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The effect of halal labels on Muslim consumers' purchase decision for cough medicines

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A B S T R A C T

Indonesia, a country with a predominantly Muslim population, mandates halal certification for all products that are entering, circulating, and trading within its territory, including medicines with several critical halal points. Therefore, this research aimed to better understand the characteristics of Muslim consumers in DKI Jakarta as well as the factors that affected purchase decision for cough medicines. A total of 100 respondents were surveyed, and the collected data were analyzed using descriptive analysis and structural equation modeling partial least squares (SEM-PLS). The results showed that halal labels, personal factors, and products quality all had a substantial effect on DKI Jakarta Muslim consumers' purchase decision for cough medicines. However, social and psychological factors had limited impact on the decision.

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1 Introduction

Indonesia, which has the largest Muslim population globally, is offering great potential for halal medicines market. According to DinarStandard (2022), the country was the world's fourth-largest Muslim consumers market in the pharmaceutical sector in 2021. In 2019, Halal Products Assurance Organizing Body (BPJPH) mandated halal certification as a form of enforcing Law Number 33 of 2014 concerning Halal Products Assurance (Ministry of Religion, 2019). The introduction of mandatory halal certification was based on two phases, which the first began in 2019 and focused on food and beverage products. The second phase began in 2021, with a focus on products other than food and beverages, including pharmaceutical or medicinal products (Ministry of Religion 2021).

Indonesia, with its tropical climate, is prone to extreme weather fluctuations during the transition period. These variations in temperature and air pressure can force the body to adjust instinctively, leading to a decrease in immunity and increased vulnerability to illnesses such as cough (Health Office 2022). A significant method to cure cough is to use medicines which are available in two forms, including liquid and tablets. However, liquid medicines are critical for halal status as they can contain alcohol or ethanol (LPPOM MUI 2020). Ethanol is widely used in the production of liquid medicines, particularly as a solvent and preservative in cough medicines (Suseno & Qomariyah 2021).

The legality of using ethanol in medicines depends on the type, making it challenging to determine whether ethanol used comes from the khamr industry. Meanwhile, ethanol derived from non-khamr industrial products falls into two legal categories, including mubah (permissible when not medically harmful) and haram (forbidden when medically harmful) (MUI 2009). The use of ethanol is further regulated by BPOM Regulation Number HK.03.1.23.06.10.5166 (BPOM 2010), which requires producers to include the percentage of ethanol content on their packaging to guarantee consumers' safety. In 2018, academics from Indonesian Fatwa Commission decided that it was obligatory to seek treatment according to Islamic law and to use holy and halal medicines (MUI 2018).

Halal status of medicines can be confirmed through a trusted halal certification. However, pharmaceutical products in Indonesia are not universally halal-certified. Despite being a country with a predominantly Muslim population, the progress towards the establishment of halal certification for pharmaceutical products has been modest. Currently, only 4% of the total pharmaceutical products manufactured in the country are halal certified. In the context of medicines, ethanol is an important factor in determining halal status. The law of using ethanol varies according to its origin. Ethanol that is not produced from kharmr is permitted under several conditions, including it must not endanger health, not being abused, being safe and adequately dosing, and not be consumed to create intoxication (MUI 2018).

This research found that 9 out of 15 samples of liquid cough medicines contained ethanol with the largest concentration being 1.569%, and none of the packaging included the percentage of the ethanol content (Suseno & Qomariyah 2021). This omission violates BPOM RI Regulation Number 03.1.23.06.10.5166 of 2010 which mandates the inclusion of the percentage of ethanol content in the packaging to protect consumers' health. According to Central Bureau of Statistics (BPS 2021), the monthly per capita medical expenditure in urban areas surpasses that of rural areas. DKI Jakarta, a large city in Indonesia, has a predominantly Muslim population, with 9,431,949 Muslims, accounting for about 83.84% of the total population (Ministry of Home Affairs 2022). Additionally, the city ranks first in average monthly per capita expenditure on medicines, with costs reaching IDR 7,561 in 2022 (BPS 2022). Based on the Indonesian data (2023), among the big cities in Indonesia, DKI Jakarta has the second-largest consumption rate of cough medicines, totaling 30.8%.

Based on the above description, the objective of this research is to determine the characteristics of Muslim consumers and investigate the impact of halal labels on purchase decision for cough medicines, considering the issues outlined previously. It also examined additional variables, including religiosity and knowledge of halal products, which affect the perception of halal labels in the research model. While previous reviews on the effect of halal labels on cough medicines were conducted in Malang, this research focused on DKI Jakarta as the selected location.

2 Methodology

2.1 Sources and Methods of Data Collection

In this research, primary data were collected using a quantitative method. Data collection was conducted from March to April 2023 in DKI Jakarta by distributing questionnaires through social media platforms such

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Table 1: Knowledge of Indonesia halal label on respondents

Respondent characteristics	Classification	Total	Percentage (%)
Domicile	West Jakarta	19	10
	Central Jakarta	21	21
	South Jakarta	40	40
	East Jakarta	9	9
	North Jakarta	1	1
	Kepulauan Seribu	1	1
Gender	Male	9	9
	Female	91	91
Age	17 – 25	86	86
	26 – 35	7	7
	36 – 45	0	0
	46 – 55	4	4
	56 – 65	3	3
Occupation	Student	77	77
	Private employees	15	15
	Civil servant	1	1
	Freelance	1	1
	Housewife	3	3
	Entrepreneur	2	2
	Teacher	1	1
Income	< IDR 1.000.000	37	37
	IDR 1.000.000 – IDR 2.500.000	33	33
	IDR 2.500.001 – IDR 5.000.000	26	26
	IDR 5.000.001 – IDR 7.500.000	1	1
	IDR 7.500.001 – IDR 10.000.000	2	2
	> IDR 10.000.000	1	1
Expenditure	< IDR 1.000.000	44	44
	IDR 1.000.000 – IDR 2.500.000	44	44
	IDR 2.500.001 – IDR 5.000.000	9	9
	IDR 5.000.001 – IDR 7.500.000	2	2
	> IDR 10.000.000	1	1

as Twitter, Instagram, and TikTok. A total of 100 respondents was selected using the Slovin formula, with criteria including being Muslim, residing in DKI Jakarta, and currently consuming or having purchased cough medicines.

2.2 General Description of Structural Equation Modeling Partial Least Square (SEM-PLS)

Structural Equation Modeling (SEM) was a multivariate analytical method used to simultaneously analyze the relationship between several variables with many indicators by combining factor and path analysis (Latan 2013). To analyze data, this research adopted SEM-PLS also known as PLS path modeling, which consisted of outer and inner models (Hair *et al.* 2017).

a. Outer Model: The model described the relationship between latent variables and all indicators. The measurement model was determined using both reliability and validity tests.

b. Inner Model: This model explained the relationship between latent variables.

3 Results

3.1 Respondent Characteristics

Respondent characteristics, including information on domicile, gender, age, occupation, income, expenditure, type of cough medicines, brand, and price, were summarized in Table 1. The questionnaire data, completed by 100 respondents, showed that the majority resided in East Jakarta, totaling 40%. The majority of respondents were female, with a total of 91%, and only 9% were male. The total population primarily comprised those aged 17-25 years, suggesting that most of Generation Z were selected. This was due to the distribution of questionnaires through social media platforms, such as Twitter, Instagram, TikTok, and others, which were popular among the younger generation.

The analysis results showed that the majority of respondents were students, and the occupations with the lowest number were civil servants, freelancers, and teachers, each represented by only one respondent (1%). The majority of respondents had a monthly income of less than IDR 1,000,000, totaling 37%, similar with the fact that most of them, who were students rely on pocket money as the primary source of income. Table 1 also showed that the monthly expenditure of most respondents fell in the range of IDR 1,000,000 to IDR 2,500,000, with a total of 44%.

Based on the type of cough medicines consumed, 87% of respondents used liquid cough medicines, while 13% chose tablets. The data obtained from 100 respondents showed that there were 24 brands of medicines. Most respondents mentioned OBH to be one of the brands that they frequently consumed. There were 6 brands of cough medicines mentioned by those who were not registered on Halal Indonesian Ulema Council (MUI) page, including alpara caplet, decadryl, demacolin, hufagrip, lapisiv, and sanadryl. In this research, most respondents purchased cough medicines in the range of IDR 10,000–IDR 20,000.

3.2 Knowledge of the Indonesian Official Halal Labels

Table 2 presented that 40% of respondents were knowledgeable about MUI halal labels, while 39% of them only have the knowledge about the latest Indonesian halal labels. Therefore, it could be interpreted that most respondents already knew halal labels used in Indonesia.

Table 2: Knowledge of Indonesia halal label on respondents

No	Halal label	Respondents	No	Halal label	Respondents
1		40	3		39
2		16	4		5

3.3 Analysis of Cough Medicines Purchase decision in DKI Jakarta

3.3.1 Evaluation of the Outer Model

a. Convergent Validity Test
Convergent validity test plays an important role in determining the outer model as well as examining the correlation between each indicator's value and the corresponding latent variable. As shown in Figure 1, the loading factor value for each indicator has met the criteria of $\geq$ 0.5 after discarding several indicators. In addition to the loading factor value, Average Variance Extracted (AVE) value could be used to assess convergent validity, with a criteria of > 0.5. Table 3 presented that AVE value obtained during the retest was greater than 0.5, suggesting each latent variable satisfied the validity criteria. Therefore, it could be inferred that all latent variables in this research were considered valid.

Table 3: Average variance extracted value of convergent validity

Latent variable	AVE value
Quality product (KL)	0.586
Purchase decision (KP)	0.555
Halal label (LH)	0.571
Knowledge of halal products (PP)	0.504
Personal factor (PR)	0.558
Psychological factor (PSI)	0.607
Religiosity (RG)	0.529
Social factor (SOS)	0.563

b. Discriminant Validity Test
Table 4 presented Fornell Larcker Criterion values, which showed the validity of the indicators utilized in this research. The correlation values of each indicator with the latent variables were higher than those of the other latent variables.

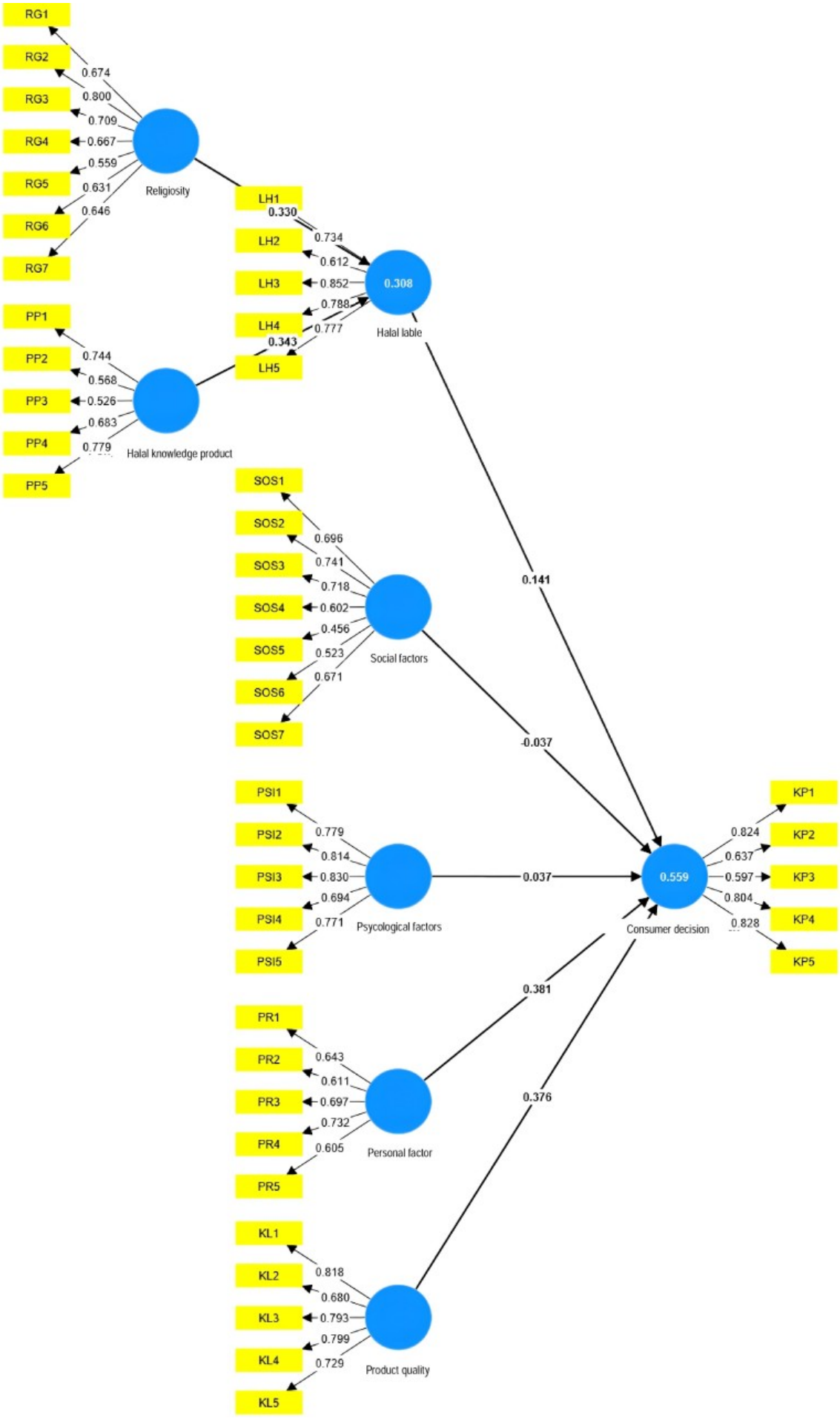

Figure 1: The loading factor value model for each indicator; purchase decision (KP), halal label (LH), religiosity (RG), knowledge of halal products (PP), social factor (SOS), psychological factor (PSI), personal factor (PR), and quality product (KL)

Table 4: Fornell Larcker Criterion value of discriminant validity

	KL	KP	LH	PP	PR	PSI	RG	SOS
KL	0.766							
KP	0.672	0.745						
LH	0.299	0.338	0.756					
PP	0.563	0.672	0.468	0.710				
PR	0.562	0.637	0.199	0.348	0.747			
PSI	0.655	0.510	0.201	0.442	0.472	0.779		
RG	0.278	0.219	0.435	0.268	0.345	0.265	0.727	
SOS	0.470	0.344	0.322	0.386	0.348	0.398	0.172	0.750

Note: Quality product (KL), Purchase decision (KP), halal label (LH), knowledge of halal products (PP), personal factor (PR), psychological factor (PSI), religiosity (RG), and social factor (SOS)

a. Reliability Test

The next step in the process was reliability test, which was carried out to assess the dependability of the research variables. In order for a variable to be considered dependable, composite reliability score must be greater than 0.7. As shown in Table 5, all the latent variables have composite reliability score above this threshold, indicating that they were reliable.

Table 5: Composite reliability value of reability test

Latent variable	Composite reliability
Quality product (KL)	0.876
Purchase decision (KP)	0.859
Halal label (LH)	0.869
Knowledge of halal products (PP)	0.797
Personal factor (PR)	0.793
Psychological factor (PSI)	0.885
Religiosity (RG)	0.842
Social factor (SOS)	0.824

3.3.2 Evaluation of the Inner Model

a. Path Significance Test

In this research, path significance test was carried out at a level of 5% or 0.05. When the t-statistic value was $\geq$ 1.96 and the p-value was $\leq$ 0.05, the hypothesis could be accepted, suggesting that the relationship between variables was considered statistically significant. The direction of the relationship between variables was established by examining the original sample value. When the original sample value was > 0, the direction of the relationship became positive, but when the value was < 0, the direction of the relationship would be negative. As shown in Table 6, path coefficient was used to measure the strength and direction of the relationship between variables.

Table 6: Path coefficient value of inner model

	Original sample	T-statistics	P-value
Product quality → Purchase decision	0.402	3.597	0.000
Halal label → Purchase decision	0.147	2.062	0.039
Knowledge of halal products → Halal label	0.379	4.547	0.000
Personal factor → Purchase decision	0.369	3.725	0.000
Psychological factor → Purchase decision	0.061	0.593	0.553
Religiosity → Halal label	0.334	4.073	0.000
Social factor → Purchase decision	-0.044	0.508	0.612

b. Coefficient of Determination

Based on R-square value presented in Table 7, halal labels had a value of 0.323, indicating that the level of religiosity and knowledge of halal products among consumers could account for 32.3% of the effect on halal labels. Other factors outside the scope of this research explained the remaining portion of the effect. Similarly, purchase decision variable had R-square value of 0.570, indicating that factors such as halal labels, personal, psychological, social, and products quality could collectively account for 57% of the effect on purchase decision. The remaining portion of the effect was attributed to factors beyond the scope of this investigation.

Table 7: R-square value of inner model

	Original sample	T-statistics
Purchase decision	0.570	0.548
Halal label	0.323	0.309

4 Discussion

4.1 The Effect of Religiosity on Halal Label

Based on Table 6, religiosity had a significant impact on halal labels, as evidenced by t-statistic value of 4.073, which was greater than the critical value of 1.96 (t-table) at a significance level of 0.05 (p-value < 0.05, or 0.000). The direction of effect of religiosity on halal labels was positive, as shown by the original sample value of 0.334, which was greater than 0. This suggested that an increase in religiosity was associated with an increase in awareness of halal labels among consumers. Religiosity referred to an individual's level of commitment to religion, and it included attitudes and behaviors that reflect such commitment. When there was an increase in religiosity, individual was more likely to adhere to religious teachings. In this research, the positive effect of religiosity on halal labels suggested that an increase in religious commitment among consumers was associated with an increase in awareness of halal labels on food products.

4.2 The Effect of Knowledge of Halal Product on Halal Labels

Path coefficient analysis indicated t-statistic of 4.547, p-value of 0.000, and an original sample variable knowledge of halal products equal to 0.379. The results showed there was a significant relationship between knowledge of halal products and halal labels. This relationship indicated that an individual with higher levels of knowledge of halal products was more likely to be concerned with the presence of halal labels on products.

4.3 The Effect of Halal Label on Purchase Decision

Based on Table 6, halal labels had a significant effect on purchase decision, with t-statistic value of 2.062 and p-value of 0.039. This suggested that the presence of halal labels on cough medicines positively affected purchase decision of Muslim consumers in DKI Jakarta, as indicated by the original sample value of 0.147 > 0. Therefore, there was a positive relationship between halal labels and purchase decision, similar to the observation of Ismail *et al*. (2022) and Munir *et al*. (2019), who showed that halal labels had a profound effect on purchase decision.

4.4 The Effect of Personal Factors on Purchase Decision

As presented in Table 6, t-statistic and p-value of personal factors were 3.725 and 0.000, respectively, suggesting that the variable had a significant effect on purchase decision. Similarly, the original sample value of 0.369, was greater than 0, indicating a positive relationship between personal factors and purchase decision. This relationship showed that the higher the personal factors affect an individual, the more likely they were to make purchase decision for cough medicines. The results were supported by the observation of Gea (2021), who found that personal factors significantly affect purchase decision for medicines.

4.5 The Effect of Psychological Factors on Purchase Decision

The analysis results showed that psychological factors had an insignificant relationship with purchase decision. T-statistic value of less than 1.96 and p-value of greater than 0.05 indicated that the direction of the relationship between the two variables was positive, but not statistically significant. This implied that the higher the psychological factors affected an individual, the more likely they were to make a purchase. However, the results of (Gea 2021) showed that psychological factors affected purchase decision for medicines. This study found no statistically significant relationship between the two variables, similar to the observation of (Diana *et al*. 2022) who showed that psychological factors did not affect purchase decision.

4.6 The Effect of Social Factors on Purchase Decision

Based on path coefficient results, social factors were found to have t-statistic of 0.508 and p-value of 0.612, indicating that the relationship with purchase decision was insignificant. The variable had an original sample value of -0.044, suggesting a negative relationship between social factors and purchase decision. This implied that the social environment had limited effect on purchase decision for cough medicines. The results were in line with the observation of Diana *et al*. (2022) who found that social factors did not affect purchase decision for traditional medicines. Previous reviews reported that recommendations from friends and family did not affect purchase decision for medicines (Temechewu & Gebremedhin 2020).

4.7 The Effect of Product Quality on Purchase Decision

As shown in Table 6, t-statistic and p-value for products quality were 3.597 and 0.000, respectively, suggesting that the variable had a significant effect on purchase decision for cough medicines. The positive relationship between products quality and purchase decision showed that improving the quality of cough medicines would lead to increased purchases by Muslim consumers in DKI Jakarta. This was in line with the results of Anggreini & Suwitho (2020) and Alfairi & Karneli (2019), which showed the importance of products in influencing purchase decision.

5 Conclusion

In conclusion, respondents selected for this research were predominantly from East Jakarta City, with the majority falling in the Generation Z demographic (17-25 years of age). Most of respondents were students and the monthly income was < IDR 1,000,000. Their monthly expenses were < IDR 1,000,000 and between the range of IDR 1,000,000 –

IDR 2,500,000. Most respondents consumed liquid cough medicines under the OBH brand because it has a price in the range of IDR 10,000 – IDR 20,000. Based on the data processing results using SEM-PLS, the factors influencing Muslim consumers' purchase decision for cough medicines were halal labels, personal factors, and products quality. Meanwhile, social and psychological factors did not affect purchase decision for such medicines. Producers were then expected to understand the needs of Muslim consumers for cough medicines. Based on the results, consumers' purchase decision for cough medicines in DKI Jakarta were affected by the presence of halal labels and products quality. This suggested that Muslim consumers were increasingly considering the halalness of medicines and the quality of the ones to be purchased. Therefore, producers were expected to produce medicines with safer ingredients and could consider applying for halal certification. They were also expected to improve products quality to make an individual trust and purchase more cough medicines. Due to the limited knowledge about haram ingredients, the government or authorized institutions were expected to educate the public about knowledge of these ingredients.

Conflict of Interest

The authors declare no conflict of interest.

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