

# The Influence of Attitude, Subjective Norms, Perceived Behavioral Control, Environmental Concern and Environmental Awareness on the Purchase Intention of Palm Cooking Oil in Medan City

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## ABSTRACT

The growth of environmental awareness and sustainable consumer behavior has become an important issue in recent years. In the city of Medan, as one of the major cities in Indonesia, cooking oil consumption is an integral part of people's daily lives. However, the production and use of cooking oil also has a significant impact on the environment. This study aims to find out how consumer behavior towards the intention to buy environmentally friendly palm cooking oil. The analysis method used is Partial Least Square – Structural Equation Modelling (PLS-SEM) using the SmartPLS version 4 application and sampling technique by means of judgement sampling or purposive sampling consisting of 100 respondents. The results of this study show that Environmental Awareness is the most significant influence on the purchase intention of housewives in environmentally friendly palm cooking oil products. Furthermore, it was followed by Perceived Behavior Control and Subjective Norms which had a positive and significant effect on the Purchase Intention of environmentally friendly palm cooking oil. Meanwhile, Attitude and Environmental Concern did not have a significant effect on the Purchase Intention of palm cooking oil in Medan City.

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## 1. INTRODUCTION

Indonesia is the largest palm oil producing country in the world and is spread across various islands in Indonesia such as the islands of Sumatra, Kalimantan, Java, Sulawesi, Papua, and several other islands. Business and production activities around the world are increasing in the palm oil industry which brings negative consequences for the environment. This can be seen from the damage experienced by humans, wildlife, and plants. Unlimited human needs are inversely

proportional to limited natural resources. Therefore, efficient and effective utilization of resources is key to achieving individual and organizational goals without damaging the environment [1].

Environmental damage is the loss of some of the earth's resources, and is mostly caused by human actions that result in global warming [2]. One real example is oil palm plantations that have a serious impact on biodiversity, climate change, and natural resources. Evidence points to drastic carbon

loss, threats to rare and endemic species, and air and water pollution [3]. Deforestation in Indonesia is an important problem with major consequences for the environment and society. The high rate of deforestation is due to a variety of factors, and oil palm plantations are identified as the main contributors. Large-scale companies have a greater impact compared to small-scale plantations [4], [5].

Based on the results of research Lee et al., [4], it is shown that during 2000-2010, oil palm development caused the loss of 4,744 ha of mangrove forests, 383,518 ha of peat swamp forests, 289,406 ha of lowland forests, and 1,000 ha of lower mountain forests. Most of this deforestation is caused by private companies (88.3%), followed by smallholder plantations (10.7%) and state-owned plantations (0.9%). In 2021, deforestation due to oil palm reached a record low in the last 21 years. However, the increase in deforestation occurred again in 2023 [6].

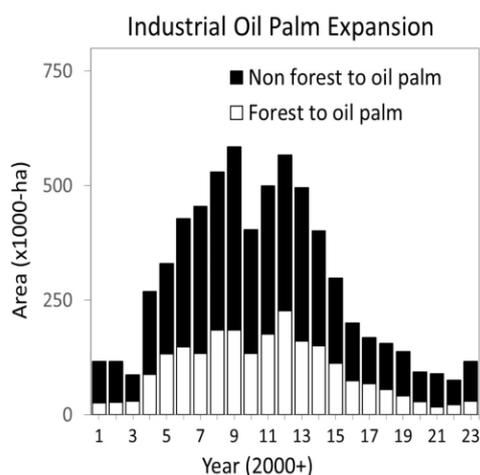


Figure 1. Expansion of the oil palm plantation industry from 2001-2023 with an emphasis on forest conversion.

Realizing this, various efforts to minimize the negative impact of the palm oil industry continue to be carried out. One of the efforts made by implementing sustainable palm oil plantation standards through the certification system is the Roundtable on Sustainable Palm Oil (RSPO) and Indonesian Sustainable Palm Oil (ISPO) Certification, which aims to create a more environmentally friendly and sustainable palm oil industry ecosystem in accordance with the Sustainable

Development Goals (SGDs) set by the UN or the United Nations.

RSPO certification is a global sustainable palm oil certification system and is the first to be implemented. The establishment of the RSPO began in 2004 when the World Wildlife Fund (WWF) sought to establish a forum that could bring together various stakeholders in the palm oil industry. Meanwhile, in 2011, the Government of Indonesia launched a national sustainable palm oil certification system called ISPO Certification. The establishment of ISPO Certification is part of the implementation of the Indonesian Government's obligation to maintain the environment, increase economic, social, and enforcement of Indonesian laws and regulations in the palm oil sector [7].

The growth of environmental awareness and sustainable consumer behavior has become an important issue in recent years. In the city of Medan, as one of the major cities in Indonesia, cooking oil consumption is an integral part of people's daily lives. However, the production and use of cooking oil also has a significant impact on the environment.

The selection of environmentally friendly palm cooking oil products can be obtained through supermarkets. As is known, the average palm cooking oil marketed by the company in the supermarket already has RSPO and ISPO certification. However, on average, the packaging of palm cooking oil does not include the RSPO or ISPO emblem. Meanwhile, in research [8] it has been shown that the existence of an environmentally friendly certificate from the RSPO (Roundtable on Sustainable Palm Oil) institution which is a quality guarantor and proof that ECOplanet cooking oil is an environmentally friendly product is one of the advantages in creating buying interest. For this reason, it is felt that it is necessary to further research the consumer's perspective on environmental issues. It is necessary to pay attention to sustainability and concern for the environment through consumer behavior.

The Theory of Planned Behavior (TPB) developed by Ajzen [9] has been widely

used to explain consumer behavior in various contexts, including environmentally friendly purchasing behavior. This model states that a person's behavior is influenced by three main factors: attitude, subjective norm, and perceived behavioral control. Some researchers argue that the SDGs need to be expanded to better understand consumer behavior related to environmentally friendly products. Tommasetti et al., [10] explained that many researchers have made changes to the original theoretical model by adding other variables beyond the variables already considered. Thus, researchers try to expand the TPB to consider environmental aspects in the decision to purchase palm cooking oil by adding environmental concerns and environmental awareness.

In the context of Medan City, there have not been many studies that integrate TPB, environmental concern, and environmental awareness in the study of cooking oil purchasing decisions by considering environmental aspects. In fact, cooking oil is a product whose use can have an impact on the environment, both in terms of production and waste disposal. Based on this background, the author is interested in researching with the title "The Influence of Attitudes, Subjective Norms, Perceived Behavior Control, Environmental Concern and Environmental Awareness on the Intention to Buy Palm Cooking Oil in the City of Medan".

## 2. LITERATURE REVIEW

### 2.1 Attitude

Attitude is the tendency to respond favorably or unfavorably to an object, person, institution, or event [9]. According to Fishbein & Ajzen [11] Attitude is defined as a psychological tendency that is expressed by evaluating a particular entity with some degree of likes or dislikes. Attitude towards behavior refers to the extent to which a person has a favorable or unfavorable evaluation or assessment of the behavior in question.

### 2.2 Subjective Norms

Subjective norms are individuals' perceptions of perceived social pressure to do

or not to perform a behavior [9]. According to Jogiyanto [12], a subjective norm is a person's perception or view of other people's beliefs that affects them to do or not to do the behavior under consideration.

### 2.3 Perceived Behavior Control

According to Armitage & Conner [13] Perceptual behavioral control is an individual's belief about how easy or difficult it is to perform a particular behavior.

Perceived behavioral control can be defined as when a person experiences difficulty or ease when performing certain behaviors. Perceived behavioral control explains that to control a behavior requires a measure of control that cannot be controlled by oneself. Perceptual behavioral control is also determined by the experiences of people that affect the individual and become the information to determine behavior. Perceived behavioral control evaluates a person's qualities, outside limitations, and belief in talents and resources possessed [14].

### 2.4 Environmental Concern

Environmental Concern is a level where individuals care about problems that occur in the environment, support existing efforts in solving environmental problems, and are willing to make efforts in solving problems related to the environment. Individuals who feel concerned about the state of the environment, tend to make efforts to alleviate environmental problems, one of which is a response to the desire to use environmentally friendly products or buy environmentally friendly products (Dunlap & Jones, 2002) in [15].

### 2.5 Environmental Awareness

Environmental Awareness is a person's awareness of the importance of protecting the environment and understanding the fragility of the surrounding environment. Environmental awareness begins with an understanding of the environmental movement or known as environmentalism. Environmentalism is an ideology that awakens the need and responsibility of humans to respect, protect, and preserve nature from anthropogenic suffering, which is caused by humans [16].

## 2.6 Purchase Intention

According to Ajzen [9] Purchase intention is a situation of a person before performing an action, which can be used as a basis for predicting the behavior or action. According to Kotler and Keller [17] Purchase intent is a consumer's decision to form preferences among brands in the selection group and buy the most preferred brands. According to Sumarwan [18], intention is a strong tendency or desire in individuals to perform certain behaviors. Intention is an indication of how strong an individual's desire is to manifest a behavior, in other words, the stronger the individual's desire, the greater the likelihood that a behavior will be realized.

## 3. METHODS

The determination of the research area was carried out deliberately (purposive) in Medan City with the consideration that Medan City is the center of economic growth, has a diverse population both in terms of social and cultural at the economic level in an effort to meet daily needs, especially for palm cooking oil consumption.

The form of sampling in this study is Nonprobability Sampling using the judgement sampling technique or purposive sampling, which is a sampling technique with certain considerations and criteria. The target of this research is housewives living in the city of Medan. The number of respondents in this study was 100 respondents.

The data collection method in this study uses primary data and secondary data. Primary data is obtained from consumers through a Google Form questionnaire sent online. Secondary data related to this research is obtained from agencies or agencies and institutions related to the research such as: Central Statistics Agency, Ministry of Agriculture, books, journals and others.

The data analysis method is the PLS-SEM (Partial Least - Squares Structural Equation Modeling) method using the SmartPLS 4.0 program. There are 2 things that must be measured in PLS-SEM, namely the Outer Model and the Inner Model.

## 3.1 Outer Model

The outer model describes the relationship between the latent construct and its indicators.

- a. **Indicator Reliability** involves examining how much variance each indicator is explained by its construct, which is an indication of the reliability of the indicator. Outer Loading above 0.708 is recommended, as it shows that the construct explains more than 50 percent of the indicator's variance.
- b. **Internal Consistency** is usually measured by Cronbach's alpha and Composite Reliability. Both have a measurement if the reliability value is  $> 0.7$ , then the construction value has a good reliability value.
- c. **Convergent Validity** is measured by Average Variance Extracted. The minimum acceptable AVE value is 0.50.
- d. **Discriminant Validity** Calculate the validity of discrimination using the Heterotrait-Monotrait (HTMT) test.

## 3.2 Inner Model

The Structural Model (inner model) describes the causality relationship between latent variables that has been built based on the substance of the theory.

- a. **VIF (Variance Inflated Factor)** to check for the absence of multicollinearity between variables. If the Inner VIF value is below 5, it indicates that there is no multicollinearity between the variables.
- b. **Significance and Relevance Testing Path Coefficients** by looking at statistical T-values compared to table T-values = 1.98 at the significance level  $p$  value = 0.05. If the T-statistical value  $>$  the T-table, it can be concluded that exogenous variables have a significant influence on endogenous variables.
- c. **R Square** is the coefficient of determination in endogenous constructs. The limit of the value of this R square is in three classifications, namely 0.75 as substantial; 0.50 as moderate and 0.25 as weak.
- d. **PLS Predict** is a procedure for prediction outside the sample as a form of validation

of the strength of the PLS prediction test. by comparing the MAE (Mean Absolute Error) or RMSE (Root Mean Square Error) values with the LM (Linear Regression Model) values of each indicator.

### 4. RESULTS AND DISCUSSION

#### 4.1 Measurement Model (Outer Model)

In this study, there are 30 indicators that have their own validity and reliability.



Figure 2. Measurement Model (Outer Model)

Tabel 1. Measurement Model (Indicator Reliability, Internal Consistency Reliability, dan AVE)

Variable	Measurement Items	Outer Loading	Chronbach's alpha	rho_a	Composite Reliability	AVE
Attitude (X1)	SKP1	0.676	0.892	0.917	0.920	0.700
	SKP2	0.873				
	SKP3	0.897				
	SKP4	0.881				
	SKP5	0.836				
Subjective Norms (X2)	NS1	0.866	0.917	0.926	0.938	0.751
	NS2	0.845				
	NS3	0.830				
	NS4	0.911				
	NS5	0.879				
Perceptual Behavior Control (X3)	KPP1	0.759	0.787	0.789	0.862	0.610
	KPP2	0.765				
	KPP3	0.820				
	KPP4	0.779				
	KPP5	0.774				
Environmental Concern (X4)	EC1	0.771	0.844	0.850	0.889	0.616
	EC2	0.833				
	EC3	0.756				
	EC4	0.832				
	EC5	0.727				
Environmental Awareness (X5)	EA1	0.818	0.881	0.881	0.913	0.677
	EA2	0.841				
	EA3	0.860				
	EA4	0.823				
	EA5	0.772				
Purchase Intention (Y)	NB1	0.877	0.942	0.943	0.956	0.813
	NB2	0.922				
	NB3	0.896				
	NB4	0.904				
	NB5	0.909				

Source: Primary Data processed by Smart PLS 4, 2024

a. The Indicator Reliability can be seen that Based on Table 1. The Reliability indicator is qualified, namely with an outer loading value of > 0.6, then it can be said to be valid. According to Chin (1998) in [19] the outer loading value between 0.6-0.7 is still acceptable with the note that the indicator is not the only indicator of a construct so there is a comparative indicator. The researcher found that one indicator did not meet the requirements or had an outer loading value of less than 0.60. In Figure 2. Invalid outer loading is located at KPP4 with a value of 0.438. Therefore, invalid data is decided to be deleted.

b. Internal Consistency is the extent to which indicators that measure the same construct are interrelated [20]. To be able to meet good reliability, Cronbach's alpha, rho\_a, and Composite Reliability values must > 0.70. Based on Table 1, it shows that all values of Cronbach's alpha, rho\_a, and Composite Reliability > 0.7 for all variables,

which means that they have met the reliability requirements.

c. Convergent Validity The value of convergent validity is measured using the average variance extracted, the Average Variance Extracted (AVE) value is a value that shows that all indicators have become a good comparison for the latent variables. The minimum acceptable AVE value is 0.50, an AVE of 0.50 or higher indicates that the construct explains 50% or more of the variance of the indicators that make up the construct (Hair et al., 2021). Based on Table 1. It can be seen that the average variance extracted (AVE) value of all variables > 0.50, then it can be declared valid.

d. Discriminant Validity is done to measure the extent to which a construct is empirically different from other constructs in a structural model. Calculate the validity of discrimination using the Heterotrait-Monotrait (HTMT) test.

Tabel 2. Heterotrait-Monorait Test Results (HTMT)

Variable	X1	X2	X3	X4	X5	Y
Attitude (X1)						
Subjective Norms (X2)	0.580					
Perceptual Behavior Control (X3)	0.777	0.875				
Environmental Concern (X4)	0.731	0.612	0.840			
Environmental Awareness (X5)	0.627	0.610	0.802	0.974		
Purchase Intention (Y)	0.683	0.729	0.937	0.833	0.875	

Source: Primary Data processed by Smart PLS 4, 2024

The issue of the validity of discrimination arises when the HTMT value is high. Henseler et al., [38] proposed a threshold value of 0.90 for structural models with conceptually very similar constructions, such as cognitive satisfaction, affective satisfaction, and loyalty. In such a setting, an HTMT value above 0.90 would indicate that the validity of the discrimination does not exist.

According to Hair et al. [21], the HTMT value should be lower than 0.90 for structurally comparable structures and lower than 0.85 for structs that are conceptually distinct. Based on Table 2, it can be seen that the validity value of discrimination is not

achieved in the variables Environmental Awareness with Environmental Concern and Purchase Intention with Perception Behavior Control, which shows that in these variables the construct has a high correlation with other constructs.

According to Hair et al. [22] To reduce the mean heteromethod-heterotraite correlation (HTMT), one can either (1) eliminate items that are strongly correlated with items in the opposite construct, or (2) reassign this indicator to another construct, if it is theoretically reasonable. In this study, the researcher uses the first method so as to produce the HTMT value as follows:

Table 3. Heterotrait-Monotrait Test (HTMT) Results after Modification

Variable	X1	X2	X3	X4	X5	Y
Attitude (X1)						
Subjective Norms (X2)	0.580					
Perceptual Behavior Control (X3)	0.818	0.880				
Environmental Concern (X4)	0.731	0.636	0.877			
Environmental Awareness (X5)	0.564	0.560	0.677	0.845		
Purchase Intention (Y)	0.683	0.729	0.886	0.804	0.849	

Source: Primary Data processed by Smart PLS 4, 2024

In this study, the author uses a scheme whose value is not greater than 0.90. As shown in Table 3. The discrimination value is good because all the values are below 0.90.

**4.2 Model Struktural (Inner Model)**

After ensuring that the construction measurements are reliable and valid, the next step is to assess the results of the structural model (inner model).

- a. VIF (Variance Inflated Factor)

The first step in the structural model is to check for the absence of multicollinearity between variables and the size of the Inner VIF (Variance Inflated Factor). An Inner VIF value below 5 indicates that there is no multicollinearity between the variables [20]. Before testing the hypothesis of the structural model, it is necessary to see whether there is multicollinearity between the variables, namely with the statistical size of the Inner VIF as follows:

Table 4. Inner VIF

	BRIGHT
Attitude (X1) → Purchase Intention (Y)	2.098
Subjective Norm (X2) → Purchase Intention (Y)	2.318
Perceptual Behavior Control (X3) → Purchase Intention (Y)	3.436
Environmental Concern (X4) → Purchase Intention (Y)	3.118
Environmental Awareness (X5) → Purchase Intention (Y)	2.134

Source: Primary Data processed by Smart PLS 4, 2024

Based on table 4.17, it can be seen that the estimation results show an Inner VIF value of <5, so the multicollinearity level between the variables is low. This result strengthens the results of parameter estimation in SEM PLS is robust (unbiased).

- b. Significance Testing and Relevance of Path Coefficients

The second step in the structural model is to test hypotheses between variables by looking at t-statistical or p-value values. If the t-statistical value of the calculation result is greater than 1.98 (t table) or the p-value of the test result is less than 0.05, there is a significant influence between the variables. To see these t-statistical and p-value values can be obtained from the bootstrapping results.

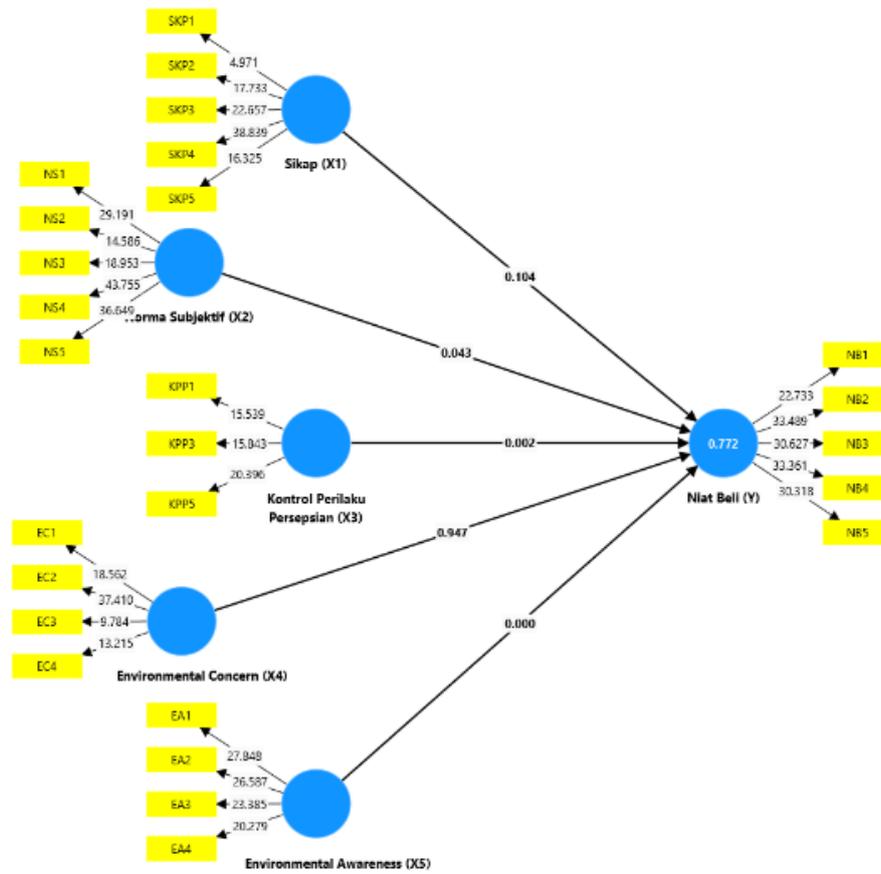


Figure 3. Structural Model (Inner Model)

Table 5. Path Coefficients Significance Test Results

	Original sample (O)	Standard deviation (STDEV)	T statistics ( O/STDEV )	<i>P values</i>	Information
Attitude (X1) → Purchase Intention (Y)	0.116	0.072	1.625	0.104	Rejected
Subjective Norm (X2) → Purchase Intention (Y)	0.161	0.079	2.028	0.043	Accepted
Behavior Control Perception (X3) → Purchase Intention (Y)	0.291	0.092	3.166	0.002	Accepted
Environmental Concern (X4) → Purchase Intention (Y)	0.009	0.142	0.066	0.947	Rejected
Environmental Awareness (X5) → Purchase Intention (Y)	0.465	0.118	3.937	0.000	Accepted

Source: Primary Data processed by Smart PLS 4, 2024

Based on Table 5. stated that the results of the Path Coefficients significance test were as follows:

1. Attitude (X1) towards Purchase Intention (Y) has a T-statistical value of 1.625 and a p-value of 0.104. This shows that the t-statistical value < t table is 1.98 and the p-value > 0.05. This means that attitudes have a positive but insignificant effect on purchase intentions. This concludes that consumer attitudes cannot affect consumers' purchase intentions.

2. The subjective norm (X2) of Purchase Intention (Y) has a statistical T-value of 2.028 and a p-value of 0.043. This shows that the t-statistical value > t table is 1.98 and the p-value < 0.05. Any change in consumer subjective norms will increase consumer purchase intentions. This means that subjective norms have a positive and significant influence on purchase intention. It can be concluded that consumer subjective norms can affect consumer purchase intentions.

3. The Perceptual Behavior Control (X3) towards Purchase Intent (Y) had a statistical T-value of 3.166 and a p-value of 0.002. This shows that the t-statistical value > t table is 1.98 and the p-value < 0.05. Every change in the control of consumer perception behavior will increase consumer purchase intention. This means that perceptual behavioral control has a positive and significant influence on

purchase intent. It can be concluded that the control of consumer perception behavior can affect consumer purchase intention.

4. Environmental Concern (X4) towards Purchase Intention (Y) has a T-statistical value of 0.066 and a p-value of 0.947. This shows that the t-statistical value < t table is 1.98 and the p-value > 0.05. This means that environmental concerns have a positive but insignificant effect on purchase intentions. It can be concluded that consumer environmental concerns cannot affect consumers' purchase intentions.

5. Environmental Awareness (X5) towards Purchase Intention (Y) has a T-statistical value of 3.937 and a p-value of 0.000. This shows that the t-statistical value > t table is 1.98 and the p-value < 0.05. Every change in consumer environmental awareness will increase consumer buying intentions. This means that environmental awareness has a positive and significant influence on purchase intentions. It can be concluded that consumer environmental awareness can affect consumer purchase intentions.

c. R Square

When testing a model with PLS, the R-square for each latent dependent variable should be considered first. The R-square value is 0.75 as substantial; 0.50 as moderate and 0.25 as weak. The following are the results of R-Square using SmartPLS:

Table 6. R-Square Test Results

Variable	R Square	Information
Purchase Intention (Y)	0.771	Substantial

Source: Primary Data processed by Smart PLS 4, 2024

Based on Table 6, it can be seen that the R-square value for the Purchase Intention variable is 0.771 or 77.1% which means that the variables of attitude, subjective norms, perceptual behavior control, environmental concern and environmental awareness are able to explain the purchase intention variable significantly by 77% which means that it has a strong influence while the rest is influenced by other variables that are not included in this research model.

d. PLS Predict

According to Hair et al., [20] PLS is an SEM analysis with the purpose of prediction.

Therefore, it is necessary to develop a measure of the model validation form to show how well the prediction power of the proposed model is. Shmueli et al., [39] introduced PLS Predict, a procedure for prediction outside the sample as a form of validation of the strength of the PLS prediction test. In this way, researchers need to compare the RMSE (Root Mean Square Error) or MAE (Mean Absolute Error) values of each indicator with the naïve Linear Regression Model (LM) benchmark. The LM benchmark value is obtained by running a linear regression of each dependent construct

indicator on the exogenous construct indicator in the PLS path model [23].

Table 7. PLS Predict Test Results

Endogenous Variables	Model PLS		Model LM	
	RMSE	MAE	RMSE	MAE
NB1	0.556	0.393	0.635	0.447
NB2	0.514	0.385	0.613	0.458
NB3	0.552	0.412	0.593	0.470
NB4	0.561	0.412	0.625	0.470
NB5	0.536	0.408	0.555	0.439

Source: Primary Data processed by Smart PLS 4, 2024

Based on Table 7, it can be seen that the results of the PLS predict test all indicators in the PLS-SEM analysis have RMSE (Root Mean Square Error) or MAE (Mean Absolute Error) values that are lower than the LM regression model, so the model in this study has high predictive power.

#### 4.3 Discussion

This study aims to determine consumer behavior towards the intention to buy palm cooking oil in Medan City. The empirical results from PLS-SEM show that Attitude (X1) has no significant effect on the Purchase Intention (Y) of palm cooking oil in Medan City, and therefore, Hypothesis (H1) is rejected. These results show that although consumers have a positive attitude towards environmentally friendly products, they do not guarantee the intention to buy environmentally friendly products. This can happen because consumers like eco-friendly products in general but don't feel any interest in buying. Prices, discounts and promotions also affect consumer attitudes towards purchase intentions. In addition, the lack of relevance of the product to consumer needs, as well as situational factors such as limited resources or priority of other needs. This is in line with research Ariansyah et al., [24] which states that attitude does not have a significant effect on purchase intention. These findings are not in line with the research of Yadav & Pathak [25] showing that attitude is a significant predictor of purchasing intention of environmentally friendly products in developing countries. As well as the research of Jaiswal & Kant [26] found that attitude has the strongest influence on the intention to purchase environmentally friendly products

compared to other factors of TPB (Theory of Planned behavior).

Furthermore, the results of the second hypothesis from this study show that the subjective norm (X2) has a positive and significant effect on the Purchase Intention (Y) of palm cooking oil in Medan City. Thus the hypothesis (H2) is accepted. These results show that consumers trust the views and advice of family or friends very much, so that they will form the intention to buy environmentally friendly products. These subjective norms reflect the views or expectations of others that are important to the individual, such as family or friends. When a person feels that the people around them support the purchase of a product, they are more likely to have a high purchase intention to fit in with their social group. This is especially evident in products that have symbolic value, such as eco-related products, where social recommendations (family and friends) can provide additional confidence. In choosing environmentally friendly products, consumers often need opinions from family and friends regarding the products they will use. The recommendations and suggestions given by the family greatly influence consumers to buy these environmentally friendly products. The results of this study are in line with Yadav & Pathak [27] showing that subjective norms are a significant predictor of the purchase intention of organic products in developing countries also in connection with the research Paul et al. [28] found that subjective norms have a positive effect on the purchase intention of eco-friendly products in India.

Then, the results of the study showed that the control of perception behavior (X3) had a positive and significant effect on the Purchase Intention (Y) of palm cooking oil in Medan City, so the hypothesis (H3) was accepted. These results show that consumers who feel they have the ability and resources to buy are more likely to have a strong intention to do so. These perceptions include ease of accessing products, availability of funds, time to complete purchases, which increases consumer confidence that they are able to overcome obstacles. High self-confidence and a sense of control allow consumers to feel that a purchase is an action they can perform without significant difficulty, as described in Theory of Planned Behavior by Ajzen [9]. These findings are in line with the research of Yadav & Pathak [27] which found that Perceived Behavior Control has a significant positive influence on the purchase intention of organic products in India. In connection with the research, Qi & Ploeger [29] stated that KPP is an important factor influencing the purchase intention of organic food in China.

Meanwhile, Environmental Concern (X4) did not have a significant effect on the Purchase Intention (Y) of palm cooking oil in Medan City. Therefore, the hypothesis (H4) is rejected. These results show that although consumers have positive environmental concerns, they do not guarantee the intention to buy environmentally friendly products. This happens because there is a gap between awareness and action (attitude-behavior gap). Although consumers care about environmental issues, they often face obstacles such as higher prices, low accessibility, or doubts about the effectiveness of eco-friendly products in addressing environmental issues. In addition, practical factors such as quality, convenience, and price are often priorities in purchasing decisions, so attention to the environment becomes less significant in determining purchase intent [30]. The lack of clear information regarding the benefits of green products also contributes to insignificant influences. Distrust of "eco-friendly" claims on products as well as the weak influence of social norms can make

environmental concerns not strong enough to encourage purchases. The economic context and consumer purchasing power also play an important role, where consumers prioritize basic needs over supporting sustainability. This suggests that while environmental attention is important, additional factors such as consumer education, brand transparency, and social support are needed to convert that attention into purchase intent [31]. This is in line with research [32], [33], [34], which stated that environmental concerns did not have a significant effect on green buying intentions.

In the hypothesis (H5) accepted, the results of the study show that Environmental Awareness (X5) has a positive and significant effect on Purchase Intention (Y). These results show that consumers who care about environmental issues are more likely to choose products or brands that support sustainability. This awareness includes an understanding of the negative impact of certain products on the environment, such as global warming or the irresponsible use of resources. Consumers who have a high level of environmental awareness feel responsible for supporting eco-friendly products, which drives their purchase intent towards those products. This is reinforced in research by Mostafa [35], which shows that environmental awareness increases the preference for green products because consumers want to contribute to environmental conservation. This finding is in line with the research of [36], [37] which shows that environmental awareness has a positive and significant effect on the interest in buying green products.

## 5. CONCLUSION

Based on the results of the research that has been carried out, the following conclusions can be drawn:

- 1) Attitude (X1) did not have a significant effect on Purchase Intention (Y) of palm cooking oil in Medan City.
- 2) Subjective Norms (X2) have a positive and significant effect on Purchase

- Intention (Y) of palm cooking oil in Medan City.
- 3) Perceived Behavior Control (X3) has a positive and significant effect on Purchase Intention (Y) of palm cooking oil in Medan City.
  - 4) Environmental Concern (X4) did not have a significant effect on the Purchase Intention (Y) of palm cooking oil in Medan City.
  - 5) Environmental Awareness (X5) has a positive and significant effect on the Purchase Intention (Y) of consumers in Medan City.

## REFERENCES

- [1] Nekomahmud, M., & Fekete-Farkas, M. (2020). Why not green marketing? Determinates of consumers' intention to green purchase decision in a new developing nation. *Sustainability (Switzerland)*, 12(19), 1–31. <https://doi.org/10.3390/su12197880>
- [2] Nainggolan, Y. A., & Harsoyo, T. D. (2023). 0+ORI+2\_JIMKES\_Yunita+Angelina+Nainggolan. *Jurnal Ilmiah Manajemen Kesatuan*, 11(3).
- [3] Petrenko, C., Paltseva, J., Beijing, S. S., Berlin, I., Brussels, I., San, I., & Washington, F. I. (2016). ECOLOGICAL IMPACTS OF PALM OIL EXPANSION IN INDONESIA. [www.theicct.org](http://www.theicct.org)
- [4] Lee, J. S. H., Abood, S., Ghazoul, J., Barus, B., Obidzinski, K., & Koh, L. P. (2014). Environmental impacts of large-scale oil palm enterprises exceed that of smallholdings in Indonesia. *Conservation Letters*, 7(1), 25–33. <https://doi.org/10.1111/conl.12039>
- [5] Obidzinski, K., Andriani, R., Komarudin, H., & Andrianto, A. (2012). Environmental and social impacts of oil palm plantations and their implications for biofuel production in Indonesia. In *Ecology and Society* (Vol. 17, Issue 1). <https://doi.org/10.5751/ES-04775-170125>
- [6] TheTreeMap. (2024). 2023 Marks a Surge in Palm Oil Expansion in Indonesia. <https://nusantara-atlas.org/2023-marks-a-surge-in-palm-oil-expansion-in-indonesia/>
- [7] Indrapraja, F. M. (2018). Analisis Terhadap Sertifikasi Minyak Kelapa Sawit Berkelanjutan Sebagai Instrumen Penataan Hukum Lingkungan. 47–76.
- [8] Roby, M. A., & Andjarwati, A. L. (2014). PENGARUH GREEN PRODUCT PADA MINYAK GORENG ECOPLANET TERHADAP MINAT BELI KONSUMEN MAHBUB ALFA ROBY ANIK LESTARI ANDJARWATI. In *Jurnal Ilmu Manajemen I* (Vol. 2).
- [9] Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
- [10] Tommasetti, A., Singer, P., Troisi, O., & Maione, G. (2018). Extended Theory of Planned Behavior (ETPB): Investigating customers' perception of restaurants' sustainability by testing a structural equation model. *Sustainability (Switzerland)*, 10(7). <https://doi.org/10.3390/su10072580>
- [11] Fishbein, M. and Ajzen, I. 2005. *Attitudes, Personality dan Behavior*. Open University Press. McGraw-Hill Education.
- [12] Jogiyanto, H.M. 2007. *Sistem Informasi Keperilakuan Edisi Revisi*. Yogyakarta: ANDI.
- [13] Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta-analytic review. In *British Journal of Social Psychology* (Vol. 40).
- [14] Ajzen, I. (2015). Consumer attitudes and behavior: the theory of planned behavior applied to food consumption decisions. *Rivista Di Economia Agraria, Annao LXX*, n, 2, 121–138.
- [15] Susanty, A., Ulkhaq, M. M., Puspitasari, N. B., Prastawa, H., Akshintya, Y., & Listyawardhani, P. (2021). Socio-Economic Factors Affecting Environmental Concern and Knowledge of Consumers' Purchasing Behaviors of Green Products: A Study of Semarang Regency.
- [16] Pachamama Alliance (2024) Green Awareness. San Francisco, diakses 07 Mei 2024 dari <https://pachamama.org/environmental-awareness>.
- [17] Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15th ed.). Pearson Education Limited.
- [18] Sumarwan, Ujang. 2011. *Perilaku Konsumen, Teori dan Penerapannya Dalam Pemasaran*. Jakarta: Ghalia Indonesia.
- [19] Santosa, P. I. (2018). *Metode Penelitian Kuantitatif* (Giovanny, Ed.). Penerbit Andi.
- [20] Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R.
- [21] Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. In *European Business Review* (Vol. 31, Issue 1, pp. 2–24). Emerald Group Publishing Ltd. <https://doi.org/10.1108/EBR-11-2018-0203>
- [22] Hair, J. F. ., Hult, G. T. M. ., Ringle, C. M. ., & Sarstedt, Marko. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage.
- [23] Danks, N. P., & Ray, S. (2018). Predictions from partial least squares models. In *Applying Partial Least Squares in Tourism and Hospitality Research* (pp. 35–52). Emerald Group Publishing Ltd. <https://doi.org/10.1108/978-1-78756-699-620181003>
- [24] Ariansyah, A., Najib, M., & Munandar, J. M. (2020). Faktor-Faktor yang Memengaruhi Niat Konsumen untuk Membeli Produk Melalui E-Commerce. *Jurnal Manajemen Dan Organisasi*, 11(2), 83–90. <https://doi.org/10.29244/jmo.v11i2.32170>

- [25] Yadav, R., & Pathak, G. S. (2016). Intention to purchase organic food among young consumers: Evidences from a developing nation. *Appetite*, 96, 122–128. <https://doi.org/10.1016/j.appet.2015.09.017>
- [26] Jaiswal, D., & Kant, R. (2018). Green purchasing behaviour: A conceptual framework and empirical investigation of Indian consumers. *Journal of Retailing and Consumer Services*, 41, 60–69. <https://doi.org/10.1016/j.jretconser.2017.11.008>
- [27] Yadav, R., & Pathak, G. S. (2017). Determinants of Consumers' Green Purchase Behavior in a Developing Nation: Applying and Extending the Theory of Planned Behavior. *Ecological Economics*, 134, 114–122. <https://doi.org/10.1016/j.ecolecon.2016.12.019>
- [28] Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*, 29, 123–134. <https://doi.org/10.1016/j.jretconser.2015.11.006>
- [29] Qi, X., & Ploeger, A. (2019). Explaining consumers' intentions towards purchasing green food in Qingdao, China: The amendment and extension of the theory of planned behavior. *Appetite*, 133, 414–422. <https://doi.org/10.1016/j.appet.2018.12.004>
- [30] Joshi, Y., & Rahman, Z. (2015). Factors Affecting Green Purchase Behaviour and Future Research Directions. *International Strategic Management Review*, 3(1–2), 128–143. <https://doi.org/10.1016/j.ism.2015.04.001>
- [31] Chen, Y. S., & Chang, C. H. (2013). The Determinants of Green Product Development Performance: Green Dynamic Capabilities, Green Transformational Leadership, and Green Creativity. *Journal of Business Ethics*, 116(1), 107–119. <https://doi.org/10.1007/s10551-012-1452-x>
- [32] Alamsyah, A., & Artanti, Y. (2023). Pengaruh environmental concern dan perceived environmental knowledge terhadap niat beli hijau melalui environmental attitude sebagai variabel mediasi. *Jurnal Ilmu Manajemen*, 11(1), 48–56.
- [33] Mustofa, A., & Rinmanik. (2022). THE IMPACT OF ENVIRONMENTAL CONCERN, AND ENVIRONMENTAL ATTITUDE ON GREEN PRODUCT PURCHASE INTENTION. 2022, 1–11.
- [34] Santos, V., Gomes, S., & Nogueira, M. (2021). Sustainable packaging: Does eating organic really make a difference on product-packaging interaction? *Journal of Cleaner Production*, 304, 127066. <https://doi.org/10.1016/j.jclepro.2021.127066>
- [35] Mostafa, M. M. (2007). A hierarchical analysis of the green consciousness of the Egyptian consumer. *Psychology and Marketing*, 24(5), 445–473. <https://doi.org/10.1002/mar.20168>
- [36] Lukiarti, M. M. (2019). PENGARUH KEPEDULIAN LINGKUNGAN DAN SIKAP TERHADAP MINAT BELI PRODUK HIJAU (Studi Kasus Pada Konsumen Produk Hijau di Kabupaten Rembang). *BBM (Buletin Bisnis & Manajemen)*, 5(1), 15–28.
- [37] Fahmi, M. (2024). PENGARUH ENVIRONMENTAL KNOWLEDGE DAN ENVIRONMENTAL AWARENESS TERHADAP GREEN PURCHASE INTENTION PADA KONSUMEN GALON LE MINERALE SEKALI PAKAI. *Neraca Manajemen, Ekonomi*, 4. <https://doi.org/10.8734/mnmae.v1i2.359>
- [38] Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- [39] Shmueli, G., Ray, S., Manuel Velasquez Estrada, J., & Chatla, S. B. (2016). The Elephant in the Room: Evaluating the Predictive Performance of Partial Least Squares (PLS) Path Models.