

# FACTORS INFLUENCING INDONESIAN CONSUMERS' PURCHASE INTENTION OF ECO-LABELED CANNED TUNA

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## Abstract

*Ecolabelling for wild-caught seafood, including Dolphin-Safe and MSC, has become more important as environmental issues increase. This study investigates the factors influencing Indonesian consumers' purchase intentions for eco-labeled canned tuna, focusing on consumer trust, behavioral intentions, perceived effectiveness, subjective norms, price, knowledge, and attitudes. Utilizing the Fuzzy AHP method, the study prioritizes these factors to understand their impact on purchasing decisions. The findings reveal that perceived consumer effectiveness, attitudes, and trust are the most significant drivers of purchasing intentions for eco-labeled canned tuna. Conversely, consumer knowledge had a relatively low impact, highlighting a critical gap in consumer education regarding environmental issues and ecolabelling. While consumer knowledge had a relatively low impact, this finding highlights a critical gap in consumer education regarding environmental issues and ecolabelling. To address this gap, enhancing consumer awareness and education about ecolabels could increase the acceptance and purchase of eco-labeled products. The results offer valuable guidance for policymakers and stakeholders aiming to improve eco-labeling initiatives and align them with consumer preferences, ultimately supporting sustainable consumption practices.*

**Keywords:** Consumer Behavior, Ecolabelling, Eco-labeled Canned Tuna, Fuzzy AHP.

## 1. Introduction

Sustainable consumption practices are needed in the fishing industry due to environmental concerns. For example, an estimated 650,000 marine mammals are caught or seriously

injured in fisheries annually, including 300,000 whales and dolphins (Smith et al., 2014). Moreover, overfishing in the industry has led to the exploitation of migrant fishermen as companies aim to reduce costs (Greenpeace, 2020). As a solution, eco-label certifications have been developed for fishery products to enable consumers to make informed decisions.

Ecolabels such as Dolphin-Safe and Marine Stewardship Council (MSC) have been introduced to promote sustainable fishing practices and address issues of fish exploitation and labor. The Dolphin-Safe label guarantees that the product has not been associated with any dolphin chase, netting, or killing, while the MSC label certifies that the seafood producer adheres to sustainable fishing standards. Since 2000, there has been a significant increase in the use of ecolabels in the industry, with over 50 labels varying in standards, assessment levels, and focus (Asgha and Cook, 2022). These labels have different focuses, such as sustainability, responsible fishing practices, organic, and fairness.

In Indonesia, awareness on ecolabels is limited, reflected in the scarce availability of eco-labeled products (Pradipta, 2018). Many consumers are unfamiliar with labels such as Dolphin-Safe and MSC, and only a small percentage can recognize them (Asgha & Cook, 2022). However, there is a growing interest in sustainable living and green consumerism among Indonesians, with increasing willingness to pay a premium for eco-friendly products (IBCSO, 2021; Tan, 2022). The price difference between eco-labeled products and non-eco-labeled ones ranges from 6,000 to 10,000 IDR.

The importance of adopting sustainable products is highlighted by Sheoran and Kumar (2020), who suggest that such practices can drive sustainable economic growth and contribute to a more sustainable future. Indonesia, a major player in the global tuna fishing industry, contributes significantly to the processed tuna export market, alongside countries like Thailand, the Philippines, and Vietnam (Greenpeace, 2020). National fish consumption has also seen a positive trend from 2015 to 2022 (Indonesian Statistics Center, 2023).

This study aims to address the following research questions: What is the level of awareness among Indonesian consumers regarding canned tuna products with ecolabels? What factors influence their willingness to purchase these products? And how do these factors impact their overall behavior towards eco-labeled canned tuna? By focusing on consumer behavior towards eco-labeled canned tuna, this research seeks to understand the impact of recent ecolabel introductions in the Indonesian market and their accessibility to consumers. This research specifically targets consumer behavior towards canned tuna products, as ecolabelling has recently been introduced in the Indonesian market and these products are readily accessible to consumers.

## 2. Literature Review

Several papers and articles have been conducted to examine the impact of various factors on consumer buying behavior. A comprehensive review of multiple articles and papers has facilitated the identification of the determinants of consumer purchasing decisions.

### 2.1 Trust

Consumer confidence in the environmental performance of green products is a crucial factor (Arora et al., 2021). Previous studies have revealed that consumers take the time to read label information before making purchasing decisions (Galati et al., 2021). Ecolabels

have been found to enhance consumer confidence in the products they choose to consume (Brécard et al., 2009), while certification labels can help reduce information asymmetry and create value (Mulazzani et al., 2021). A lack of trust in eco-friendly products can significantly reduce the intention to buy them.

## ***2.2 Behavioral Intention***

The factor of behavioral intention is affected by attitudes and subjective norms. According to the theory of planned behavior, consumer attitudes and subjective norms are key elements in determining behavioral intentions (Ajzen, 1991). Previous studies have found that people with a higher altruistic value orientation are more concerned about the environment and are more likely to engage in pro-environmental behavior (Galati et al., 2021; Mulazzani et al., 2021). Additionally, better-informed consumers tend to request seafood with ecolabeling when making purchases (Salladarré et al., 2010).

## ***2.3 Perceived Consumer Effectiveness***

According to Webster in Arora et al. (2021), one important factor in assessing consumers is determining how much their consumption choices can contribute to solving problems on a larger scale. Consumers who are mindful of their environmental and social impact actively seek information about product attributes and are willing to pay more for eco-friendly options (Doran, 2009). Previous studies have found that consumers' perceived effectiveness plays a role in their decision to purchase green products (Sheoran & Kumar, 2020; Galati et al., 2021; Asgha & Cook, 2022). However, Song et al. (2019) point out that not all intentions and preferences for ecolabels translate into actual behavior.

## ***2.4 Subjective Norms***

The term "subjective norms" refers to an individual's perception of social pressures that may encourage or discourage them from engaging in a particular behavior based on the opinions of individuals or reference groups that they consider important (Ajzen, 1991). These norms can influence not only purchasing decisions but also other factors that impact the intention to buy environmentally friendly products (Arora et al., 2021). Various cultural, personal, and social factors can also play a role in consumer decision-making (Kotler & Keller, 2016). Research has shown that an individual's social circle can influence their product choices; for instance, if family and friends do not use eco-friendly products, the individual may be less likely to do so as well. Additionally, some consumers may avoid sustainable products for fear that it will not improve their social status in society (Sheoran & Kumar, 2020).

## ***2.5 Price***

This factor is the most frequently considered factor in previous studies. High prices emerge as one of the most critical barriers to sustainable consumer behavior (Sheoran & Kumar, 2020). Consumers consider prices when buying products to maximize satisfaction (Rubinfeld and Pindyck, 2013). Previous studies show that environmentally conscious consumers are willing to pay a premium for green products (Mulazzani et al. 2021; Liu et al., 2017; Brécard et al., 2009). However, Cremer & Thisse (1999) found that consumers vary in their willingness to pay high prices for environmentally friendly products, even

when they prefer those products. Anugerah (2022) discovered that eco-labeled products tend to be more expensive than conventional products, and consumers' lack of awareness about their importance is a significant reason why they prefer conventional products. On the other hand, research also shows that the price level does not always impact consumers' purchasing decisions for eco-labeled canned tuna (Asgha & Cook, 2022).

### ***2.6 Knowledge***

Consumers' high knowledge of green products leads to stronger beliefs in their positive impact (Arora et al., 2021). Previous studies support the idea that consumer knowledge positively affects the intention and decision to purchase environmentally friendly products (Galati et al., 2021; Sheoran & Kumar, 2020; Salladarré et al., 2010; Brécard et al., 2009). While Arora et al. (2021) and Song et al. (2019) present opposing views. Liu et al. (2017) found that even consumers with relatively low knowledge of ecolabel production standards still hold positive attitudes towards ecolabel products due to their perceived health and environmental benefits. Meanwhile, Rahman (2019) utilized the theory of planned behavior and knowledge variables to examine how effective ecolabels are in attracting consumer interest in packaged drinks. The findings indicate a notable positive correlation between knowledge and consumer attitudes, as well as subjective norms and behavioral intentions (Rahman, 2019).

### ***2.7 Attitude***

This factor is identified as the individual ability to assess the costs and benefits of certain actions (Ajzen, 1991). Previous studies have shown that consumers are more likely to choose products with ecolabels because they offer environmental benefits (Liu et al., 2017). Consumers who value sustainability and believe that eco-friendly products protect the environment and workers are more likely to consider ecolabels (Galati et al., 2021). Additionally, these consumers are willing to pay more for products with ecolabels, as shown by studies conducted by Liu et al. (2017) and Brécard et al. (2009).

## **3. Methodology**

This study used a structured questionnaire to gather data, focusing on Indonesian residents aged 17 and above who had purchased canned tuna at least once. A purposive sampling approach was employed, with an initial target of 230 respondents based on The Rule of Thumb method (Arora et al., 2021). The study successfully collected responses from 243 participants, with a composition of 77.4% female and 22.6% male, primarily in the 18-24 (65.8%) and 25-34 (24.7%) age groups. Table 1 summarizes the sample profile.

The questionnaire consisted of closed-ended questions divided into two sections: Part A for demographic information and Part B for 23 statements related to seven criteria. Responses were rated on a five-point Likert scale, and internal consistency was confirmed with a Cronbach's Alpha of 0.9. Criteria and sub-criteria were ranked based on average scores, with barriers selected if the mean score was above 3 (Sheoran & Kumar, 2020). The hierarchical structure and pairwise comparison matrix were developed using relevant literature and expert opinions. While purposive sampling was used to ensure relevant responses, it may limit the representativeness of the sample for the broader Indonesian population.

**Table 1 – Sample Profile**

Characteristics	Percentages
Gender	
Males	22.6
Females	77.4
Education Level	
Elementary School	0.4
Junior High School	0.4
Senior High School	41.6
Diploma	13.6
Bachelor's Degree	41.9
Master's Degree	2.1
Monthly Income	
Less than 1 million IDR	28.8
1-4.99 million IDR	46.9
5-9.99 million IDR	18.9
10-14.99 million IDR	3.3
More than 15 million IDR	2.1
Age	
Between 18-24 years	65.8
Between 25-34 years	24.7
Between 35-44 years	4.9
Between 45-54 years	3.7
55 years or more	0.8

Source: Authors' analysis

### **3.1 Fuzzy Analytical Hierarchical Process**

To analyze the obtained data, the Fuzzy Analytic Hierarchy method is used. This method aims to consider subjective perceptions in decision-making by assigning weight to criteria. Fuzzy set theory is the most commonly used method for addressing uncertainty in multicriteria decision analysis (Demirel et al., 2008). The Fuzzy AHP method is able to handle the complexity of intrinsic ambiguity in AHP. Human experience and judgment are often represented in linguistic forms and patterns that are not clear in more complex systems. Data that can be quantified provides a better description of research (Elveny and Syah, 2014). Previous research used Fuzzy AHP in various areas such as comparing barriers to sustainable consumer behavior (Sheoran & Kumar, 2020) and factors influencing consumer purchase intentions towards organic food (Arora et al., 2021).

The following are the steps of Chang's Extent analysis for Fuzzy AHP (Chang, 1996).

#### **3.1.1 Hierarchical Structure**

The hierarchy arrangement is formed based on the factors to be studied. Hierarchy is a visualization of complex problems into a structure where the highest level is the goal, followed by criteria and sub-criteria. Simplifying the problem into these elements will make it easier for decision-makers to analyze problems and draw conclusions from problems.

### 3.1.2 Pairwise Comparison Matrix

The matrix is arranged based on the level of importance of each criterion based on the AHP scale. This matrix describes how much influence each element has on other elements. The description of the interest intensity of the AHP scale can be seen in Table 2.

### 3.1.3 The Consistency Index

Consistency testing is carried out to ensure that the assessment of elements in the pairwise comparison matrix can be considered logical. Here below is the equation to get the CI value.

$$CI = \frac{\lambda_{max} - n}{n - 1}$$

After obtaining the CI value, the CR value can be obtained ( $CR = \frac{CI}{RI}$ ). The matrix is consistent if the CR value is  $\leq 10\%$ .

### 3.1.4 Triangular Fuzzy Numbers (TFN)

Fuzzy AHP is presented by determining the degree of triangular membership function and TFN (Chang, 1996). The TFN number is a fuzzy set theory used to measure aspects related to human subjective judgment using linguistic forms. Pairwise comparisons are represented on a Fuzzy scale. Previous research has used Fuzzy AHP in various fields, such as comparing barriers to sustainable consumer behavior (Sheoran & Kumar, 2020) and factors influencing consumer purchase intentions for organic food (Arora et al., 2021).

In determining the TFN scale, the membership function  $\mu_M(x): R \rightarrow [0,1]$  is equal to:

$$\mu_M(x) = \begin{cases} \frac{x}{m-l} - \frac{l}{m-l}, & x \in [l, m] \\ \frac{x}{m-u} - \frac{u}{m-u}, & x \in [m, u] \\ 0, & \text{elsewhere} \end{cases}$$

Where  $l \leq m \leq u$ ,  $l$  and  $u$  are the lower and upper values of the middle value.

If element  $j$  is more critical than element  $i$ , then the pairwise comparison scale can be represented by fuzzy numbers.

$$a_{ij}^{-1} = \left(\frac{1}{u}, \frac{1}{m}, \frac{1}{l}\right)$$

Table 2 – TFN Scale

AHP Scale	Linguistic Scale	TFN	Reciprocal
1	Just Equal	(1,1,1)	(1,1,1)
2	Intermediate	(1/2, 1, 3/2)	(2/3, 1, 2)
3	Moderately Important	(1, 3/2, 2)	(1/2, 2/3, 1)
4	Intermediate	(3/2, 2, 5/2)	(2/5, 1/2, 2/3)
5	Strongly Important	(2, 5/2, 3)	(1/3, 2/5, 1/2)
6	Intermediate	(5/2, 3, 7/2)	(2/7, 1/3, 2/5)
7	Very Strong	(3, 7/2, 4)	(1/4, 2/7, 1/3)
8	Intermediate	(7/2, 4, 9/2)	(2/9, 1/4, 2/7)
9	Extremely Strong	(4, 9/2, 9,2)	(2/9, 2/9, 1/4)

Source: Chang (1996)

### 3.1.5 Fuzzy Synthesis Value

Fuzzy synthesis ( $S_i$ ) values from pairwise comparisons are obtained by dividing the total values of  $l, m, u$  per row by the total values of  $l, m, u$  per column. Here are the functions.

$$S_i = \sum_{j=1}^m M_{gi}^j \odot \left[ \sum_{i=l}^n \sum_{j=1}^m M_{gi}^j \right]^{-1}$$

Where  $M_{gi}^j$  is the value of  $i$  object level analysis for the value  $m$ .

### 3.1.6 Priority Vector

The vector for each criterion is obtained through a comparison of fuzzy numbers. To compare  $M_j$  and  $M_i$ , the  $V(M_j \geq M_i)$  and  $V(M_i \geq M_j)$  values must be found first.

$$V(M_j \geq M_i) = \begin{cases} 1, & \text{if } m_j \geq m_i \\ 0, & \text{if } l_i \geq u_j \\ \frac{l_i - u_j}{(m_j - u_j) - (m_i - l_i)}, & \text{others} \end{cases}$$

### 3.1.7 Defuzzification Ordinal Value

The ordinate defuzzification value can be obtained after obtaining the value of each defuzzification factor. The value taken is the minimum value of the factors in each element.

$$\begin{aligned} &= V[(M \geq M_1), (M \geq M_2), \dots, (M \geq M_k)] \\ &= \min V[(M \geq M_i) \quad i = 1, 2, \dots, k] \end{aligned}$$

Where  $V(M \geq M_1, M_2, \dots, M_k)$  is  $M_i (i = 1, 2, \dots, k)$ .

Therefore,  $d'(A_i) = \min V (S_i \geq S_k)$  with  $k = 1, 2, \dots, n; k \neq i$ .

### 3.1.8 Normalization of Fuzzy Vector Weights

Vector weights are normalized by dividing the defuzzification factor by the total defuzzification value. This stage is carried out on each selected element. The fuzzy vector weights are defined as:

$$W = (d'(A_1), d'(A_2), \dots, d'(A_n))^T$$

Where  $A_i (i = 1, 2, \dots, n)$  is  $n$  element.

The normalized value of vector weights can be obtained by

$$W = (d(A_1), d(A_2), \dots, d(A_n))^T$$

Where  $W$  is a non-fuzzy number.

### 3.1.9 Priority Results Ranking

The calculation results are sorted from the highest value. Decisions are taken from the largest results indicating that the element is the highest priority.

## 4. Results and Discussion

### 4.1 Results on the Measures Used

The weights for each criterion and sub-criteria are obtained through Fuzzy AHP calculations with the same steps as when determining the local weights of the main criteria. While the global weight is calculated by multiplying the value of the local weight of the main criteria with the local weight of the sub-criteria (Sheoran & Kumar, 2020). Table 3 is the result of calculations using Fuzzy AHP.

Based on the results, perceived consumer effectiveness is the criterion with the largest local importance with 0.042, followed by attitudes (0.252), trust (0.227), price (0.075), behavioral intention (0.022), subjective norms (0.02), and knowledge (0.002). In contrast, price and trust were found to be the most important factors in a similar study (Arora et al., 2021). Consumers who support ecolabelling policies pay more attention to price when buying fish (Brécard et al., 2009). Indonesian consumers' intention to buy eco-labeled canned tuna products is relatively low, and their desire to purchase eco-labeled canned tuna products is not fully driven by social pressure. The low weight of consumer knowledge indicates the need to improve consumer education on environmental issues and ecolabelling. Similar results were found in Arora et al. (2021), who found that consumer knowledge is ranked the lowest among other factors.



**Table 3 – Fuzzy AHP Calculations Results**

Criteria/Sub-criteria	Criteria's Local Importance		Sub-Criteria's Local Importance		Sub-Criteria's Global Importance	
	Weights	Ranking	Weights	Ranking	Weights	Ranking
<b>Trust (A)</b>	<b>0.227</b>	<b>3</b>				
I believe in ecolabelling of food products. (A1)			0.292	3	0.066	7
I always read the label information on food products before purchasing. (A2)			0.024	4	0.006	17
I believe that canned tuna products with ecolabels, such as Dolphin-Safe and MSC, have gone through a certification process that prioritizes sustainability. (A3)			0.314	2	0.071	6
I trust shopping places that sell eco-labeled canned tuna. (A4)			0.370	1	0.084	4
<b>Behavioral Intention (B)</b>	<b>0.022</b>	<b>5</b>				
I tend to buy eco-labeled canned tuna if I see it on display. (B1)			0.684	1	0.015	12
I often visit stores to buy eco-labeled canned tuna. (B2)			0.316	2	0.007	13
<b>Perceived Consumer Effectiveness (C)</b>	<b>0.402</b>	<b>1</b>				
Eco-labeled canned tuna products can have a positive effect on the environment and society. (C1)			0.443	2	0.178	2
I want to buy eco-labeled canned tuna in the hope that I can make an impact on environmental conservation. (C2)			0.046	3	0.018	10
Purchasing eco-labeled canned tuna can make a meaningful difference in environmental conservation. (C3)			0.511	1	0.205	1
<b>Subjective Norms (D)</b>	<b>0.020</b>	<b>6</b>				
The people around me, such as my family and close friends, play a role in my decision to buy canned tuna products. (D1)			0.214	3	0.004	18
I want to buy eco-labeled canned tuna because of the positive improvement in social image that I perceive after purchase/use. (D2)			0.316	2	0.006	16
I want to buy eco-labeled canned tuna because my family/friends use the product and encourage me to do so. (D3)			0.129	4	0.003	19
I want to buy canned tuna with ecolabels because I have enough awareness about ecolabels. (D4)			0.341	1	0.007	15
<b>Price (E)</b>	<b>0.075</b>	<b>4</b>				
The price of eco-labeled canned tuna is in line with the quality offered. (E1)			0.398	1	0.030	8
Price plays an important role in purchasing decisions. (E2)			0.245	3	0.018	11
I am willing to pay a premium price for eco-labeled canned tuna products. (E3)			0.090	4	0.007	14
I wanted to buy canned, eco-labeled tuna that was similar in price to regular products. (E4)			0.267	2	0.020	9

<b>Knowledge (F)</b>	<b>0.002</b>	<b>7</b>			
Reading news or articles gives me a good knowledge of eco-labeled food products. (F1)			0.645	1	0.001 20
I am used to products that come in environmentally safe packaging. (F2)			0.332	2	0.001 21
I can recognize brands and symbols of canned tuna products that are environmentally friendly. (F3)			0.017	3	0.00003 22
I can easily identify the eco-labeled canned tuna. (F4)			0.005	4	0.00001 23
<b>Attitude (G)</b>	<b>0.252</b>	<b>2</b>			
Purchasing eco-labeled canned tuna will give me a positive feeling about contributing to environmental improvement. (G1)			0.684	1	0.173 3
Purchasing eco-labeled canned tuna will give me a positive feeling about contributing to the protection of the labor involved in the production process. (G2)			0.316	2	0.080 5

Source: Authors' analysis

In global weights, it can be seen that ecolabelling plays a significant role in building trust among Indonesian consumers when it comes to food products and stores that sell eco-labeled canned tuna. However, there seems to be a lack of interest in reading label information and a tendency to avoid paying premium prices, despite holding strong altruistic values. As a result, consumers are more inclined to purchase eco-labeled canned tuna if it is priced the same as non-eco-labeled products. They have a greater willingness to buy eco-labeled canned tuna products at a price similar to regular products than their willingness to pay a premium price. A more detailed explanation regarding each factor will be explained in Section 4.2.

#### 4.2 Discussion

The results indicate that consumers exhibit a high level of trust in shopping places offering eco-labeled canned tuna products, with Dolphin-Safe and MSC ecolabels also being significant. Supermarkets are the preferred retail choice for purchasing canned tuna. This underscores the importance of ecolabels in shaping consumer beliefs and purchasing habits. Ecolabels enhance consumer confidence, particularly among the 18-34 age group, who demonstrate greater environmental awareness (Brecard et al., 2009). This observation aligns with Salladarré et al. (2010) and Tan (2022), who emphasize the role of ecolabels in consumer trust. However, the relatively low importance assigned to reading label information contrasts with findings from Galati et al. (2021), which suggest that consumers often spend time analyzing label information. Instead, consumers prioritize product attributes such as price and packaging over label information (Song et al., 2019). This discrepancy suggests that while trust in ecolabels is high, actual label-reading behavior may not be as prevalent, indicating a potential area for further research and consumer education.

Consumers show little interest in buying eco-labeled products. Many consumers are unaware of environmentally friendly products, which can lead to perceptions of them as costly or inconvenient to obtain. Limited availability in certain regions further exacerbates this issue (Paço et al., 2013). The WWF-Indonesia and Nielsen Survey (2017) revealed that

53% of consumers struggled to find eco-friendly products locally (IBCSD, 2021). This finding supports Salladarre et al. (2010), who found that information access influences the likelihood of seeking out eco-labeled seafood. Despite the impact of attitudes and subjective norms on behavioral intentions (Ajzen & Fishbein, 1980), these factors alone do not always translate into actual purchasing behavior (Kotler & Keller, 2016). This implies that increasing consumer awareness and product availability could be crucial in enhancing the practical impact of pro-environmental intentions.

Perceived consumer effectiveness is a crucial factor influencing both local and global rankings. Consumers' perceptions of eco-labeled canned tuna impact their purchase intentions, primarily due to concerns about environmental preservation (Liu et al., 2017). Nonetheless, the perceived impact of individual efforts on environmental change remains low, which hinders the adoption of green products (Sheoran & Kumar, 2020). This aligns with Galati et al. (2021), who noted that consumers with altruistic attitudes towards sustainable food are more inclined to consider ecolabels. However, there is a gap between intention and action, suggesting that while awareness of environmental issues is present, it may not always translate into purchasing decisions (Song et al., 2019). Policymakers and marketers could address this by enhancing the perceived impact of individual actions through educational campaigns and clearer communication of environmental benefits.

The influence of subjective norms on consumer purchasing intentions appears limited. Consumers may undervalue others' opinions or consider them irrelevant in their decision-making process (Ajzen, 1991). This finding contrasts with Sheoran and Kumar (2020), who found that subjective norms do influence purchasing decisions. While family and friends do play a role in influencing consumer choices, their impact on the intention to purchase eco-labeled canned tuna is relatively low. Chan (2001) suggests that subjective norms are more influential when consumers have high environmental concern. Kotler and Keller (2016) also note that situational factors and others' attitudes can affect purchase intentions. This implies that increasing social awareness and peer influence related to eco-friendly products could enhance their market penetration.

Price remains a significant factor in consumer decision-making regarding eco-friendly products. Some consumers are willing to pay a premium for higher environmental quality (Salladarré et al., 2010), while others prioritize cost over ethical considerations (Arora et al., 2021). Indonesian consumers are willing to pay more for eco-labeled products, but high prices can be a barrier (Tan, 2022; Sheoran & Kumar, 2020). Brécard et al. (2009) and Rubinfeld & Pindyck (2013) suggest that consumers are more likely to pay higher prices if they perceive greater benefits. This underscores the need for balancing environmental benefits with affordability to enhance sustainable consumer behavior.

Knowledge about ecolabels has the smallest influence on purchasing intentions among Indonesian consumers. Ranked last among seven criteria, this indicates relatively low awareness of ecolabels. Consumer education and exposure to green products positively affect perception and reduce information asymmetry (Galati et al., 2021). Publications and socialization are crucial for raising awareness (Kotler & Keller, 2016). Although consumers may be aware of environmental issues, they might not recognize ecolabels in their daily lives (Song et al., 2019). Sheoran and Kumar (2020) support that increased awareness is essential for improving acceptance of green products. Efforts to enhance consumer education and increase visibility of ecolabels could significantly impact purchasing behavior.

Attitude significantly influences consumer buying intentions, second only to perceived consumer effectiveness. Consumers see eco-labeled products as having a lower negative environmental impact and higher quality (Brécard et al., 2009). Those with positive attitudes towards these products see them as beneficial to the environment, society, and their own health (Chan, 2001). Liu et al. (2017) note that ecolabels enhance consumer utility, and those with altruistic values are more likely to consider ecolabels and accept higher prices (Galati et al., 2021). This suggests that fostering positive attitudes towards eco-labeled products and emphasizing their benefits could enhance market acceptance and consumer willingness to pay.

For policymakers, marketers, and stakeholders, the findings suggest several key actions to enhance the effectiveness of eco-labeling initiatives and promote sustainable consumer behavior. Firstly, there should be a concerted effort to enhance consumer education about the benefits and availability of eco-labeled products, which will help bridge the knowledge gap and improve purchase intentions. Improving product availability is also crucial, as addressing the limited distribution of green products in various regions will make them more accessible to consumers. Additionally, strategies should be developed to balance the cost of eco-labeled products with consumer willingness to pay, potentially through subsidies or incentives. Leveraging positive consumer attitudes towards eco-friendly products by emphasizing their environmental benefits and quality can further support these initiatives. Integrating these insights with existing literature and focusing on practical applications can significantly aid stakeholders in fostering sustainable consumer behavior.

## 5. Conclusions

This study aims to identify the various factors that may influence the consumer purchase intentions of eco-labeled canned tuna products, as canned tuna is the most demanded product among all other tuna products in both the national and global markets and the adoption of greener lifestyles and green consumerism behavior has started to occur in society. Various factors that play an important role or act as determinants in the purchase of eco-labeled seafood products have been considered in previous literature. Factors are determined based on a literature review and the scale has been adjusted by the Fuzzy AHP method, which is then implemented to obtain results. This study has 243 respondents as samples. This study found that perceived consumer effectiveness, attitudes, and beliefs are the three main factors that influence purchasing intentions. The low weight of consumer knowledge indicates the need to improve consumer education on environmental issues and ecolabelling. The relative weights of the various factors in this study are expected to provide benefits for policy makers and other related parties, and can be expected to help in efforts to improve criteria with low priority weights.

## 6. Study Contribution and Implication

### 6.1 Sustainable Consumer Education Program

Develop and launch an extensive education campaign on the importance of environmental issues, the positive impact of purchasing eco-labeled products, and the long-term benefits to society and the environment. This education should be organized in an attractive and

easy-to-understand manner to make consumers aware of the positive impacts of purchasing eco-labeled products.

### **6.2 Tax Incentives or Subsidies for Eco-Labeled Products**

Consider providing tax incentives or subsidies to producers and consumers involved in the purchase and production of eco-labeled products. This can help reduce the price difference between sustainable products and conventional products, thus making them more affordable for consumers.

### **6.3 Partnerships with Retailers and The Food Industry**

Develop partnerships with retailers and the food industry to promote eco-labeled canned tuna products more actively. This could include setting up special displays in stores, special promotions, or even loyalty programs for consumers who choose sustainable products.

### **6.4 Future Limitations and Scope**

The study has several limitations that should be addressed in future research to enhance its credibility and comprehensiveness. One limitation is the narrow scope of research factors considered. Future studies could benefit from incorporating interviews, more in-depth literature reviews, and additional surveys to explore a wider range of factors influencing consumer behavior regarding eco-labeled products. Key factors such as product image, social clusters, income level, and perceived personal relevance were not extensively examined and could provide valuable insights into consumer preferences.

Furthermore, expanding the scope of research to include diverse consumer populations across different regions of Indonesia could offer a more representative view of consumer behavior. Incorporating cross-country studies could also provide a broader perspective on global consumer preferences and trends. Addressing these limitations through a more expansive and diverse research approach would contribute to a more nuanced understanding of the factors driving consumer behavior towards eco-labeled products.

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