

# CONSUMER PERCEPTION INFLUENCE TOWARDS PURCHASE INTENTION FOR GREEN ECO LIGHTING PRODUCTS

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## ABSTRACT

*In recent years, green marketing has been evolved, & many companies practice embracing green marketing. Companies develop new or improved products such as green eco lighting products that protect the environment by reducing energy consumption & meeting consumers' environmental needs. Green eco lighting products are energy-efficient lighting products that reduce energy consumption & are harmless products to the environment. The growing concern of companies & consumers towards the natural environment indicates consumer perception of green products. Hence, companies need to understand consumer perception towards green products to comprehend their needs & wants. Thus, this research aims to study consumer perception towards purchase intention for green eco lighting products. There are two research objectives: to understand the effect of demographic characteristics towards awareness of green eco lighting products & to investigate the relationship between consumer perception & purchase intention towards green eco lighting products. In this study, the researcher has selected 384 respondents as a sample to answer the questionnaire. For finding analysis, the researcher has used descriptive statistics, cross-tabulation, Cornbrash's alpha, Pearson's correlation coefficient analysis, & multiple regression analysis by SPSS software to analyse the data. The findings show a significant positive relationship between eco-labels, green prices, green advertising, perceived environmental responsibility, & environmental knowledge regarding green purchase intention for green eco lighting products. To encourage consumers to make green purchases, the researcher suggests that marketers invest more in eco-labels & green advertising. Besides, the future researcher should study other factors that may influence green purchase intention, such as demographic & psychological factors.*

**Keywords:** Consumer Perception, Green Purchase Intention, Green Eco Lighting products

## INTRODUCTION

The change in the global climate causes environmental issues continuously arising in our daily lives, becoming critical social issues Karna, et al., (2002). Economic progress & development negatively impact the environment like acid rain, global warming, exhaustion of natural resources, & so on. The rapid industry growth has resulted in increasing the environmental pollution level & exhaustion of natural resources.

As worldwide concern about the negative impacts of human & industrial activities on the natural environment rises, the importance of being environmental & social responsible enforces aggressive plans to preserve the environment. According to Liu, et al., (2012), the growing trend of businesses to consider their corporate social responsibility has increased & produced environmentally friendly products. Therefore, the current marketplace is cumulatively attractive for marketers of environmentally friendly products.

The continuous increase of worldwide worries about environmental quality leads to the emergence of green marketing. Polonsky (1994) defined green marketing as involving various

practices, such as modifying goods, transformation process in production & packaging, & altering advertising. In Malaysia, the demand for green products is increasingly Chen & Chai (2010). Besides, consumer awareness towards environmental & social issues is increasing & looking for responsible products Chen & Chang (2013) such as recycled products & green products.

According to Oyewole (2001); Wong (2008), green marketing provides products or services based on environmental benefits. Environmentally friendly products are described as products which purposely reduce adverse effects on the natural environment and these products life cycle are enhanced for long-lasting Pujari & Wright (1996); Shrivastava (1995); Hindle, et al., (1993). In the current market, green products are progressively developed from small niche markets of consumer goods & services to large markets Roberts (1996).

According to AWER (2012), inefficient use of energy & electricity causes climate change in Malaysia. Therefore, companies practice offering green eco lighting products, which are energy-efficient. According to MGBC (2013), energy-saving compact fluorescent lamp is distributed in the Malaysian market. These products are contributed to reduce harmful pollutants in the environment & reduce consumer's electricity bills. It benefits the consumers in energy cost savings as the energy consumption is reduced & reduces the negative effect on the environment.

However, there is much uncertainty on consumer awareness towards green eco lighting products, consumer perception of green eco lighting products & their intention to purchase them. In Malaysia, the research to discover the correlation between consumer perception of green products and purchase intention of green are still comparatively fewer (Nik Abdul, 2009; Nik Abdul et al., 2009; Elham & Nabsiah, 2011). Besides, there is no relevant research related to consumer perception for green eco lighting products. Therefore, this study aims to explore the relationship between green purchase intention and consumer perception for green eco lighting products.

## LITERATURE REVIEW

Green eco lighting is a significant potential contributor to energy efficiency & environmental protection (Figueiredo et al., 2012). According to Loe (2003), the entire value chain & life cycle of green eco lighting products are including design, installation, & use. Green eco lighting products must be achieved energy efficiency without endangering the overall quality of the lighting to ensure productive & safe home, workplace, & transportation environments.

Green eco lighting products are beneficial to the environment & consumers. It provides many environmental advantages, such as reducing carbon emission, decreasing greenhouse gas emissions, & reducing waste in the production process. Therefore, using green eco lighting products instead of traditional lighting products may minimize the negative impacts on the environment.

However, green eco lighting products also benefit consumers. Green eco lighting products are 80% more efficient than conventional lighting products. As a result, it can reduce energy consumption and consumers able to save electricity bills. Besides, green eco lighting products have a better quality of light distribution; thus, fewer lights are needed. The life span of green eco lighting products is more extended than traditional lighting products. Therefore, consumers can use green eco lighting products with a long duration compared to traditional lighting products.

### Green Purchase Intention

Purchase intention has a positive influence on consumer decision to purchase green products. In addition, green purchase intention has been suggested in various researches as a significant predictor of green purchase behaviour in developing nations (Chan, 2001; Mostafa,

2009; Ramayah et al., 2010). As stated in Chan's (2001) and Beckford et al.'s (2010) research studies, the purchase intention of green is an essential predictor of green purchase behaviour, which means that the green purchase intention is significantly influencing the probability of a consumer's decision on purchasing green products.

Consumer purchase intention of green products is affected by various variables, and these variables are studied and shown that have a significant influence on green purchase intention. A substantial amount of research has been conducted on green purchasing intentions, and several factors have been identified that influence green purchasing intentions, including eco-labels (Joshi & Rahman, 2016), green pricing Mahmoud (2018), green advertising (Kong et al., 2014), perceived environmental responsibility Choshaly (2017), and environmental knowledge (Pratiwi et al., 2018).

### **The Theory of Planned Behavior (TPB)**

The Theory of Planned Behaviour (TPB) was discovered by Ajzen (1985), which is an extension of the theory of reasoned action (TRA; Ajzen & Fishbein (1980); Fishbein & Ajzen (1975). According to TRA Ajzen & Fishbein (1980), two main factors determine individual behavior: individual attitude & social norms. However, perceived behavioural control is added as an additional determinant of individual action in the TPB Ajzen (1985).

The TPB Ajzen (1985) stated that intentions control all actions. This theory explains that an individual who intends to perform or not perform a particular behaviour is a prerequisite to any action. However, an individual intention can be influenced by time & other confounding factors, whether internal or external, that dictates the individual willingness to carry out the intention. According to Ajzen (1985), the individual intention is determined by three main factors: individual attitude, social norms, & perceived behavioural control.

In the TPB, attitude means the degree to which an individual has an unfavourable or favourable evaluation of the action of interest. It takes into consideration the outcomes of performing the behaviour. Besides, social norms are described as the customary codes of behaviour in a people or group or larger cultural context. Social norms include normative, or standard, in a group of people. According to Joshi & Rahman (2016), perceived behavioural control is asserted as a person's perception of their ability in performing a specific action.

### **Eco-labels**

According to Gallastegui (2002), eco-labels as the tools which showing & communicating the product's environmental performance. Indicating environmental labelling on products can effectively communicate to the consumers about the product associated benefits (Thogersen, 2002; D'Souza et al., 2006). Eco-labels provide transparency & enhance trust in the environmental identities of products that will support consumer decision-making for products with environmentally friendly feature (Thogersen, 2002).

In addition, Sammer & Wustenhagen (2006) asserted that eco-labels provide consumers with easily accessible and trustworthy information on environmental features. Consumers' knowledge about environmentally friendly products can be enhanced through eco-labelling. Thogersen (2002) defines eco-labels as the tools that will impact the consumer decision-making process & influence their product considerations.

Consumers can understand the environmental impact of their purchase decisions through eco-labelling, whereas producers can announce to the market about their green initiatives. Gallastegui (2002) defines that eco-labels are essential, first to preserve the environment, and second, to ensure the sustainability of consumer behaviour.

According to Elham's & Nabsiah's (2011) study, they have established a conceptualised model that examined the influences of environmental advertising, eco-label, and eco-brand on consumer purchase intention in Penang, Malaysia. They recommended that these three

marketing tools are helpful in improving consumers' knowledge about environmentally friendly products as well as their ability to differentiate between traditional products and green products.

Previous researchers have done their studies that shown a positive relationship of eco-labelling towards purchasing intention of green (Wahid et al., 2011). Therefore, it is vital to give more explicit information and awareness on green product labelling to help customers understand the benefits of green products and create their intention to purchase green products.

Other than that, Joshi & Rahman (2016) have developed a conceptualised framework with six variables in their study, & eco-labelling is one of the variables used to investigate its influences on green purchasing.

*H1: There is a significant relationship between eco-labels and green purchase intention towards green eco lighting products.*

## **Green Price**

Price is another factor that would influence consumer purchase intention on purchasing a particular product. Price premium describes the additional amount paid for the product instead of the regular price, indicating that consumers are ready to pay for and buy green products. Mandese (1991) believes that consumers are sensitive to product price when they purchase green products.

According to Bonini & Oppenheim (2008), consumers perceived that green products are highly-priced compared to traditional products. Karatu & Mat (2015) stated that various studies were carried out to investigate the correlation between green price and consumer purchase intention. The results show that green price significantly influenced the purchase intention of consumers. A conceptualised framework with five variables has been developed by Mahmoud (2018), and one of the variables is the green price that used to examine its influences on purchase intention of green.

*H2: There is a significant relationship between green price and green purchase intention towards green eco lighting products.*

## **Green Advertisement**

According to Chan (2004), environmental advertisement is explained as the advertised product or associated production process with the features that contribute to environmental preservation or other positive outcomes that are beneficial to the natural environment. Green advertisement can be used to affect consumers' purchase intention by persuading them to buy products that are harmless to the natural environment. It is also attracting consumers' attention to the benefit of the environment and themselves if they support purchasing green products.

As Zhu's (2013) research stated, green advertisements with credibility information act as a significant character in affecting purchase intention of green products. Besides, Habib, et al., (2010) also showed that green advertising is significantly influenced on purchase intention of green products. In the research of Kong, et al., (2014), environmental advertisement has been recognised as the predictor of purchase intention on green products.

*H3: There is a significant relationship between green advertisement and green purchase intention towards green eco lighting products.*

## **Perceived Environmental Responsibility**

Sukhdial & Venice (1990), perceived environmental responsibility is defined as the degree of an individual's perception of self-employment in preserving the environment. Environmental responsibility is also described as a person living way or lifestyles (Fraj &

Martinez, 2006). Environmentally responsible consumers are those who are willing to remain and support responsible for sustaining the future environment.

Kim & Damhorst (1998), environmental responsibility consumers are those who willing to pay a higher price for purchasing green products. Nyborg, et al., (2006) described that consumers and social actors are more willing to buy green products if consumers perceive themselves to be environmental responsibility consumers & social actors. The sense of environmental responsibility may lead to individual environmental behaviour (Stern, 2000). A conceptualised framework with five variables has been developed by Choshaly (2017) and perceived environmental responsibility as the predictor in investigating the influences on green purchase intention.

*H4: There is a significant relationship between perceived environmental responsibility and green purchase intention towards green eco lighting products.*

## **Environmental Knowledge**

Environment knowledge can be derived in two forms: first, consumers are educated to understand the effect of the goods on the natural environment and second is learning or knowledge of consumer towards the product produced in an ecological manner (D'Souza et al., 2006). However, Conraud & Rivas (2009) explained environmental as the set of eco-friendly knowledge that an individual has related to environmental topics.

In addition, environmental knowledge is general knowledge of concepts, facts and relationships that concern the natural environment and its significant ecosystem Fryxell & Lo, (2003). As stated in Chan's & Lau's (2000) research, environmental knowledge is considered the predictor of buying intention. Their research result shows that consumers with higher environmental knowledge in China had a strong willingness to purchase green products.

Referring to Pagiaslis's & Krontalis's (2004) researcher has found that environmental knowledge significantly influences consumers' intention and the actual purchase of green products. Therefore, environmental knowledge is a valuable predictor of purchase intention of green in this research. In the research of Pratiwi, et al., (2018), environment knowledge has been recognized as the predictor of purchase intention of the consumer on green products.

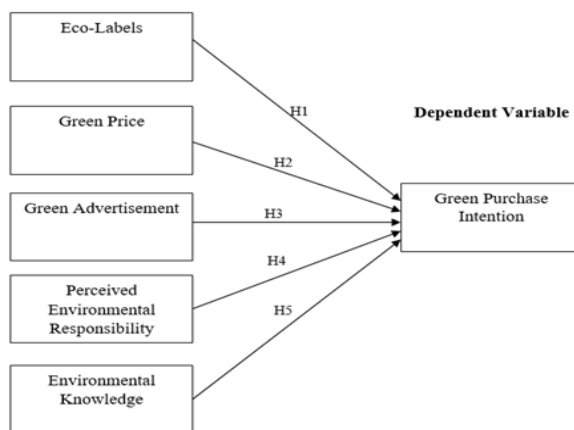
*H5: There is a significant relationship between perceived environmental knowledge and green purchase intention towards green eco lighting products.*

## **Methodology**

This section discusses the procedures adopted in realising these objectives, which include the measurement of variables in the study

## **Conceptual Framework**

The conceptual framework proposed in this study was to provide a high-level overview of the constructs and variables under investigation and their interrelationships. This study deals with the eco-labels, green price, green advertisement, perceived environmental responsibility, and environmental knowledge. Those variables are adapted from the research (Joshi & Rahman, 2016; Mahmoud, 2018; Kong et al., 2014; Choshaly, 2017; Mustafa et al., 2020; Pratiwi et al., 2018). The conceptual framework below illustrates the relationship between the dependent variable and independent variables.



**FIGURE 1**  
**PROPOSED CONCEPTUAL FRAMEWORK**

### Sample & Data

In this study, explanatory research was applied to identify the nature and extent of cause-and-effect relationships between the variables. Besides, explanatory research was used to study a problem or a situation problem in order to explain the relationships between the variables. In order to get a clearer view of the relationship, data is subjected to do statistical tests such as correlation. In this study, explanatory research was used to understand the relationships between consumer perception and green purchase intention. In this study, a quantitative methodology with a deductive approach was conducted. Quantitative methodology is defined as a scientific method, and its grounds can be identified in a positive paradigm (Grinnell, 2010). This methodology focuses on fresh data collection by the problem from a large population and analysis of the data obtained.

The target respondents in this survey research were targeted at people who are living in Melaka. Referring to the Department of Statistics Malaysia (2018), the population of people is around 0.92 million in Melaka. According to Krejcie & Morgan (1970), if the population is 1,000,000 people and the samples size should be 384. In this survey research, 384 respondents were selected as the sample size who live in Melaka as the source of investigation and evaluation to answer the questionnaires.

The five variables are known as the independent variables (X), which are eco-labels (X1), green price (X2), green advertisement (X3), perceived environmental responsibility (X4), and environmental knowledge (X5). The regression equation is established to show how the independents variables overall fit and examine the relative contribution of each of the predictors to the total variance explained. The equation of multiple regression of this study shows below:

$$\text{Equation: } Y = a + bX_1 + cX_2 + dX_3 + eX_4 + fX_5$$

### Results & Discussions

Discuss the results of the analysis from the data analysis and findings of the study.

### Descriptive Statistics

Table 1 indicates the descriptive statistics of eco-labels, green price, green advertisement, perceived environmental responsibility, and environmental knowledge influencing green purchase intention towards green eco lighting products. Perceived

environmental responsibility has the highest value of the mean, which is 4.14, followed by green and eco-labels, which are 4.05 and 4.03, respectively. However, green advertisement and environmental knowledge have the same mean value of 4.02, which is the lowest mean value.

Other than that, standard deviation means how measurements for a group are spread out from the mean. The lower the standard deviation value, the more of the numbers are closer to the average. The result shows that green advertisement has the lowest standard deviation value of 0.64, followed by green price, which is 0.65. However, the standard deviation value of eco-labels and perceived environmental responsibility is 0.69. Environmental knowledge has the highest value of standard deviation, which is 0.73. All the value of standard deviation indicates that respondents do not deviate from their mean.

<b>Independent variables</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Ranking</b>
Eco-labels	291	1.5	5.00	4.03	0.69	3
Green price	291	1.5	5.00	4.05	0.65	2
Green advertisement	291	1.75	5.00	4.02	0.64	4
Perceived Environmental Responsibility	291	1.5	5.00	4.14	0.69	1
Environmental Knowledge	291	1.25	5.00	4.02	0.73	4
Valid N (Listwise)	291		5.00			

### Multiple Regression Analysis

From Table 2, there are five independent variables have been analyzed: eco-labels, green price, green advertisement, perceived environmental responsibility, and environmental knowledge. The result shows that perceived environmental responsibility is the strongest predictor as  $\beta=0.446$ ,  $t(291)=6.953$ ,  $p<0.05$ . This is because the unstandardised beta,  $\beta$  of perceived environmental responsibility, is the highest positive value than other independent variables. Hence, perceived environmental responsibility has the most decisive influence of positive relationship with green purchase intention towards green eco lighting products. This finding is consistent with the study of Mun (2014) found that perceived environmental responsibility as the most significant predictor because it was the most decisive influence on green purchase intention.

Next, the second strongest predictor is environmental knowledge,  $\beta= 0.427$ ,  $t(291)= 6.968$ ,  $p<0.05$ . This is because the unstandardised beta,  $\beta$  of environmental knowledge, is the second-highest positive value compared to other independent variables. Therefore, environmental knowledge has the second-highest influence of positive relationship with green purchase intention towards green eco lighting products. The result concurs with the research findings by (Bisschoff & Liebenberg, 2016), which reported that environmental knowledge has a positive impact on consumer purchase intention of green products.

After that, the second-lowest predictor is eco-labels,  $\beta= 0.133$ ,  $t(291)= 1.811$ ,  $p>0.05$  as  $P= 0.071$ . This is because the unstandardised beta,  $\beta$  of eco-labels, is the second-lowest positive value compared to other independent variables. Hence, eco-labels have the second-lowest influence of positive relationship with purchase intention of green but no important influence on purchase intention towards green eco lighting products since  $p>0.05$ . This finding is similar to Sigit, et al., (2017), who discovered that eco-labels have little influence on green purchase

intention. Furthermore, Jung, et al., (2016) found that eco-labels did not encourage consumers to buy green products. This is because eco-labels cause consumer confusion, which diminishes the value of eco-labels as a strategy for influencing consumers' purchase intentions (Harbaugh et al., 2011).

The lowest predictor is green price,  $\beta = 0.112$ ,  $t(291) = 1.261$ ,  $p > 0.05$  as  $P = 0.208$ . This is because the unstandardised beta of green has the lowest positive value compared to the other independent variables. Thus, the green price has a moderately positive relationship with green purchase intention but has no significant influence on green eco lighting product purchase intention because  $p > 0.05$ . Ginsberg & Bloom (2004) stated that green price is not the main predictor of consumer's purchase intention towards green products.

On the other hand, green advertisement is a predictor with a negative beta coefficient value where  $\beta = -0.228$ ,  $t(291) = -2.047$ ,  $p < 0.05$ . Since the p-value of green advertisement is 0.042, which is less than 0.05, green advertisement influences green purchase intention. However, the relationship between green advertisement and green purchase intention is negative. This finding is supported by Habib, et al., (2010), which showed that environmental advertising has a negative influence on purchase intention of green. Most consumers avoid the advertisement because they consider the advertisement misleading and annoying (Bishop, 1997). Therefore, the excessive advertisement would decrease their purchase intention as they ignore the content of the advertisement.

Based on the result of multiple regression, the relationship between three dependent and independent variables depends on the following multiple regression equation. However, eco-labels and green price are not inside the new model because there is no significant relationship with green purchase intention in this study. The multiple regression of this study is shown as below:

$$\text{Equation} = a + bX_1 + cX_2 + dX_3$$

$$Y = 0.33 + (-0.23)X_1 + 0.45X_2 + 0.43X_3$$

<b>Model</b>	<b>Unstandard Coefficients</b>		<b>Standardized coefficient</b>	<b>t</b>	<b>sig</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	0.326	0.244	-	1.338	0.182
Eco- Labels	0.133	0.074	0.118	1.811	0.071
Green Price	0.112	0.089	0.093	1.261	0.208
Green Advertisement	-0.228	0.111	-0.187	-2.047	0.042
Perceived Environmental responsibility	0.446	0.064	0.396	6.953	0.000
Environmental Knowledge	0.427	0.061	0.398	6.968	0.000

A dependent variable green purchase intention

## **H1 Accepted**

There is a significant relationship between eco-labels and purchase intention of green eco lighting products. This result is similar to the research of Wahid, et al., (2011), which reported a significant relationship of eco-labelling towards green purchasing intention. Thanika, et al., (2012) stated that the accuracy of eco-labels information for green products is significantly influenced by consumer purchase intention.



## **H2 Accepted**

The finding is in line with the research of Mahmoud (2018), which showed that green price significantly influenced consumers' purchase intention. Consumers who perceive green eco lighting products are expensive will consider not purchasing the products. In contrast, consumers who perceive the products are reasonable and worthy to pay a higher price they are intended to purchase the products even it is expensive.

## **H3 Accepted**

The research findings are similar to Thanika, et al., (2012)'s study, which discovered a fairly significant correlation between green advertisement and green purchase intention. Besides, the advertisement with emotional content can increase consumers' attention towards the advertisements (Hawkins et al., 1998). Besides, Karna, et al., (2001) stated that green advertisements could convince consumers to purchase green products. As a result, the marketer should develop an effective green advertisement that encourages consumers to make eco-friendly purchases by providing accurate advertisements for green eco lighting products.

## **H4 Accepted**

There is a significant relationship between perceived environmental responsibility and green purchase intention towards green eco lighting products. In addition, the study of Dagher & Itani (2014) found a significant relationship between consumers' perception of environmental responsibility and consumers' purchase intention towards green products. This is because individuals who are more concerned about the environment are more likely to purchase environmentally friendly products Kalafatis, et al., (2001). The consumer will view this as their responsibility for environmental protection. As a result, they intend to promote eco-friendly products.

## **H5 Accepted**

The findings are consistent with Wahid, et al., (2011), who discovered that consumers' purchasing intentions are highly dependent on their environmental knowledge. Besides, Mei's, et al., (2012) research found that environmental knowledge influences a consumer to buy green products. Stern (1992) claims that consumers have environmental issues knowledge, which influences their green purchase intention. The consumer has the environmental knowledge they will be more concerned about the environment and then choose to purchase green products.

## **CONCLUSIONS**

This study revealed that eco-labels, green price, green advertisement, perceived environmental responsibility, and environmental knowledge had significant positive influences on green purchase intention towards green eco lighting products. The results also found that environmental knowledge and perceived environmental responsibility strongly influenced green purchase intention for green eco lighting products in Melaka. Most of the respondents with the characteristics of females, young people, high income, and education level are more aware of green eco lighting products than males, older people, low income, and education level.

The main objective to conduct this research was to look into the relationship between consumer perception and purchase intention towards green eco lighting products. Nowadays, the demand for green products is increasing. Thus, the marketer should consider the influence of

consumer perception towards their purchase intention. According to the study's findings, respondents were influenced to purchase and use green eco lighting products because of their environmental knowledge, followed by perceived environmental responsibility, green price, eco-labels, and green advertisement. In cross-tabulation results, respondents who are female, young, high income and education level are more aware of green eco lighting products. Thus, marketers should develop their marketing strategy to target male, young consumers, consumers with low income and education level to know them green eco lighting products since these consumers have low awareness of green eco lighting products. Besides, marketers can educate consumers on environmental issues through advertising to enhance their purchase intention of green eco lighting products. Marketers also have to improve their green advertisement by providing clear information to consumers. In addition, marketers can make an effort on eco-labelling, enabling consumers to differentiate green eco lighting products from other products easily.

Further research is required to enhance the understanding of consumer perception influences on green purchase intention. Future studies should consider the influence of other factors not included in this study, such as demographic and other social factors influencing green purchase intention. For example, consider the impact of demographic profiles (gender, age, income level, and education) on green purchase intention. In addition, this study focused on green eco lighting products; hence, future research can study and focus on other product categories to have a deep understanding of consumer perception towards the specific product. Lastly, future research can collect data by using multi-method approaches, combining qualitative and quantitative methods. Multi-method approaches enable the researcher to obtain data and results with different data sources, methods, or observers.

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