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Consumer Intentions to Purchase Eco-Friendly Halal Food in Medan, Indonesia: An Approach Using the Theory of Planned Behavior †

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Abstract: Food and beverage products globally have experienced significant growth in line with increasing consumer demand, especially among Muslim consumers. However, the lack of robust halal governance frameworks and the deliberate adulteration of halal food products with non-halal ingredients have raised concerns among Muslim consumers. This study aimed to investigate the triggering variables that impact the intention to purchase eco-friendly halal food, particularly among college students in Medan, Indonesia. Surveys and interviews were used to collect data on college students' awareness, perceived costs of products, availability of alternative options, peer influence, cultural beliefs, and personal preferences. The findings revealed a general understanding of halal food but a lack of understanding of halal requirements. Peer groups, cultural beliefs, and personal preferences affected college students' willingness to buy. The inconsistencies in the findings were related to the influence of students' understanding of halal products when intending to buy eco-friendly halal products. This study proposes strategies to positively influence consumer behavior, particularly among college students in Medan, Indonesia, regarding halal food, which ultimately encourages its consumption and fosters a more informed and culturally diverse campus community.

Keywords: consumer behavior; intention to purchase; eco-friendly halal food; theory of planned behavior

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1. Introduction

Muslim consumers have a duty to eat halal food since it is a basic human requirement and requires correct management to be healthy for the body [1]. In the context of Islam, the Muslim community has established clear guidelines regarding the consumption of halal food and prohibited food and beverages. Halal food and drinks include (1) those obtained through halal means and (2) those that are completely halal and can be consumed [2]. According to Ref [1], halal means something that is permitted and permissible to be consumed under Islamic law.

The growing Muslim community and its increased purchasing power have led to a rise in global demand for halal food. However, the halal governance frameworks that supervise these practices are not always effectively established and are frequently managed privately, which may not fulfill the diverse needs of the Muslim population [3]. The substantial demand for halal items, especially food and drinks, has significantly impacted logistics

management, influencing the transportation and storage operations for delivering halal food and beverage products [4].

In the Republic of Indonesia, halal food products generally exhibit halal designation on their packaging in accordance with Government Rules No. 69 of the year 1999, Law 1, Section 5. This law classifies halal cuisine as "food purchased lacking any haram or prohibited components for consumption by individuals of the Islamic faith, encompassing its materials, ingredients, additives, and auxiliary substances, including processed materials through engineering, genetics, and irradiation, with management conducted in accordance with Islamic religious law". Food labels must carry the following facts: (1) the item name, (2) the component list, (3) the gross weight and fill volume, (4) the location of manufacturing or the importing firm in Indonesia, and (5) expiry date, including month and year.

The use of halal cuisine has been integrated into societal lifestyles, with inter-religious perspectives acknowledging it as a nutritious dietary choice. The non-Muslim population in Europe perceives halal cuisine as safe and nutritious. By explicitly displaying a halal certification on food packaging and enhancing technology, individuals from diverse backgrounds find it easier to make educated choices about healthy and nutritious intake [5]. This helps enhance the understanding of halal products among those with favorable experiences and exposure to pertinent information [6]. Religion is believed to significantly influence food intake, especially in Muslim nations or regions with substantial Muslim populations, since it is pivotal in influencing dietary patterns and preferences [7].

The main problem worldwide is the desire to buy environmentally friendly halal products and the illegal mixing of non-halal substances with halal goods [8]. This approach is considered fraudulent or unethical and has an impact on Muslim consumers [9]. Food components from prohibited animals, such as pork or others, can be included in the manufacturing process [8].

The reasons for the low intention to purchase eco-friendly halal food among college students may be due to several factors, including limited knowledge, the perception of higher costs, the availability of alternative options, and the influence of peer groups. Furthermore, cultural convictions, personal choices, and a lack of faith in the halal certification procedure may also impact purchasing habits [10]. A thorough research study was conducted to obtain deeper insights into the factors influencing the consumer behavior of students at Medan University regarding halal cuisine. [11]. The study aimed to investigate the underlying causes of the limited awareness by conducting surveys and interviews to gather information on the impact of peer groups, cultural beliefs, and personal preferences on the halal food purchasing choices of students [12].

The findings revealed that while there was a general understanding of what halal food represents, there was a lack of knowledge regarding the processes involved in halal certification [13]. This absence of understanding contributed to the perception of the increased costs of halal products, as students may not be fully aware of the extra measures and criteria that need to be met to ensure halal standards [14]. Furthermore, it was discovered that the influence of peer groups played a substantial role in determining students' choices, with many being swayed by the preferences of their social circle. Additionally, it became apparent that cultural beliefs and personal preferences also had a significant impact on shaping consumer behavior toward halal food [15].

The disparate findings in studies concerning the effect of attitudes, subjective norms, and awareness about halal items regarding the intention to buy eco-friendly halal food indicate a need for further research to thoroughly understand the complex factors influencing consumer behavior regarding halal food among university students [16]. A survey revealed that not all students pay attention to halal labeling on food packaging, and their selection of halal items is impacted by subjective standards and religious beliefs. Furthermore, addi-

tional studies indicate that perceived behavioral control significantly influences intentions to purchase eco-friendly halal food among students [17], while research conducted by the authors of [18] identified that purchasing behavior is affected by self-control, economic literacy, and peer influence. Implementing these proposed strategies and conducting additional research holds significant potential to positively impact the consumer behavior of Medan University students concerning halal food, thereby promoting its consumption and cultivating a more informed and culturally diverse campus community [19–21].

Consumption within Muslim culture is impacted by several factors, including halal labeling, subjective standards, attitudes, perceived behavioral control, and the understanding of what halal is [22]. This may contribute to the general knowledge of the audience and is significant for food firms. It evaluates components, starting with product materials and packaging, to instill a feeling of security for consumers, particularly college students [23]. This study presents three research topics offered by the researchers:

RQ1. Will the TPB be used to anticipate intentions to purchase eco-friendly halal food among college students in Medan?
RQ2. Are attitudes, subjective norms, and perceived behavioral controls important in explaining intentions to buy eco-friendly halal food among college students?
RQ3. Can knowledge moderate intentions to purchase eco-friendly halal food and explain the choice of halal products among college students?

The degree of behavioral intentions to buy eco-friendly halal food is influenced by the level of attitudes. Specifically, the more positively an individual feels about a behavior, the more probable it is that they will want to participate in that behavior [6]. More precisely, attitudes are acknowledged by cognitive psychology as one of the primary determinants of human behavior [24]. Fostering and sustaining environmentally friendly attitudes is essential for engaging in pro-environmental behavior. [25]. Ref. [24] implies that a consumer's intention to purchase eco-friendly halal food is predicted by their attitude toward that behavior. The following theory is proposed considering this reasoning.

H1. *The impact of mindsets will positively affect one's willingness to buy eco-friendly halal products.*

A vast number of studies [26–28] have suggested that customers are influenced by societal pressure to choose eco-friendly items. Thus, customers' intentions to buy eco-friendly halal food and halal items are predicted by subjective norms [29]. According to Ref. [30], one of the main elements affecting behavioral intentions to purchase eco-friendly halal food is subjective norms, which support this viewpoint. Consequently, it is hypothesized that

H2. *The influence of subjective norms has positive effects on the intention to buy eco-friendly halal products.*

Green product behavior and intentions to buy eco-friendly halal food are closely related to perceived behavioral control. Numerous studies have shown that, in a variety of study scenarios, intentions to purchase eco-friendly halal food are positively impacted by perceived behavioral control [29] given that behavioral control is positively correlated with both behavioral intentions to buy eco-friendly halal foods and actual behavior [22]. Therefore, it is hypothesized, based on this logic, that

H3. *The influence of perceived behavioral control will have a positive impact on the intention to purchase eco-friendly halal food products.*

A significant variable influencing the uptake of halal goods is behavioral intentions to buy eco-friendly halal food [5]. This implies that the likelihood of intentions regarding purchasing eco-friendly halal food will result in actual behavior performance increases as the strength of such intentions increases. Referring to the motivational component that has a favorable influence on behavior, Ref. [22] showed that behavioral intentions to buy eco-friendly halal food are an important determinant of purchasing behavior. Therefore, the following hypothesis is proposed:

H4. *The impact of the product they intend to buy will positively affect the habit of buying eco-friendly halal food.*

Research indicates that knowledge affects the intention to buy eco-friendly halal foods [22]. Ref [24] determined that education is the primary factor influencing the intentions to buy eco-friendly halal food. Research performed by the authors of [29] indicates that the knowledge of what halal is positively affects the intention to purchase eco-friendly halal food items. Ref [18] elucidated that knowledge has a favorable effect on the intention to buy eco-friendly halal foods. In contrast to the previously cited research, study [14] elucidates that information does not substantially affect an individual's intentions to buy eco-friendly halal food. Consequently, it is hypothesized that:

H5. *Halal knowledge will positively affect the purchasing behavior of eco-friendly halal products.*

H6. *Halal knowledge positively moderates behavioral Intentions to purchase eco-friendly halal foods, influencing the adoption behavior of purchasing halal products.*

Based on the above hypothesis, a conceptual framework was developed to describe the relationship between various factors influencing consumer purchasing behavior toward halal products, as illustrated in Figure 1.

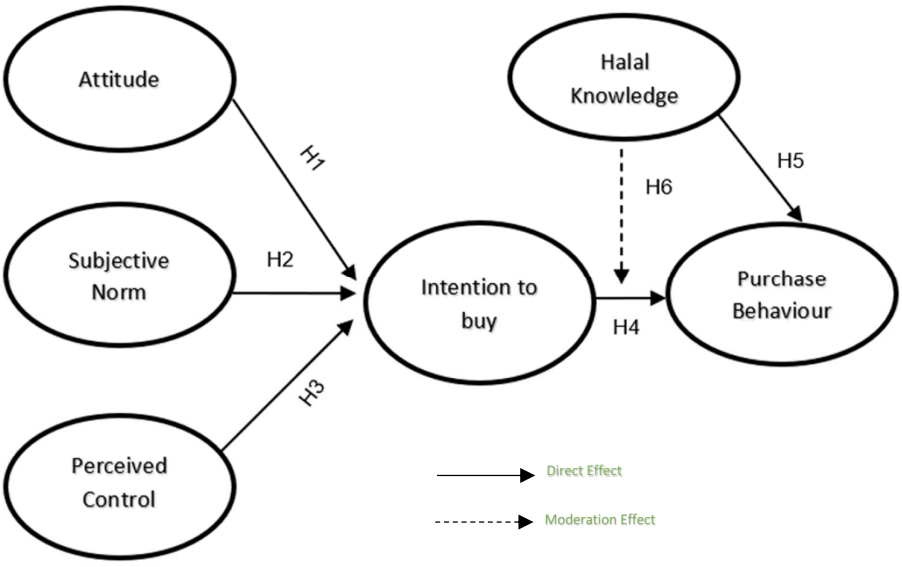


Figure 1. The main determinants of halal purchasing behavior. Source: constructed by the researcher.

The conceptual framework in Figure 1 is based on the Theory of Planned Behavior (TPB), which includes three main variables: attitude, subjective norm, and perceived control, each of which has its own hypothesis (H1, H2, H3) and influences intention to buy. This intention to buy then influences purchase behavior, as hypothesized in H4. In addition, halal knowledge also acts as a moderating or mediating variable, exerting an indirect

influence on purchasing behavior through purchase intention (H6) and having a direct influence on purchasing behavior (H5). This model illustrates how psychological factors and halal knowledge can influence consumer decisions in purchasing halal products.

2. Materials and Methods

It was found that both descriptive and numerical methods were used during the assessment. The participants were asked to evaluate topics using questionnaires on a Likert scale, with one (1) indicating "strongly disagree" and five (5) representing "strongly agree". The questionnaire was modified to incorporate measures that had been verified in past investigations. The first section obtained demographic information from respondents. The succeeding component consisted of a compilation for scaling.

A verified materials instrument was used for measurement, aligned with the established research hypothesis, and accurately assessed the intended survey constructs to help address the study's validity. With thirty participants, the pilot study yielded Cronbach alpha values of 0.702 to 0.835, indicating the achievement of internal consistency of the questionnaire [24]. The findings confirmed that questionnaires help fulfill the study's research assumptions. Participants in the study needed to be aware of halal appliance items to be qualified. Convenience sampling is a non-probability sampling method used when a sample frame is unavailable. Since the possible subjects were immediately accessible to the researcher, the data were gathered from people observed in parking spaces at universities and leisure parks. Respondents were given 255 questionnaires, resulting in a total of 200 completed surveys, which represented a positive response rate of 80%. These surveys were employed to examine the data, thereby ensuring a sample size of 200–500.

The Smart PLS software used to analyze the surveys was coded, recorded, and altered. A two-step methodology and validity were evaluated in the first phase, and the study's hypotheses were tested by analyzing the structural model.

3. Results and Discussion

3.1. An Example of the Respondent Profile

The sample of participants is well represented since 90% of respondents were between the ages of 21 and 24, and 10% were between the ages of 25 and 26. Of those in this age range, the majority were enrolled at a certain institution in the province of North Sumatra's city of Medan. According to this, up to 90% of respondents of learning age may be projected to have the total financial means to purchase halal items. This was determined by the fact that 88.6% of respondents reported having pocket money. Respondents' study levels ranged from the beginning of semester 1 to the conclusion of semester 8. As a result, awareness and use of halal products were likely already present at this level of schooling.

3.2. Measurement Model Validity and Reliability

All of the constructs' Cronbach alpha and composite reliability (CR) values were higher than the 0.70 cutoff point suggested by the authors of [24]. Thus, the dependability of composite traits could be verified. All 32 items had factor loadings ranging from 0.808 to 0.966, with each item having a factor loading of 0.5 or higher. As a result, no value was removed. By checking whether each construct's AVE value exceeded 0.5, convergent validity was evaluated. Convergent validity is confirmed in Table 1, showing that the AVEs for all nine constructs were greater than 0.5, ranging from 0.738 to 0.851. Lastly, by evaluating whether the constructs' AVEs were greater than the corresponding inter-construct correlations, discriminant validity was evaluated. Discriminant validity can be verified, as indicated in Table 1, with values ranging from 0.679 to 0.923. Consequently, the measurement model provides a satisfactory match to the data.

Table 1. Dependability and accuracy of the measuring tool.

Construct/Item	Factor Loadings	Alpha	CR	AVE
Purchase Behavior		0.960	0.963	0.738
PB1	0.833			
PB2	0.829			
PB3	0.836			
PB4	0.844			
PB5	0.831			
PB6	0.886			
PB7	0.929			
PB8	0.904			
PB9	0.881			
PB10	0.808			
Intentions to Purchase Eco-Friendly Halal Food Behavior		0.933	0.939	0.790
INT1	0.905			
INT2	0.900			
INT3	0.858			
INT4	0.961			
INT5	0.815			
Attitude		0.965	0.967	0.851
ATT1	0.851			
ATT2	0.909			
ATT3	0.963			
ATT4	0.940			
ATT5	0.966			
ATT6	0.902			
Subjective norm		0.943	0.957	0.815
SN1	0.874			
SN2	0.935			
SN3	0.888			
SN4	0.916			
SN5	0.899			
Perceived behavior control		0.864	0.866	0.787
PBC1	0.841			
PBC2	0.920			
PBC3	0.899			
Halal Knowledge		0.868	0.874	0.791
K1	0.926			
K2	0.878			
K3	0.863			

Source: SEM Pls.

3.3. Structural Model: Testing of Hypotheses

The model of the structure was constructed in Table 2 after verifying the correlation table of construct validity and reliability of the scale and AVE (Average Variance Extracted) value, which is often used to assess discriminant validity in PLS-SEM models. Regarding hypothesis testing, Table 3 presents an integrated evaluation of line coefficients, t-values, and *p*-values, revealing that attitude influences intentions to purchase eco-friendly halal food behavior; halal knowledge affects purchase behavior; intentions to purchase eco-friendly halal food behavior impacts purchase behavior; perceived behavioral control influences intentions to purchase eco-friendly halal food behavior and subjective norms.

The path coefficients for the relationships between intentions to purchase eco-friendly halal food, halal knowledge, and purchase behavior are statistically significant. The other route coefficients were not statistically significant since their t-values were below the threshold of 1.96. This indicates that six hypotheses were validated. The following is the main explanation of the mean, variance extracted (AVE), and correlation between constructs (squared correlations) used to test the validity of constructs and relationships between variables in the theoretical model presented in Table 2.

Table 2. Mean, variance extracted, and squared inter-construct correlations.

	1	2	3	4	5	6
	Attitude	Halal Knowledge	Intentions to Purchase Eco-Friendly Halal Food Behavior	Perceived Behavior Control	Purchase Behavior	Subjective Norm
Attitude	0.923					
Halal Knowledge	0.688	0.889				
Intentions to Purchase Eco-Friendly Halal Food Behavior	0.878	0.732	0.889			
Perceived Behavior Control	0.692	0.679	0.754	0.887		
Purchase Behavior	0.764	0.692	0.782	0.741	0.859	
Subjective Norm	0.912	0.742	0.890	0.783	0.805	0.903

Note: AVE is shown diagonally, with squared correlations presented underneath AVE.

Table 3. Results of the structural model.

Hypothesis Relationships	Path Coefficient	T Statistics	*p* Values	Results	f2
Attitude → Intentions to Purchase Eco-Friendly Halal Food Behavior	0.415	2.786	0.005	Supported	0.167
Subjective Norms → Intentions to Purchase Eco-Friendly Halal Food	0.377	2.489	0.013	Supported	0.102
Perceived Behavior Control → Intentions to Purchase Eco-Friendly Halal Food	0.171	2.528	0.011	Supported	0.066
Intentions to Purchase Eco-Friendly Halal Food behavior → Purchase Behavior	0.614	7.532	0	Supported	0.453
Knowledge → Purchase Behavior	0.303	2.549	0.011	Supported	0.085
Knowledge × Intentions to Purchase Eco-Friendly Halal Food → Purchase Behavior	0.027	0.705	0.481	Not Supported	0.007

This research establishes a *p*-value of 0.05 as the threshold for determining the significance of the association.

The F2 effect size, also known as the R-squared change effect, quantifies the change in the R-squared value when certain exogenous variables are introduced. F2 values of 0.02, 0.15, and 0.35 were used as benchmarks. Table 3 illustrates that halal knowledge influences adoption behavior and moderates the relationship between intentions to purchase eco-friendly halal food and adoption behavior, whereas attitude demonstrates a moderate effect on behavioral intentions to buy eco-friendly halal food. Ultimately, other study findings indicate that behavioral intentions to purchase eco-friendly halal foods significantly impact adoption behavior.

The structural model shown in Figure 2 demonstrates that up to 82.9% of students' behavioral intentions to purchase eco-friendly halal foods are geared towards purchasing

halal products. On the other hand, halal knowledge contributes up to 64.5% to moderating students' behavioral intentions to purchase eco-friendly halal foods.

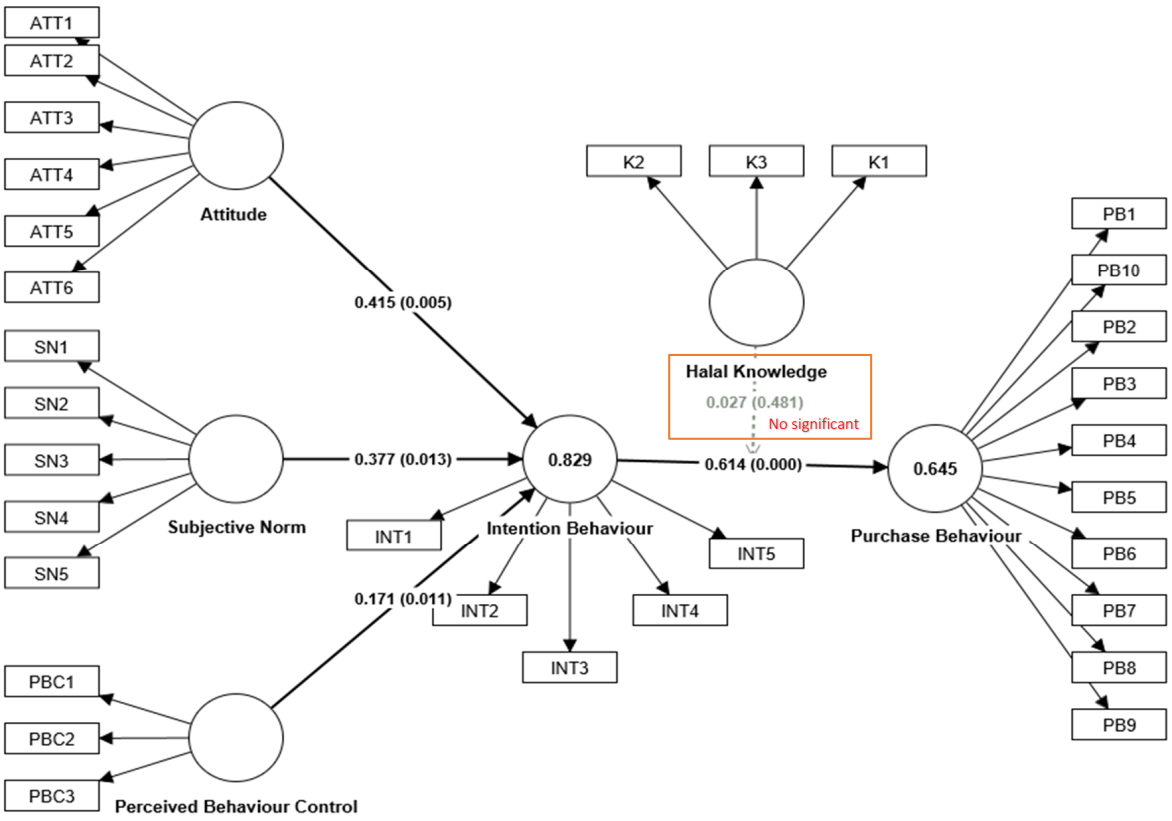


Figure 2. Structural models. Source: SEM PLS.

3.4. Discussion

The results of this investigation imply that attitudes (β = 0.415, t = 2.786, p = 0.005), subjective norms (β = 0.377, t = 2.489, p = 0.013), and perceived behavioral control (β = 0.171, t = 2.528, p = 0.011) significantly influence behavioral intentions to purchase eco-friendly halal foods; thus, hypotheses H1, H2, and H3 are accepted. Ref. [11] asserted that individuals with a positive disposition, an awareness of social benefits, and excellent behavioral control are more likely to engage in sustainable actions, such as buying eco-friendly halal food items. These findings reveal that attitude, subjective norms, and perceived behavioral control are key factors influencing the intention to buy eco-friendly halal food products.

The findings of this research indicate a substantial correlation between behavioral intentions to buy eco-friendly halal food (β = 0.614, t = 7.532, p = 0.000) and actual purchasing behavior, thereby supporting H4. This aligns with the findings of the authors of [22], who indicated that consumers intending to purchase eco-friendly halal food exhibited a higher frequency of actual purchases than those who expressed no such intentions. Consequently, behavioral intentions to purchase eco-friendly halal foods provide explanatory value in predicting the possibility of acquiring or adopting halal items.

The study findings indicate that halal knowledge (β = 0.166, t = 3.431, p = 0.001) has a significant effect on buying behavior, thereby corroborating H3. These results suggest that students in Medan believe that awareness of halal items necessitates their purchase within their surroundings, as corroborated by similar studies [24].

Halal knowledge (β = 0.027, t = 0.705, p = 0.481) exhibited no moderating effect on the relationship between behavioral intentions to purchase eco-friendly halal food and buying behavior, indicating that H6 is not supported. The findings suggest that students in Medan are not significantly impacted by comprehensive halal knowledge when forming

their intentions to purchase eco-friendly halal food items. This conclusion contradicts a prior study that indicated a robust and substantial correlation between an understanding of halal products and the intention to purchase eco-friendly halal foods [22].

This study indicates that the results are significant for manufacturers and marketers of halal food items targeting the millennial demographic or students as prospective consumers.

The findings indicate that students' behavioral intentions to buy eco-friendly halal foods are positively influenced by their halal product buying behavior. Marketers are advised to highlight the advantages of buying halal goods while also analyzing the benefits most valued by present and prospective clients. The study findings indicate that a favorable disposition, environmental assistance, and faith in religion are very significant factors. Secondly, to enhance behavioral intentions to purchase eco-friendly halal foods, producers and marketers must create and promote halal goods that align more closely with the distinctive preferences of customers. The study explored the connections among consumer attitudes, subjective norms, perceived behavioral control, and intentions to buy eco-friendly halal food. The impact of demographic characteristics, including age, gender, education, and income, on consumer behavior and purchasing intentions for eco-friendly halal foods was comprehensively analyzed and explored.

Secondly, it is proposed that marketers of halal products boost consumers' behavioral intentions to buy eco-friendly halal meals by increasing community knowledge to elevate the volume of such intentions. This can be achieved by emphasizing how the use of halal goods helps alleviate students' physical and mental concerns, thereby establishing a favorable impression of halal products and generating positive word-of-mouth among peers and family. The business sector must ensure the availability and accessibility of halal commodities at key retail locations in Medan City to build consumer trust and boost market image. Consequently, if halal commodities are perceived as widely accessible to customers, it is expected that they will demonstrate more significant interest in purchasing them, owing to the formation of positive attitudes, subjective norms, and behavioral control.

Finally, it is recommended that marketers of halal goods concentrate on cultivating behavioral intentions to purchase eco-friendly halal foods and enhancing perceived understanding of halal to help create real and persistent adoption behavior towards these products. The following may be accomplished by emphasizing the benefits and gains that existing or prospective consumers derive from acquiring halal items, engaging in enjoyable outreach to comprehend the significance of halal products, ensuring environmental protection, and fostering interpersonal understanding among fellow students and household participants. This approach may be augmented by personal selling, social media, and the news to illustrate where halal items address client difficulties. Promoting the major features most advantageous to customers, performing product demos to enhance exposure, augmenting brand recognition, and encouraging trial and feedback are all critical variables that will elevate consumer awareness. This will thus foster a positive perception among customers, resulting in goodwill and an understanding of halal principles [4]. It may therefore result in greater adoption and use rates among customers. The results and discourse from this research will enhance the current understanding of consumer behavior and halal food consumption in the culturally varied city of Medan. This research will be beneficial to firms, markets, and legislators aiming to connect with and cater to the consumer demographic in this distinct market.

This study offers a deeper understanding of the factors influencing halal product purchase behavior in Indonesia's developing markets, although it has some limitations. The primary constraint of this study is that it was conducted exclusively among the millennial generation, specifically among students residing in North Sumatra Province. This limits the applicability of the study findings to the entire population of halal goods in

Indonesia. This research examines product-specific characteristics under the TPB as predictors for the buying behavior of halal goods. The suggested study model has shown efficacy in predicting halal food purchase behavior; nonetheless, demographic characteristics may serve as primary influences on halal shopping behavior among college students. Future studies should combine qualitative and quantitative approaches to understand the variables influencing millennial consumers' adoption and purchasing of halal food items in Indonesia.

4. Conclusions

This research aims to identify the elements that influence product-buying behavior among students. This research investigates the relationship between primary characteristics and the purchasing behavior of eco-friendly halal products in Medan. The empirical findings identify several factors that existing and prospective halal product enterprises must focus on to establish sustainable purchasing levels, primarily comprising halal knowledge and Sustainable Development Goal (SDG) drivers, including attitudes, subjective norms, perceived behavioral control, and behavioral intentions to purchase eco-friendly halal foods. This research finds that personal beliefs and norms, while believed to regulate personality, substantially affect behavioral intentions to purchase eco-friendly halal foods. Secondly, halal knowledge has a considerable and affirmative influence on halal product buying behavior; however, it does not just provide sufficient adjustments to the connection between the behavioral intentions to purchase eco-friendly halal foods and halal product purchasing behavior. Ultimately, behavioral intentions to purchase eco-friendly halal food have a high correlation with buying behavior. The integrated model accounts for 82.9% of the variation in behavioral intentions to buy eco-friendly halal foods and 64.5% of the variance in purchasing behavior. This might be seen as a favorable outcome in the domain of consumer behavior, given the inherent challenges in forecasting the determinants influencing customer habits, primarily in relation to purchase behavior for ethical items.

The analysis of demographic characteristics, including age, gender, education, and income, augments our comprehension of consumer behavior regarding halal food intake. This thorough understanding of the factors influencing the intentions to buy eco-friendly halal food will be crucial for businesses and marketers in the area. The findings of this research provide direction for focused marketing strategies and product development, as well as offer significant insights for policymakers and industry players in the promotion and regulation of halal food items in Medan. By aligning with the interests and requirements of the varied customer demographic in Medan, firms and governments may successfully connect with this distinctive market. This study's findings enhance the current understanding of consumer behavior and halal food consumption in culturally diverse places such as Medan. It is crucial for companies, marketers, and politicians to successfully address the distinct customer demographic in Medan and the rise in the Islamic food sector in the region.

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