

## Exploring influential factors in selecting halal pharmaceuticals among students (study case IAI Tazkia & University Ibnu Khaldun in Bogor)



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### ABSTRACT

Users of halal-certified medicines involve individuals, groups, and organizations; individual actors cannot be separated from students. Several factors influence students who use halal-certified medicines, including attitudes, subjective norms, and purchase intentions. These factors are motivated by the desires and needs of students. This study investigates the impact of knowledge, attitudes, and subjective norms on the purchase intention of halal-certified medicines. The research explores the factors influencing the intention to purchase halal-certified over-the-counter medicines among students at IAI Tazkia and Ibn Khaldun University in Bogor. Data collection primarily comprises primary data. The primary data utilized in this study were gathered by distributing questionnaires to 215 student respondents. This research uses a qualitative methodology and is analyzed using Structural Equation Modeling (SEM) with the help of *SmartPLS 3 software* with 215 respondents. The results showed that the attitude variables and subjective norms were significantly affected. On the other hand, the knowledge variable was found to have a low influence on the purchase intention of halal medicines among Muslim students, indicating that other factors may play a more significant role in their purchase decisions.

**Keywords:** Attitude, Halal medicine, Purchase intention, Subjective norms

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### INTRODUCTION

Looking at the development of the pharmaceutical industry in Indonesia, which is a critical player in the study, there are currently several pharmaceutical companies in Indonesia, including *Biofarma*, *Indofarma*, *Pharos*, and *Kimia Farma*, which are state-owned, as well as local companies such as *Dexa Medica*, *Kalbe*, and *Konimex*, which have played an essential role in the pharmaceutical industry. Foreign pharmaceutical companies such as *Bayer*, *Merck*, and *Pfizer* are also present in Indonesia (Fitriani, 2023). Over-the-counter medicines are a type of medicine that can be purchased without a prescription and are often available in shops or pharmacies. They are easily accessible and are usually labeled with a green circle with a black border. They treat minor and common health problems, such as *Paracetamol*, *Oskadon*, *Promag*, *Waisan*, *Panadol*, *Bintang Toejoe*, *Bodrex*, and others. Health problems are severe in every country, both in developed and developing countries, especially in Indonesia. Health is one of the decisive factors for the Human Development Index, so its quality must be maintained and improved. One of the public health commitments made by the Indonesian government is the availability of medicines for the population, which includes ensuring the availability of halal-certified medicines for Muslim citizens (Gita & Sulistyowati, 2020).

According to the State of the Global Islamic Economy Report 2022, total spending by Muslims worldwide on halal products such as food, beverages, medicines, clothing, cosmetics, tourism, and media reached USD 2 trillion in 2021. In 2021, global Muslim spending on pharmaceuticals increased by 6.5% compared to 2020, from USD 93.5 billion to USD 100 billion. Moreover, in 2022, pharmaceutical spending increased by 6.7% or US\$ 106 billion. It is estimated that pharmaceutical spending will reach US\$ 129 billion by 2025. Regarding domestic spending alone, Indonesia spent US\$

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5.4 billion on pharmaceutical consumption in 2021. This makes Indonesia the country with the highest pharmaceutical expenditure among ASEAN countries (Fitriani, 2023).

The consumption of over-the-counter medicines by the population is influenced by the ability of the population to obtain these medicines, which usually depends on several factors, namely the affordability of the price, the availability of over-the-counter medicines in the population, and other factors. Another factor influencing the decision to purchase over-the-counter medicines is the preference for halal labeling. In general, most people, even those living in Muslim-majority countries, do not know precisely how to recognize whether a product is halal or not, especially if it is a manufactured product (Priantina & Sopian, 2023). Halal labeling is an essential aspect of medicine packaging as it guarantees that the product complies with halal principles for consumption. In recent years, consumer awareness of the products they buy has increased, as evidenced by the growing interest of Muslims and non-Muslims in choosing halal products. A VosViewer analysis from (Priantina, 2021) revealed three clusters for the terms halal, food, and supply chain, showing that many researchers are interested in the keyword halal certification. People believe that halal products guarantee safety and hygiene according to Islamic principles. Halal means that it is permissible for Muslims to do or consume something. As part of many citizens, the need for halal products is a basic need of the Indonesian Muslim community (Rauf et al., 2023).

In a hadith narrated by Abu ad-Dardâ', The Messenger of Allah said, *“Verily Allah sends down a disease and its cure and gives a cure for each disease. Therefore, seek treatment, but do not seek treatment with what is unlawful”* (HR Abu Dawud). The Prophet said that Allah, the Exalted, has alleviated the disease and provided a cure. This shows that treatment in Islam is a gift from Allah, the Exalted. The main message of this hadith is that Muslims are encouraged to seek treatment when they are ill. However, it is emphasized that this treatment must be with halal means or medicines. This means that when seeking healing, one should not use methods or materials that contradict religious teachings, such as the use of medicines that are forbidden or haram in Islam. One category of medication, according to the Indonesian Food and Drug Authority (BPOM), is over-the-counter (OTC) drugs. OTC drugs are available for purchase without requiring a doctor's prescription. These non-prescription medications can be found in pharmacies, drugstores, or small shops. A distinctive feature of these drugs is a unique mark consisting of a black circle with a green color inside. The ingredients in OTC drugs are generally safe as long as they are taken according to the instructions on the packaging (Priantina & Sopian, 2023). The wide availability of OTC drugs requires people to be careful in their selection, ensuring the drugs are certified halal. This research focuses on university students, even though they often follow their parents' choices. The aim is to understand their awareness and decision-making regarding halal OTC drugs, especially since many live away from their parents and must make their own medication choices.

This study examines the influence of knowledge, attitudes, and subjective norms on the intention to purchase halal-certified over-the-counter medicines among Muslim students. It aims to shed light on the factors that influence purchase intentions for medicines, the importance of halal certification for purchase behavior, the role of knowledge in purchase interest, and the influence of subjective norms and attitudes on the decision-making process. Ismail (2022) studied the effect of halal labels, brands, and prices on purchasing decisions for over-the-counter drugs in the province of West Java (Fitriani, 2023) studied the impact of the halal label on the purchase interest of over-the-counter drugs in the city of Bandung. Umah (2017) studied the effect of halal labels, promotion, and price on purchasing decisions for over-the-counter drugs on students of UII Islamic boarding schools.

The novelty of this research lies in the broader case study that goes beyond geographical limitations and is not restricted to a specific area. In addition, the study explores novel aspects, such as different sample data and variables that could influence interest in purchasing halal-certified medicines. Over-the-counter medicines are available in various settings, such as general pharmacies, specialty pharmacies, hospitals, or licensed drugstores, and offer consumers the flexibility to choose products without a doctor's prescription. This flexibility also includes choosing products with specific labeling, such as halal, preferred brands, or cheaper options.

Building on previous research that emphasizes the role of knowledge, attitudes, and subjective norms in shaping consumer behavior, this study aims to deepen our understanding of how these factors

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influence the purchase intention of halal-certified over-the-counter medicines among Muslim students. The study recognizes the central role of the halal seal as an indicator of halal compliance. It highlights its importance in the eyes of Muslim consumers, who see it as crucial in choosing clean, safe, high-quality products. Furthermore, the study recognizes that knowledge significantly influences purchase intention, with attitudes and subjective norms playing a significant role in decision-making. Ultimately, this research not only improves our understanding of the determinants of consumer purchase intention for halal products but also paves the way for further studies aimed at a deeper understanding of consumer behavior and its impact on the overall halal pharmaceutical market. The author has identified several indicators that may influence the purchase intention of halal-certified medicines, including halal certification, purchase interest, knowledge, attitudes, and subjective norms, and the following studies provide support for the author's choice of indicators.

Research by Fitriani (2023) According to the Halal Product Guarantee Act No. 33 of 2014, the halal seal is a mark that confirms a product's compliance with halal standards. The Halal Product Guarantee Agency (BPJPH) is authorized to issue and revoke halal certificates and seals for products. The BPJPH is also authorized to determine the halal seal, which is widely used nationally. The halal logo indicates that a product is by Islamic law and can be consumed by Muslims. Muslim consumers see the halal label as a sign that a product is clean, safe, and high-quality. For Muslim consumers, halal is a must.

In an earlier study by Mahardika (2019), he found that knowledge influences purchase interest. Knowledge refers to facts, feelings, or experiences known to a person or a group of people and can be interpreted to mean that a person's awareness or acquired knowledge can be used as experience and learning to decide a person's buying interest, according to a study by Sugrah (2019). Piaget's constructivist learning theory emphasizes that learning is an active process in which individuals construct knowledge through experience, reflection, and interaction with the environment.

According to Azwar (2010), an attitude is an individual's response or reaction to an object, which then influences the individual's behavior towards that object in a particular way. In a research conducted by (Purwantini & Tripalupi, 2021), he found that attitudinal variables influence purchase intention. His research aligns with several previous studies by Sigit (2006). This can be seen from the significant value of less than 5% and the study he used namely multiple linear analysis.

According to Sigit (2006), subjective norms refer to individual perceptions or views about other people's beliefs that can influence decisions to do or not to do a specific behavior. In the context of interest in purchasing halal medicines, subjective norms may reflect how individuals interpret or perceive the views, beliefs, or recommendations of those around them regarding the purchase of halal-certified medicines. Subjective norms, in this case, may be an essential factor influencing an individual's intention or interest in choosing a halal-labeled medicine based on their perception of the views of others around them.

In the study by Aryadhe et al. (2018), they found that the subjective norm variable influences the purchase interest in Honda Scoopy motorbikes. His study is consistent with that of Hirunpattarasilp & Udomkit (2011), who found that subjective norms are a factor that can stimulate customers' purchase intention for a product. The study conducted by Purwantini & Tripalupi (2021) found an influence of subjective norms on consumers' purchase interest in halal cosmetics.

Research conducted by Fitriani (2023) found that the halal label variable positively influences purchase intention, and Bandung City considers the halal label a consideration. Research conducted by Umah (2017) found that the halal label variable partially has a significant effect on drug purchases. Research conducted by Ismail (2022) concluded that the halal label variable dramatically influences the purchase of over-the-counter drugs in West Java Province. It can be concluded that the halal label variable significantly influences the purchase intention of drugs. This finding is consistent with previous studies highlighting the importance of the halal label in influencing consumer behavior, especially in the city of Bandung and the province of West Java (Fitriani, 2023; Ismail, 2022; Umah, 2017). Therefore, the presence of the halal label becomes an essential consideration for consumers when choosing medicines.

The theory of Planned Behaviour further develops the Theory of Reasoned Action, which is more specific in predicting individual behavior. This theory emphasizes that a person's decision to take or not

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to take action depends on their intention or desire, which is influenced by several factors. In the Theory of Reasoned Action, behavior prediction is based on individual intentions, which are influenced by Attitudes toward behavior and social influence. However, in the Theory of Planned Behaviour, an essential factor influencing individual intentions is added, namely perceived behavioral control (Ajzen, 2005).

Perceived attitudes add a new dimension to the understanding of behavior. These factors include individuals' beliefs about how much they have the control or power to perform specific actions. In other words, in addition to attitudes towards behavior and social influence, the Theory of Planned Behaviour emphasizes the importance of a person's perception of their ability to control or carry out planned actions. The Theory of Planned Behaviour assumes that the consumer's decision-making process when purchasing a product starts from the individual's information, which is then processed through cognitive mechanisms such as attention and comprehension (Ma'ruf & Salamah, 2023).

Previous research has emphasized several relevant psychological concepts to understand the factors influencing consumers' purchase intention for a product or service. Knowledge, attitudes, and subjective norms have significantly impacted consumer decision-making. Therefore, in the context of halal medicine purchase, we need to consider how these three factors interact and influence each other to influence consumer purchase intention. As Allah has stated, humans are the most perfect creatures created by Allah SWT, and they have various needs to sustain their lives. These needs include clothing, food, shelter, security, self-esteem, and actualization. Humans also have the responsibility as caliphs to fulfill their duties in the world, including consuming halal products and avoiding Allah's prohibitions.

Based on previous research by Mahardika (2019), which shows that knowledge affects purchase interest, and Piaget's theory, which emphasizes that learning is an active process in which individuals construct their knowledge through experience, reflection, and interaction with the environment, the hypothesis is that there is a positive relationship between consumers' knowledge and their purchase interest, with knowledge acquired through experience, reflection, and interaction with the environment playing a role in shaping purchase interest.

Based on the concept of attitude described by Azwar (2010) as an individual's reaction to an object that influences individual behavior towards that object, and the results of research by Purwantini & Tripalupi (2021) showing that attitudinal variables influence purchase intention, and previous research by Sigit (2006), it also shows a significant relationship between attitude and purchase intention; the author can hypothesize a positive relationship between consumers' attitudes towards a product and their purchase intention, whereby the attitude expressed by individuals towards the product influences their propensity to purchase the product.

Based on the concept of subjective norms, described by Sigit (2006) as individual perceptions of other people's beliefs that have the potential to influence certain behavioral decisions and research findings, Aryadhe et al. (2018) show that the subjective norm variable influences the purchase intention of Honda Scoopy motorbikes, which show that the subjective norm variable influences the purchase intention of Honda Scoopy motorbikes, and previous research by Hirunpattarasilp & Udomkit (2011), which also found that subjective norms stimulate customers' purchase intention for a product. The hypothesis can be formulated that there is a positive relationship between subjective norms and consumers' interest in purchasing halal medicines, with individual perceptions of the beliefs and views of others around them about the importance of halal certification when purchasing medicines influencing the individual's inclination to choose medicines with a halal label.

## **RESEARCH METHOD**

### **Methods**

The research methodology employed in this study is the quantitative research method, specifically descriptive causal research, as it investigates cause-and-effect relationships between variables. Data collection involved administering questionnaires to a sample population of 215 respondent students, selected through random sampling to ensure representativeness. As recommended by (Ma'ruf & Salamah, 2023), additional text was incorporated into the questionnaire to enhance the rigor of data analysis. Structural Equation Modeling (SEM) was utilized for data analysis facilitated by SmartPLS 3 software. SEM allows simultaneous testing of relationships that are challenging to measure



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individually (Ningsi & Agustina, 2018). Sugiono's journal statement, which was further examined by Arifin (2020), states that a population is a generalization area consisting of objects or subjects with specific qualities and characteristics determined by the researcher for the study and from which conclusions are drawn. This study uses the population of students from IAI Tazkia and Ibnu Khaldun University in Bogor. The statement by Sugiono in his journal, which was further examined by Arifin (2020), is that a sample is a subset of the population that possesses specific characteristics. The subjects of this study will be students from IAI Tazkia and Ibn Khaldun University in Bogor who are interested in using halal-certified over-the-counter medicines. Data collection in this study primarily involves. The statement by Sugiono in his journal, which was further examined by Arifin (2020), is that primary data is direct data. Researchers can directly obtain primary data through observations, interviews, questionnaires, and other methods (Riyanto & Hatmawan, 2020). The primary data utilized in this research was gathered via questionnaires administered to 215 participants. This sample size adequately fulfills the minimum criteria for applying the SEM-PLS methodology, which also stipulates a requirement of 215 respondents.

The investigation employed Structural Equation Modeling Partial Least Square (SEM-PLS), a statistical method developed explicitly for evaluating models characterized by linear interrelations among variables, especially those that are not directly measurable. The assessment procedure is divided into two distinct phases:

1. Measurement Model Evaluation (Outer Model): There are three main aspects of evaluation:
  - a. Convergent Validity: Loading factor values exceeding 0.7 indicate convergent validity.
  - b. Discriminant Validity: Cross-loading values exceeding 0.7 signify discriminant validity between constructs.
  - c. Internal Consistency: Assessed through the Composite Reliability value, expected to be above 0.7. Cronbach's Alpha coefficient can also serve as an indicator of internal consistency (Saputra, 2018).

2. Structural Model Evaluation (Inner Model):

This evaluation aims to project relationships between latent variables based on theoretical foundations. R-square serves as an indicator to assess the model's explanatory power in endogenous constructs. Additionally, t-statistic values from path coefficient tests are utilized to evaluate the significance of relationships between variables (Ningsi & Agustina, 2018).

## **RESULT AND DISCUSSION**

The research comprised 215 respondents, with 53% identifying as female and falling within the age range of 18 to 22. The table below delineates the distribution of respondents by gender and age, revealing a higher percentage of females at 53%. Predominantly, respondents were in the 18 to 22 age bracket, with 22-year-olds constituting the highest proportion at 83.27% of the total sample. The remaining respondents, surpassing 22 years of age, accounted for 16.28%, including individuals in the late adolescence category.

This study focuses on students who are interested in using halal-certified medicines. Data distributed to students indicates that 91.16% have either used or expressed a desire to use halal-certified/labeled drugs, while the remaining 8.84% have not. One influencing factor is the Theory of Planned Behavior. The primary objective of this study is to empirically assess the applicability of the theory in predicting the purchase intention of halal-certified/labeled drugs among university students.

### **Analysis result**

1. Outer model (measurement model)

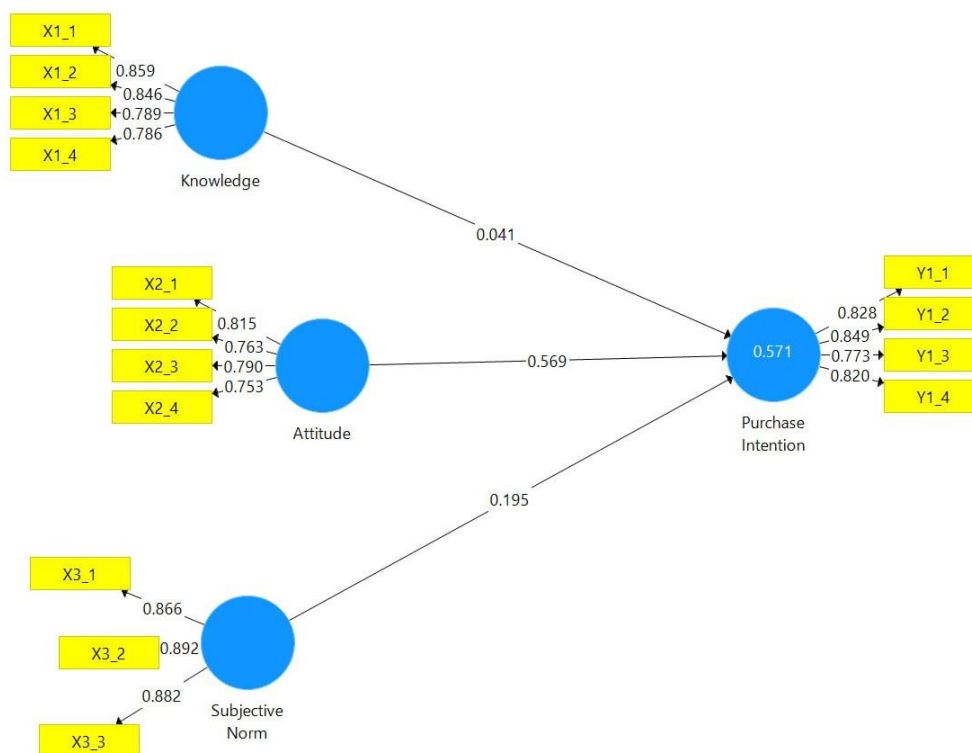
This model underwent two tests – the validity test and the reliability test.

- a. Validity Test

The correlation between the indicator and construct score values is assessed to validate reflective indicators. Reflective indicators exhibit changes in the construct when other indicators within the same construct are altered. The results, computed using Smart PLS 3.0 software, are shown in Table 1.

**Table 1.** Convergent validity.

Variables	Indicator	Outer Loading	Ave	Results
Knowledge	X1_1	0.859	0.673	Valid
	X1_2	0.846		Valid
	X1_3	0.789		Valid
	X1_4	0.786		Valid
Attitude	X2_1	0.815	0.610	Valid
	X2_2	0.763		Valid
	X2_3	0.790		Valid
	X2_4	0.753		Valid
Subjective Norm	X3_1	0.866	0.774	Valid
	X3_2	0.892		Valid
	X3_3	0.882		Valid
Purchase Intention	Y_1	0.828	0.669	Valid
	Y_2	0.849		Valid
	Y_3	0.773		Valid
	Y_4	0.820		Valid



**Figure 1.** Modeling factor loading output.

Source: Primary data (questionnaire) in running, 2023

Table 1 and Figure 1 above indicate that the variables Knowledge (X1), Attitude (X2), Subjective Norms (X3), and Purchase Intention (Y) exhibit an Average Variance Extracted (AVE) value surpassing 0.5 (Chin & Todd, 1995; Werts et al., 1974), an AVE value exceeding 0.5 is highly recommended.

b. Reliability Test

The outcomes of the reliability test for the Knowledge (X1), Attitude (X2), Subjective Norms (X3), and Purchase Intention (Y) variables, analyzed using Smart-PLS software, can be succinctly presented in Table 2 as detailed below.

**Table 2.** Reliability table.

	<b>Cronbach's Alpha</b>	<b>rho_A</b>	<b>Composite Reliability</b>
Purchase Intention (Y)	0.835	0.839	0.890
Subjective Norm (X3)	0.854	0.856	0.911
Knowledge (X1)	0.838	0.845	0.892
Attitude (X2)	0.788	0.803	0.862

The reliability of the entire model is also guaranteed with a Composite Reliability value greater than 0.7 and a Cronbach's Alpha value exceeding 0.6. This confirms that all variables used can be considered valid and consistently reliable.

2. Inner Model

This model is designed to identify and explain the cause-and-effect relationships between latent variables under investigation in this context (Sarstedt et al., 2017). The process in the model is also used to study the relationships between exogenous and endogenous components. This process aims to create a model based on theory and concepts (Fahmi, 2022).

a. Structural Model Evaluation

The R-squared value is used to measure the extent to which the model fits the current data; this is one way to assess the structural research model. When the R-Square for endogenous variables reaches values of 0.25, 0.50, and 0.75, the research model has a small, moderate, or significant impact on the model structure. The results indicate significant structural model integrity (Hair Jr et al., 2014).

**Table 3.** Fit model.

<b>Variable</b>	<b>R- Square</b>	<b>R- Square Adjusted</b>	<b>SRMR</b>	<b>Chi-Square</b>	<b>NFI</b>
Purchase intention	0.571	0.564	0.071	380.985	0.795

Table 3 illustrates the findings obtained from evaluating the structural model through R-square in this research. Furthermore, three additional testing metrics, namely chi-square, standardized root mean square residual (SRMR), and the normed fit index (NFI), were employed to evaluate the adequacy of the proposed model. The acceptable threshold for the chi-square parameter is established at a minimum value of 0.9, whereas the SRMR should not exceed 0.1 (Fahmi et al., 2023). Table 3 illustrates that the Chi-square statistic exceeds 0.9, the SRMR statistic is below 0.1, and the NFI statistic is 79.5% (0.795). These results suggest that the model evaluated in this research outperforms the null model, supporting the conclusion that this model demonstrates a satisfactory fit (Hair Jr et al., 2014).

**Table 4.** F-square.

	<b>F- Square</b>
Knowledge → Purchase Intentions	0.002
Attitude → Purchase Intentions	0.289
Subjective Norm → Purchase Intentions	0.034

In the subsequent phase, an inner model assessment is performed by computing the f-square, which quantifies the impact of each pathway within the research framework. The f<sup>2</sup> values employed to evaluate the effect size are categorized as 0.02, 0.15, and 0.35,

representing small, moderate, and substantial effects, respectively, on the relationships among the paths in the model (Fahmi, 2022). The results of this study indicate that there are two f-square values with moderate effects (0.289 and 0.034) and one f-square value with a small effect (0.002), as listed in Table 4.

b. Hypothesis Test Results

The hypothesis testing result is as depicted in the table below:

**Table 5.** T – statistic

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Subjective Norm → Purchase Intention	0.195	0.193	0.096	2.037	0.021
Knowledge → Purchase Intention	0.041	0.049	0.054	0.762	0.223
Attitude → Purchase Intention	0.569	0.565	0.088	6.433	0.000

At the hypothesis testing phase, an examination is conducted to verify the validity of the research hypotheses. The bootstrap method is employed for hypothesis testing, particularly in generating results for inner model or structural model assessments, such as R-Square, parameter coefficients, and t-statistics (Sayyida & Alwiyah, 2018). The T-statistic value (Table 5) in bootstrap PLS-SEM gauges the significance of determinants in the study, with a value deemed adequate if it exceeds 1.96 and the p-value considered significant if it is below 0.05 (Hair Jr et al., 2014; Ramayah et al., 2017).

**Discussion**

1. The effect of knowledge on buying interest

The t-statistic value of 0.762, falling below the threshold of 1.96, suggests that knowledge has an insignificant effect on the interest in purchasing halal medicines (p-value of 0.223 > 0.05). This finding aligns with research by Hamdan et al. (2013), exploring the impact of knowledge on halal food assessment, revealing a less robust correlation between knowledge about halal food and purchasing decisions.

2. The Effect of Attitude on Purchase Intention

The exogenous variable attitude significantly positively affects the interest in buying halal-certified medicines, with a path coefficient of 0.569. The t-statistic value of 6.433, surpassing 1.96, indicates a positive and significant effect on buying interest in halal-certified medicines (p-value of 0.00 < 0.05). This finding resonates with research by Izzuddin (2018), stating that the halal awareness variable positively and significantly affects buying interest.

3. The influence of Subjective Norms on purchase intention

Subjective norm variables demonstrate a significant positive effect on the interest in buying halal medicines, evident in the path coefficient value of 0.195 and t-statistic of 2.037, exceeding 1.96. Hence, it can be concluded that subjective norms positively influence the intention to purchase halal-certified medicines. In-depth analysis reveals that subjective norms positively impact buying interest in halal-certified medicines, supported by a t-statistic value of 2.037, surpassing 1.96, and a p-value of 0.021 below 0.05. This study concludes that the exogenous variable of subjective norms has a positive and significant effect on buying interest in halal-certified drugs. This finding aligns with research by Rofifah (2020), suggesting that the subjective norm variable positively affects consumer buying interest in halal-certified cosmetic products, emphasizing the correlation between medicine and cosmetics due to shared active ingredients. Recommendation: Future research endeavors exploring interest in buying halal medicines should consider broadening the scope with more extensive research objectives,



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encompassing diverse consumer groups and geographic regions. Additionally, expanding the analysis of factors influencing interest in buying halal medicines, using more detailed measurement methods and qualitative research, would provide deeper insights into this dynamic phenomenon.

## CONCLUSION

Attitude emerges as a significant factor shaping the interest in buying halal medicines, with Smart-PLS calculations highlighting its direct influence on purchasing interest. This aligns with prior research demonstrating that awareness of a product's halal status positively affects purchase intention. Subjective norms also play a vital role in shaping interest. Smart-PLS calculations align with previous research indicating their impact on consumer buying interest in products with halal certification, such as cosmetics. Awareness of halal medicines, positive attitudes, and subjective norms collectively influence university students' interest in buying halal medicines. However, enhancing the relationship between knowledge and purchasing decisions requires more comprehensive information and improved education regarding halal medicines. Knowledge is, however, not found to be significant in this study.

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