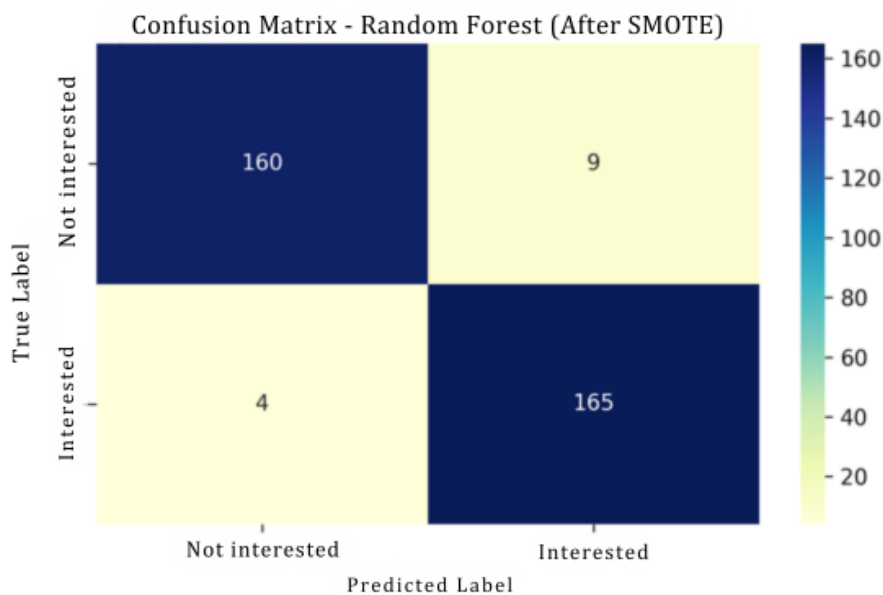


Fig. 2. Shows the classification performance after SMOTE

After SMOTE was applied, the Random Forest model maintained high predictive performance, achieving 96.15% accuracy, with 98% recall and an F1-score of 96% for the "interested" class. These metrics indicate that the model effectively recognizes students who are interested in sharia gold investment, with only a small portion misclassified. This demonstrates that the model has both high sensitivity (ability to correctly identify positive cases) and precision (ability to avoid false positives). Random Forest assigns feature importance weights to each predictor variable. The results show that sharia financial inclusivity (36.7%) is the most influential factor, followed closely by Islamic economic literacy (33.9%), while motivation and risk perception contribute relatively less. These findings reinforce the ordered logit results showing that literacy is important but also highlight that inclusivity exerts the greatest predictive power when considering investment interest holistically.

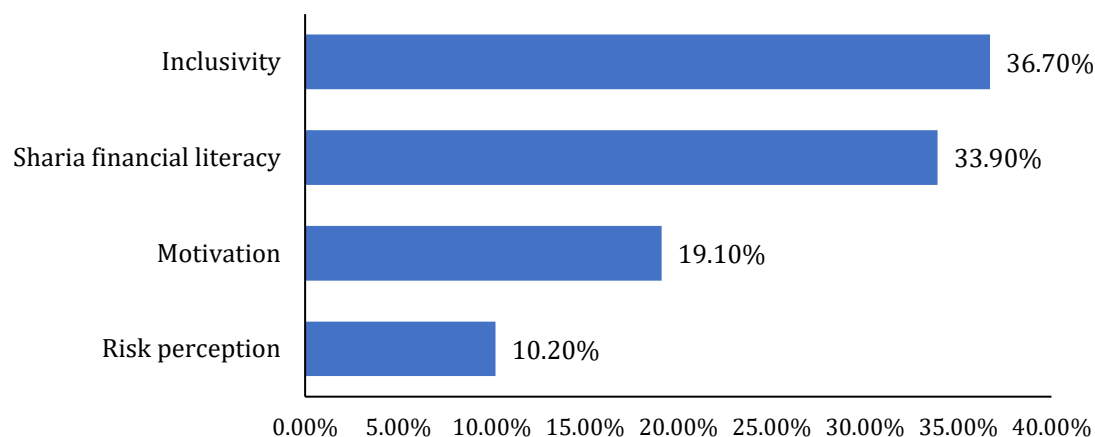


Fig. 3. Displays the feature importance ranking

The analysis suggests that students consider not only potential returns but also the accessibility of sharia-compliant financial products when forming investment interests. This aligns with the principles of *maqashid syariah* particularly *hifz al-mal* (protection of wealth) and *taysir* (facilitation) which emphasize that Islamic finance should promote inclusive, equitable, and non-burdensome systems. Moreover, it reflects the *ijma'* (consensus) among scholars that a key objective of sharia is *tahqiq al-'adl* (realizing justice) and *raf' al-haraj* (removing hardship). The results therefore indicate that building an inclusive and easily accessible sharia financial ecosystem, combined with efforts to enhance Islamic financial literacy, provides an effective strategy to encourage greater investment interest among students. These findings are further illustrated in Figure 2 (Random Forest classification performance after SMOTE) and Figure 3 (Relative contribution of variables to investment interest predictions).

3.5 Discussion

The findings demonstrate that Islamic economic literacy and motivation significantly influence students' interest in sharia gold investment. These results are consistent with previous studies (Anggraini & Cahyono, 2025; Lubis, 2019), which found that knowledge and internal drive are critical in shaping Islamic investment behavior. By applying both ordered logit regression and Random Forest analysis, this study offers complementary perspectives: significant predictor with relationships are identified through inferential statistics, while predictive accuracy is assessed through machine learning.

First, the study finds that Islamic financial literacy significantly and positively affects investment interest. Students with a deeper understanding of sharia principles such as the prohibition of *riba* (usury), *gharar* (excessive uncertainty), and *maysir* (gambling) demonstrate greater confidence in evaluating gold as a compliant financial instrument. This result is consistent with prior studies (Anggraini & Cahyono, 2025; Lubis, 2019), which highlight that literacy is not merely theoretical knowledge but a practical capability that shapes investment decisions. Financial literacy equips young investors to assess investment risk, understand potential returns, and distinguish sharia-compliant products from conventional alternatives. In the context of Islamic finance, literacy also provides moral assurance that investment choices align with religious values, reinforcing both rational and spiritual motivations.

Second, motivation emerges as the most powerful determinant in the ordered logit model. Students with clear financial goals, such as achieving economic independence or accumulating long-term savings, are more inclined to consider sharia gold investment. This aligns with behavioral theories suggesting that intrinsic motivation acts as a catalyst for proactive financial decision-making. Motivation channels personal aspirations into concrete actions, reinforcing findings by Badriatin et al. (2022), who note that young

investors tend to prioritize opportunities over potential risks. Such motivation-driven behavior underscores the importance of fostering goal-setting attitudes among students to translate interest into actual participation in sharia-compliant investments.

Third, although sharia financial inclusivity is not statistically significant in the regression model, the Random Forest analysis identifies it as the most influential predictive variable. This apparent discrepancy reflects the difference between significant predictor inference and predictive modeling. While inclusivity may not directly cause students to express interest at the intention stage, it strongly predicts which students are more consistently classified as highly interested. In other words, inclusivity acts as an enabling environment rather than a direct motivator, it amplifies the effects of literacy and motivation when investment decisions move from intention to practice.

This finding aligns with the *maqashid syariah* principle of *taysir* (facilitation) and *tahqiq al-'adl* (realizing justice), which emphasize that Islamic finance should be accessible and equitable. Limited access to sharia investment instruments may create friction even among students who are knowledgeable and motivated, suggesting that infrastructure development such as campus-linked Islamic financial services or digital investment platforms is crucial to translate intention into real participation.

Fourth, risk perception shows only a weak influence on investment interest, indicating that students do not view gold as a high-risk instrument. This is consistent with gold's longstanding reputation as a safe-haven asset, resistant to inflation and market volatility. While conventional finance theory suggests that risk attitudes are central to investment behavior, the relative stability of gold diminishes this concern. However, the lack of sensitivity to risk also highlights the need for targeted financial education to ensure students make informed decisions with realistic expectations about price fluctuations and market dynamics.

By combining ordered logit regression (for significant predictor) and Random Forest (for predictive insights), this study provides a multi-dimensional understanding of investment interest. Regression clarifies which factors directly influence intention literacy and motivation while machine learning highlights which variables are most critical for classification inclusivity and literacy. Together, these findings suggest that improving Islamic financial literacy and strengthening motivation are the most effective immediate strategies, while enhancing financial inclusivity will ensure these strategies have sustainable, long-term impact.

Overall, from a theoretical standpoint, the findings reinforce behavioral finance perspectives that investment decisions are shaped by both cognitive factors (knowledge and information processing) and affective factors (motivation, aspirations). Within Islamic economics, the results demonstrate that financial behavior aligns with both rational utility maximization and adherence to ethical-religious values. The positive role of literacy confirms that when individuals understand the moral and practical dimensions of Islamic finance, they are more likely to engage in sharia-compliant investment behavior.

Practically, these insights highlight several policy priorities. First, educational institutions should integrate Islamic financial literacy modules into their curricula, fostering informed decision-making from an early age. Then, stakeholders in the Islamic finance industry should develop accessible investment platforms tailored to student users, reducing barriers to entry and demonstrating the ease of participating in sharia-compliant markets. Next, awareness programs should focus not only on theoretical knowledge but also on building motivation, goal-setting skills, and understanding the real benefits of early investment. Lastly, regulators and financial service providers must ensure that inclusivity through equitable distribution channels, affordable products, and user-friendly digital solutions, supports the growing interest in Islamic investments.

The study confirms that knowledge and internal drive are the primary significant predictor drivers of sharia gold investment interest, while access and inclusivity serve as critical supporting factors in practice. The lack of emphasis on risk perception reflects gold's status as a perceived safe-haven asset among students, but it also calls for balanced education on potential price volatility. In line with Islamic economic principles, the findings

emphasize that a well-designed, inclusive financial ecosystem combined with strong financial literacy programs is essential to encourage responsible participation in sharia-compliant investments.

4. Conclusions

This study finds that Islamic financial literacy and motivation are the two factors that significantly influence Universitas Gadjah Mada students' interest in sharia gold investment. Students who possess a deeper understanding of sharia-compliant financial concepts are better equipped to evaluate investment products and make informed decisions aligned with their religious principles. Similarly, students with strong motivation whether driven by personal financial goals, aspirations for economic independence, or a desire to uphold Islamic values show a greater tendency to consider sharia gold investment as a viable means of wealth accumulation. These findings are consistent with previous studies, which have repeatedly demonstrated that a solid grasp of sharia principles combined with strong internal drive forms a critical foundation for shaping Islamic investment behavior and fostering early participation in financial markets.

Meanwhile, the application of a machine learning approach, particularly using a Random Forest model, reveals that inclusivity in access to sharia financial services has the highest predictive contribution to investment interest. This indicates that when sharia-compliant financial infrastructure is widely available, easily accessible, and user-friendly, it creates an enabling environment that supports investment decisions. The difference between the statistical regression results and the machine learning findings is not a contradiction but rather a complementary insight. Literacy and motivation may function as direct and significant predictor determinants that guide students' decision-making at a personal level, while inclusivity operates as a structural prerequisite that amplifies the practical effects of both variables. In the broader context of developing a robust sharia financial ecosystem, this highlights that improving infrastructure, simplifying service accessibility, and removing barriers to entry are critical levers for stimulating interest in sharia investment instruments, which can then be reinforced by individual knowledge and motivation.

This study was conducted exclusively among Universitas Gadjah Mada students, with the majority of respondents coming from the Faculty of Economics and Business. Most respondents reported a monthly income of less than IDR 1,000,000, which may affect their investment capacity and financial priorities. While this focus provides valuable insights into the attitudes of a key demographic educated youth who represent the next generation of investors it also limits the generalizability of the findings. Future research should expand the respondent base to include individuals from more diverse academic disciplines, income brackets, and geographical regions. By incorporating students from non-economic backgrounds and young professionals from varying economic levels, subsequent studies would be better positioned to produce results that are more comprehensive, nuanced, and broadly representative of Indonesia's Muslim population.

As a follow-up to these findings, we recommend that stakeholders, particularly educational institutions from primary through higher education integrate Islamic economics, especially sharia financial literacy, into their curricula. Embedding these concepts in formal education would not only strengthen students' theoretical understanding of Islamic finance but also build practical skills to apply this knowledge in real-world investment decisions. Such efforts would help close the gap between financial literacy and actual participation in sharia-compliant investment products, fostering sustainable financial behavior from an early age. Ultimately, strengthening sharia financial literacy through education is expected to nurture a generation that is both financially informed and value-driven, creating long-term momentum for the growth of sharia gold investment and Islamic finance as a whole.

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Author Contribution

Conceptualization, V.A.F.; Methodology, A.N.S.; Software, A.N.S.; Validation, A.N.S., V.A.F., and A.R.Z.; Formal Analysis, A.N.S.; Investigation, A.N.S., V.A.F., and A.R.Z.; Resources, V.A.F., and A.R.Z.; Data Curation, A.N.S.; Writing – Original Draft Preparation, V.A.F.; Writing – Review & Editing, A.N.S., V.A.F., and A.R.Z.; Visualization, A.N.S., V.A.F. and A.R.Z.; Supervision, A.N.S., V.A.F. and A.R.Z.; Project Administration, A.N.S.

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During the preparation of this work, the authors used Grammarly to assist in improving grammar, clarity, and academic tone of the manuscript. After using this tool, the authors reviewed and edited the content as needed and took full responsibility for the content of the publication.

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