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Sustainable Palm Oil Certification for Sustainable Food: Are Indonesian Consumers Buying?

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Abstract
Consumers are increasingly hesitant to engage in widespread greenwashing practices in palm oil products. The Roundtable on Sustainable Palm Oil (RSPO) exists as an international standard aimed at encouraging consumer consumption towards more sustainable palm oil. This study uses the Cognitive–Affective–Behavioral (CAB) framework to analyze factors influencing green purchasing behavior for RSPO-labeled food products in Indonesia. The cognitive dimension is represented by green brand image and green brand loyalty, while the affective dimension is represented by green brand love. This is a quantitative study using a survey method. A total of 303 respondents were collected through a purposive sampling technique with the criteria of knowing the RSPO certification and label and having purchased RSPO-labeled food products in the past three months. Data analysis was conducted using SmartPLS 4.0. The results show that green brand image and green brand loyalty have a positive and significant effect on green purchasing behavior, while green brand love has no significant effect. This suggests that the emergence of emotions towards a brand does not automatically encourage consumers to purchase environmentally friendly products. Future research can use a qualitative approach with in-depth interviews or focus group discussions to understand the reasons behind this phenomenon. The study also recommends other variables such as consumer knowledge about sustainability or risk perception towards sustainable products.
Keywords: cognitive–affective–behavior, rspo certification, green purchasing behavior, green food

Introduction

Public awareness of the green economy phenomenon is increasing along with the rise of greenwashing issues that mislead green consumers (Schmuck et al., 2018). This encourages conscious consumers to seek further information about green products by reading reviews, asking friends, checking websites, reading certification credentials and so on (Leonidou & Skarmeas, 2017). The Central Statistics Agency (BPS), (2021) revealed that 49.25% of Indonesians spend their income on consumer-food products. Based on ISO 14000, Indonesia has ecolabel regulations, namely the Regulation of the Minister of Environment of the Republic of Indonesia Number 2 of 2014, which is given to certain products that have been certified by the Ecolabel Certification Institute and, the Indonesian self-declared ecolabel logo given to products that have been verified by the Ecolabel Verification Institute based on claims by importers, producers, retailers, distributors, trademark owners, or other interested parties. Consumer demand for environmentally friendly food products is expected to continue, however, consumers are still concerned about the difference between the image and reality of a company's ecolabel and they may still doubt the green food claims (Le, 2017).

Indonesia has seen quick economic growth in the last twenty years. From 2005 to 2020, the number of people in the middle-class working group went up from 7 percent to 20 percent,

and the number of people living in poverty dropped to about 10 percent (World Bank, 2019). This growth, especially in the middle class in rural areas, is because of the expansion of the palm oil industry (Santika et al., 2019). Palm oil comes from oil palm trees and is found in many everyday products, like food and makeup (Oliphant & Simon, 2022). Many companies, including cooking oil, instant noodles, snacks, bread, ice cream, pizza, chips, and chocolate, claim their palm oil comes from the Roundtable on Sustainable Palm Oil (RSPO). The RSPO is the biggest certification program for palm oil, and it has rules that are more detailed about how palm oil is produced compared to other groups (Amallia et al., 2025). According to the company's website (www.rspo.org), RSPO is a non-profit group that includes 7 key players in the palm oil industry. These players are palm oil traders, producers, makers of consumer products, retailers, banks and investors, and environmental and social non-governmental organizations (NGOs). They work together to create and follow global standards for sustainable palm oil. There are more than 5,000 members worldwide who have joined the RSPO standardization representing all links along the palm oil supply chain.

The RSPO international label is intended to guide consumers towards purchasing more sustainable palm oil products (Wassmann et al., 2023). However, Lieke et al. (2024) revealed that products that do not contain palm oil are perceived as healthier and more sustainable. This has led the RSPO to rethink how it manages its reputation and public trust (Comyns & D'Antone, 2025). RSPO certification is considered to help catch up in marketing products, but the process is difficult, especially for smallholder oil palm farmers (de Vos et al., 2023). The RSPO label has limited influence on consumer trust and purchasing decisions (Amallia et al., 2025; Hilmi et al., 2025).

Although there is a large body of literature documenting consumer behavior toward palm oil (Dassanayake & Nawarathna, 2025; Guadalupe et al., 2019; Lieke et al., 2023; Vanderwilde et al., 2023), only a few studies have also investigated consumer perspectives on the RSPO label. Green marketing in the palm oil plantation industry has been shown to have the most significant impact on improving marketing performance in the palm oil plantation industry. This study aims to analyze the factors that influence this behavior influence consumer behavior related to the RSPO label on food is based on the Cognitive, Affective, Behavior (CAB) Paradigm. Green Brand Loyalty and Image represent the cognitive dimension, while Green Brand Love represents the affective dimension. According to Robertson et al. (2022), the brand love-loyalty matrix shows interactions between constructs that can increase market share. Therefore, these three variables were selected as independent variables in this study.

Literature Review and Hypotheses

Cognitive- Affective-Behavior Model

The CAB hierarchy of effects includes three parts: cognition, affective, and behavioral. These parts can be arranged in different orders, depending on the type of decision a person makes when buying something (Liu et al., 2017). The Cognitive-Affective-Behavioral (C-A-B) model explains how people decide to buy things (Havlena & Holbrook, 1986). This model shows how the three parts are connected. It was created based on earlier studies. The theory explains that thoughts (cognition) affect feelings (affective), and those feelings then influence actions (behavior) and motivate people to take certain steps (Hussin & Abdul Wahid, 2023). Many studies in different areas have used the C-A-B model as a base (Loh et al., 2022). Lim and Kim (2020) used the C-A-B model to look at how emotional intelligence affects how people see value and their buying habits in online shopping. Dai and others (2020) studied people who use social media. However, not many studies have used the C-A-B model to look at how sustainability certification affects the buying of organic food specifically.

Brand image acts as an important cue for consumers to differentiate a brand from its competitors (Lin et al., 2017). Research conducted by Chen (2010) interprets green brand image as the perception that a brand has environmental concerns and commitments in the minds of consumers. A positive brand image has a greater impact on consumer purchasing patterns and will reduce the risk of health problems for consumers. A negative brand image will harm the company, reduce productivity, reduce consumer interest in the product, and will also seriously damage consumer purchasing expectations. (Hameed et al., 2021). Previous research shows that a brand image that is in mind consumers' perceptions of green products can significantly influence their behavior because a positive brand image can reduce consumers' perceived risk and simultaneously increase the likelihood of purchase (Chen et al., 2018; Hameed et al., 2021; Majeed et al., 2022). An environmentally friendly brand image impacts a company's reputation, and a positive brand image increases the likelihood of consumers adopting environmentally friendly products (Bigliardi et al., 2012). Developing a strong marketing strategy is the first step to achieving success in expanding a company's consumer base and maintaining existing consumers' commitment to its offerings (Majeed et al., 2022). Therefore, this study has the following hypothesis:

H1: *Green brand image has a positive effect on green purchase behavior of Food Products in Indonesia.*

Green brand image is a consumer's perception of a brand that is formed from the brand's commitment and activities in preserving the environment (Chen, 2010). Green brand image plays a role in shaping brand affection, which generates strong consumer emotions toward the brand, is likely to have a positive impact on ethical judgments even in highly unethical situations and will subsequently influence consumer purchasing behavior (Hegner et al., 2017). In fact, 75% of purchasing experiences are based on emotions, which is why companies develop strategies to increase brand affection in consumers' minds (Hameed & Anwar, 2018). Emotional attachment leads to positive attitudes and perceptions toward a particular product compared to people who do not have brand affection for a product (Salehzadeh et al., 2023). There is a positive relationship between brand affection and consumer purchasing behavior. The greater the brand affection, the more products will be purchased, and the less the brand affection, the less products will be purchased (Wu & Chen, 2020). Green brand love is a crucial element. Consumers who feel more intrinsically motivated to purchase environmentally friendly products tend to have higher levels of green brand love. Therefore, this study proposes the following hypothesis:

H2: *Green brand love has a positive effect on green purchase behavior of Food Products in Indonesia.*

Loyalty is an attitude in which different desires shape consumer loyalty to a product or service, because even if consumers do not make a purchase, they recommend the product to other consumers (Panda et al., 2020). This study adopts the definition of brand loyalty in green products according to Chen (2013) namely, the level of commitment to the brand is driven by a strong environmental attitude and continued commitment to the brand. Companies benefit from brand loyalty in various ways, including increased market share including gaining more consumers, support for brand extension, lower marketing expenditures, and brand defense against competitive threats (Watson et al., 2024). Brand loyalty is characterized by consumers having preferences and positive attitudes towards certain products (Huo et al., 2022). Consumers who are loyal to a business have a more positive perception of the business than consumers who are not loyal or consumers who switch brands, so they are hesitant to switch (Wu et al., 2021).

While consumers can have positive or negative attitudes toward labels, eco-labeling does not necessarily elicit a positive response (D'Souza et al., 2022). While there is widespread consensus on the importance of eco-labels such as the RSPO for environmentally friendly food products, understanding how consumers perceive brand loyalty and its influence on green purchasing behavior remains limited. Therefore, this study proposes the following hypothesis:

H3: *Green brand loyalty has a positive effect on green purchase behavior of Food Products in Indonesia.*

Research Method

This study focuses on the influence of RSPO certification and its labeling on food products on consumer purchasing behavior in Indonesia. Data collection used a survey method through an online questionnaire distributed to respondents, particularly those who are consumers of food products. Combined in environmentally conscious communities according to the criteria. Researchers also ensured respondent anonymity when filtering completed questionnaires. Of the 310 questionnaires distributed, 303 questionnaire packages from respondents met the criteria and were completed completely. This indicates a response rate of 97.7%. The sample was tested/analyzed using the Structural Equation Modeling (SEM) technique with a Partial Least Squares (PLS) analysis approach, which aims to statistically test the data obtained from 303 respondents based on (Chin, 1998).

Data were analyzed using SmartPLS 4.0 software, which was developed based on modeling and bootstrapping paths and recommended by (Hair et al., 2017). This research is an explanatory quantitative research that aims to test the relationship between several investigated variables with hypotheses formulated firmly and clearly based on several theories considered to support the research (Neuman, 2014). The study used purposive sampling with the criteria of knowing RSPO certification and labels and consumers having purchased RSPO-labeled food products for a maximum of 3 months. Data were processed using Bootstrapping and PLS algorithms because all variables are latent variables and must be measured with dimensional constructs. The PLS algorithm has been used to estimate the value of all latent variables using an iterative procedure. This study uses 4 green purchase behavior items from (Kim & Choi, 2005), green brand love 5 items from (Carroll & Ahuvia, 2006), and 5 green brand image items (Chen, 2010).

Results and Discussion

Validity and Reliability Testing

The study was conducted with 303 respondents who are consumers of green products. Statistical analysis using PLS-SEM will be carried out in three stages: inner model analysis, outer model analysis, and testing the overall structural model. First, the outer model analysis refers to Chin (1998) who stated that the construct correlation will meet convergent validity if the loading factor value is greater than 0.5. The results of the PLS algorithm show a loading factor value above 0.5, so the indicators used have met convergent validity. Then, the construct reliability testing is measured by Composite Reliability, Cronbach's alpha, and Average Variance Extracted (AVE). The construct will be reliable if the Composite Reliability value is above 0.7 and Cronbach's alpha is above 0.6, and the recommended AVE value is above 0.5 (Hair et al., 2017). The following is Figure 1 is the result of an algorithm and table 1 which shows the outer model value that has met the validity and reliability criteria:

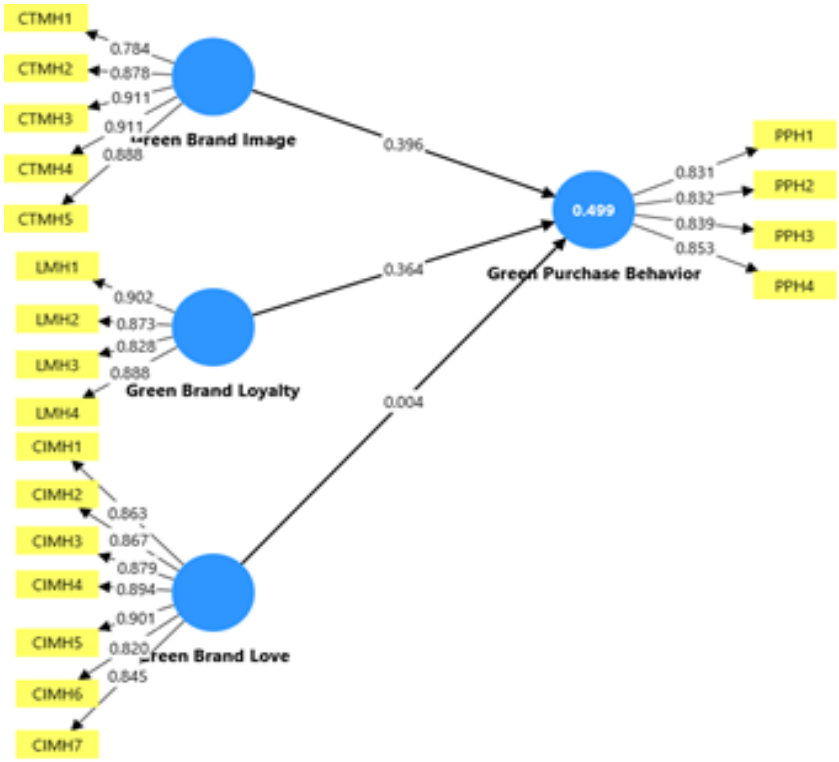

Figure 1. Algorithm results

Table 1. Construct reliability and validity

Variable	Cronbach's alpha	Composite reliability (rho_a)	AVE
Green Brand Image	0.923	0.925	0.767
Green Brand Love	0.945	0.949	0.752
Green Brand Loyalty	0.896	0.899	0.762
Green Purchase Behavior	0.860	0.864	0.704

Hypothesis Testing

Based on Figure 1 and Table 1 Value *Outer loading* on the table shows that each variable indicator has a value *outer loading*≥ 0.7. Based on table Reliability and Validity show that the AVE value obtained is > 0.5. Based on the results of the reliability test, the value table *Cronbach's alpha* And *Composite Reliability* Each variable has a value > 0.70. This indicates that the constructs in this study are valid and reliable.

Table 2. Value of Coefficient Determination (R^2)

Variable	R-square	R-square adjusted
Green Purchase Behavior	0.499	0.494

Evaluation of the second-order inner model construct can be seen from all indicators with the coefficient of determination (R^2) in Table 2. According to Chin (1998), the R^2 value is 0.67 (strong), 0.33 (moderate), and below 0.19 (weak). This research model has a strong relationship between the variables analyzed. The SCA model in this study is categorized as strong because the Adjusted R^2 value is 0.494. Next, the study analyzed the Inner Model by looking at the

bootstrapping results in Figure 2 and Table 3 Path Coefficients to see the results of the hypothesis analysis.

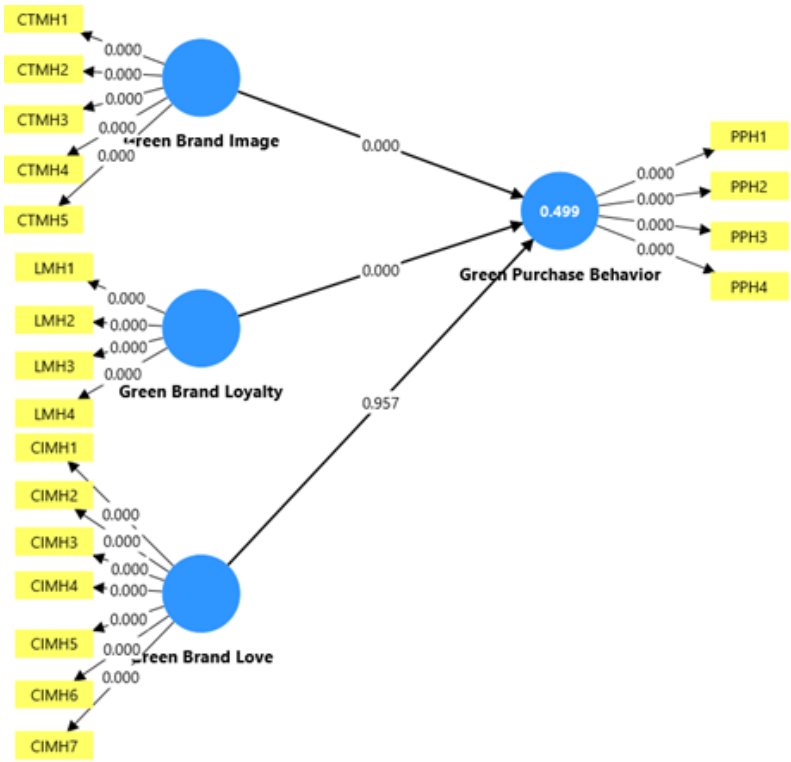

Figure 2. Bootstrapping Results

Table 3. Path Coefficients

Variable	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Green Brand Image → Green Purchase Behavior	0.396	0.399	0.076	5.245	0.000
Green Brand Love → Green Purchase Behavior	0.004	0.005	0.076	0.054	0.957
Green Brand Loyalty → Green Purchase Behavior	0.364	0.364	0.078	4.676	0.000

This hypothesis can be said to be accepted when *P Values* < 0.05 and t table >1.96. Based on Figure 2 and Table 3, it shows that **Hypotheses 1 and 3 are supported because** of the value *P Values* < 0.05 and t table >1.96. However, hypothesis **2 is rejected** because the hypothesis has *P Values* 0.957 > 0.05 and t table 0.054 < 1.96.

Discussion

The findings of this study illustrate that both defined constructs: green brand image and green brand loyalty, are positively related to green purchase behavior for RSPO-labeled food products. This previous study investigated the significant and positive impact of eco-labeling on consumer behavior toward the environment (Mata et al., 2021).

The green image of an RSPO label helps customers feel more confident when buying products. Sustainability certifications and RSPO labels help reduce confusion about product sustainability and show how being sustainable, having a sense of certainty, and feeling that their choices matter can affect how people feel about products, which in turn affects what they buy (Hinkes & Christoph-Schulz, 2020). This is supported by the fact that a green brand image

helps companies sell more environmentally friendly products by using eco-friendly packaging labels. Companies should avoid using too much packaging because it can harm the green image and the way consumers see the brand (Chen et al., 2017; Kerdpitak & McCham, 2019). This idea is supported by many studies that show how certifications and labels influence people's views on buying eco-friendly products, as taking an eco-friendly stand helps build a brand's identity. It has also been said that products that are not eco-friendly may not grow as much in sales (Martins et al., 2021).

One of the findings of this study is that green brand love does not impact environmentally friendly purchasing behavior. Consumers can develop feelings of love for any product but may need time to learn more because brands hold an important place in consumers' daily lives (Khandeparkar and Motiani 2018). This research is inconsistent with previous research (Hameed et al. 2021) which explained that consumers who have brand love will have positive attitudes and perceptions towards a product. This finding suggests that although consumers may have an emotional attachment to a brand, this does not necessarily motivate them to actively purchase environmentally friendly products. Bagozzi et al., (1999) stated that emotional attachment, such as brand affection, needs to be followed by cognitive evaluation and behavioral intention to produce actual behavior. The RSPO label indicates that the product uses sustainable palm oil. D'Souza et al., (2022) showed that eco-labels increase awareness and attitudes, but do not directly influence brand affection. They may trust the RSPO label, but this does not necessarily mean they like the brand.

The results in this study are in line with finding of Chen.et al. (2018) who stated that high or positive brand loyalty in the minds of consumers for a particular brand, then consumers will purchase that brand more frequently. Green brand loyalty reflects consumers' commitment to continue purchasing and supporting brands that consistently demonstrate concern for the environment (Hameed et al., 2021). In the case of the RSPO, buying products that use only certified sustainable palm oil is seen as the best way to reduce the bad effects of palm oil production (Sundaraja et al., 2020). However, right now, only 19 percent of the world's palm oil comes from RSPO certified sources. Even worse, only half of that certified palm oil is actually bought by the market, which means there is a big gap between what's available and what's needed. (Hinkes & Christoph-Schulz, 2020). Also, it is interesting to note that products with RSPO certified palm oil are not always clearly labeled. This might mean that companies making or selling consumer goods might be hiding palm oil in their products instead of showing that they use sustainable palm oil. This could be because people usually have a bad view of palm oil (Giam et al., 2016; Larsen et al., 2018; Ostfeld et al., 2019). This implies that even if consumers have high loyalty to green brands, their purchasing behavior will be strengthened by label transparency and clear communication regarding the sustainability of raw materials. Therefore, the RSPO label in Indonesia provides transparency and certification visibility on products, making it a significant driver of green purchasing behavior.

Conclusion

This study shows that green brand image and green brand loyalty for food products labeled with the Roundtable on Sustainable Palm Oil (RSPO) have a positive influence on green purchasing behavior. Sustainability certification and labels can reduce information asymmetry and positively influence green consumer beliefs. The RSPO label increases consumer trust and encourages them to purchase food products categorized as green. Consumers who are committed to environmentally friendly brands also increase their loyalty to green products and further strengthen green purchasing behavior. However, green brand love has no influence on green purchasing behavior. This may be because the green purchasing behavior of the

respondents in this study is not caused by emotional attachment to RSPO-labeled brands, but only based on image and loyalty to environmentally friendly products.

Future research is expected to further explore the factors influencing green purchasing behavior, for example, using a qualitative approach with in-depth interviews or focus group discussions to understand the reasons behind this phenomenon. Future researchers could analyze how producer and retailer communication strategies influence the visibility of the RSPO label and its impact on purchasing behavior. This is important because this study highlights that many producers do not display the RSPO label even though their products are certified. Finally, this study's respondents were limited to food consumers, so future research could expand the population and sample beyond RSPO-labeled food products, for example, to other products that use sustainable raw materials (e.g., cosmetics or cleaning products). Furthermore, other variables such as consumer knowledge about sustainability or perceived risks towards sustainable products could be added to provide a more comprehensive understanding.

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