



Regional analysis in consumer preferences for sustainable palm oil foods: A systematic review

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ABSTRACT

Background: Given the growing body of literature on consumer studies related to sustainable palm oil and its certification, there is a pressing need for a comprehensive study that synthesizes the results and identifies consumers based on regions. Sustainable palm oil can improve the industry's responsibility for ecological and social concerns. The Roundtable Sustainable Palm Oil (RSPO) certification offers premiums for palm oil producers and a reliable source of sustainable palm oil for global needs, particularly in the food market. However, uncertain demand for sustainable palm oil foods and lack of consumers' recognition of the certification could affect the market's long-term goal.

Scope and approach: A systematic review synthesizes findings from twenty-two primary studies to assess consumer preferences for foods containing sustainable palm oil. This study focuses on analyzing regional differences in shaping consumer behaviors.

Key findings and conclusions: Our analysis emphasizes significant regional differences in consumer preferences for sustainable palm oil foods. Consumers in Asia, such as Malaysia and Singapore, show greater acceptance of sustainable palm oil foods. In contrast, consumers in several European countries tend to avoid consuming palm oil. This study reveals the limited impact of the RSPO label in improving sustainable palm oil consumption in the food market. We encourage the food industry to leverage market education and targeted messaging to increase consumer awareness of sustainable palm oil foods. Additionally, simplifying and unifying sustainability labels, including RSPO, might be required to improve consumer confidence. Future research should explore policy interventions and regulatory changes in shaping sustainable food consumption while applying experimental research and broadening study coverage to various consumers across regions.

1. Introduction

Palm oil is an essential commodity in fulfilling global needs yet delivering issues due to its sustainability. According to a report, the world's palm oil consumption has increased by 31.34 % in the last eight years (Statista, 2024). One of the reasons for palm oil's popularity is its versatility, from alternative fuel to replace crude oil to everyday care, e. g., shampoo, soap, and pharmaceuticals (Hearty et al., 2020). Palm oil can also be easily found in food ingredients such as cooking oil, biscuits, cakes, bread, cereals, potato chips, ice creams, mayonnaise, margarine,

whipped cream, and chocolate (Borrelló et al., 2019).

Nevertheless, palm oil is often linked to the issue of a vast land-use change. In 2023, 79.74 million metric tons of palm oil has been produced (Statista, 2024). Tropical countries such as Indonesia, Malaysia, Thailand, Colombia, and Nigeria have expanded their oil palm cultivation land following promising global markets and export opportunities (Icyer & Kuran, 2024). Hence, conversions of the previously established commodities (i.e., rubber and palm) and forest areas were executed (Ogunbode et al., 2024). Between 2009 and 2019, a 20 % increase in the conversion of forests to oil palm plantations was identified (Zhao et al.,

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2024). Other than that, oil palm is also suitable to grow in a mineral-rich-marginal land called peatland. In 2019, 2.23 million hectares of global peatland were utilized for cultivating palm oil (Zhao et al., 2024).

Sustainability issues linked with palm oil have caught global attention, particularly from consumers in developed countries (Mason & Swanson, 2003). Producers are urged to shift towards environmentally friendly agriculture (Naidu & Moorthy, 2021) and to comply with the RSPO certification standard (Johnson, 2022). As a third-party certification body known by the international market (RSPO, 2019), RSPO helps control the industry's socio-ecological responsibilities while providing opportunities for producers to receive price premiums (Schmidt & De Rosa, 2020). In 2023, the European Parliament established the European Union Deforestation Regulation (EUDR) to ensure that the European Union (EU) citizens delay global deforestation (European Commission, 2023). The EUDR mandates that palm oil, soy, coffee, cocoa, and related products can only be sold within the EU if they are verified as deforestation-free, meaning they were not produced on land cleared after December 31, 2020 (European Commission, 2023). Although RSPO-certified palm oil is recognized as a supporting tool for compliance, RSPO certification alone is insufficient to meet EUDR requirements, as firms must ensure full traceability and adherence to the regulation's standards (RSPO, 2023).

Despite the RSPO's intent to establish a credible sustainability certification, its effectiveness in tackling sustainability-related issues has been questioned. One key issue is the insufficient premium received by smallholders, who collectively represent the largest group of oil palm producers. Additionally, the RSPO has faced criticism for its limited effectiveness in conserving biodiversity, particularly in protected forest areas such as those inhabited by orangutans, where certified operations have not consistently prevented habitat loss (Ruysschaert & Salles, 2014). Independent evaluations have highlighted inconsistencies in third-party verification processes, including the RSPO, and questioned the impartiality of certification audits (Carlson et al., 2018; Schouten & Glasbergen, 2011). Moreover, consumers have shown mixed reactions to RSPO-labeled products, often driven by concerns over greenwashing, the voluntary nature of the scheme, and its limited impact on halting ecological degradation (Gassler & Spiller, 2018; Lieke et al., 2024). European consumers—who generally report higher environmental awareness—have expressed skepticism about the RSPO's effectiveness, often preferring more familiar or government-backed eco-labels such as EU Organic or Bio-Suisse (Richartz & Abdulai, 2022; Wassmann et al., 2023). A lack of consumer awareness and confusion over the multitude of competing sustainability labels further diminishes RSPO's visibility and credibility (Sirieix et al., 2013; Tonkin et al., 2016).

The current palm oil market phenomenon emphasizes the United Nations' 12th Sustainable Development Goals concerning responsible production and consumption. Various consumer perspectives toward palm oil as a commodity has influenced future sustainably sourced palm oil market (Gesteiro et al., 2019). Scholars are interested in exploring how consumers respond to sustainable palm oil foods and labels (Dauda et al., 2021; Gassler & Spiller, 2018; Hinkes & Christoph-Schulz, 2020; Richartz & Abdulai, 2022). On the other hand, consumers' avoidance of palm oil comes from its association with environmental issues (Machová et al., 2022; Plasek et al., 2022). Moreover, palm oil products were perceived as unhealthy yet consumers with health concerns are more likely to have negative attitude towards palm oil (Borrello et al., 2019; Hartmann et al., 2018; Sodano et al., 2018; Vergura et al., 2019; Verneau et al., 2019). Although consumers' acceptance of foods with palm oil, sustainable palm oil, and without palm oil have been reviewed (Savarese et al., 2022), a study has yet to synthesize which parties from the global market have preferred foods containing sustainable palm oil over non-sustainable palm oil options and their perceptions of sustainable food labeling.

2. Methods

This study follows the PRISMA-P (Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols) framework in synthesizing findings from primary research on consumer attitudes toward sustainable palm oil foods. PRISMA-P provides a structured approach to ensure transparency, reproducibility, and methodological rigor in systematic reviews (Moher et al., 2015). It helps to minimize bias and enhances the reliability of findings by setting clear inclusion criteria, systematic search strategies, and study selection processes (Moher et al., 2015). Therefore, a systematic review has been conducted based on the following study selection criteria and screening.

2.1. Study selection and criteria

This study appoints Scopus and Web of Science as literature databases for selecting relevant papers. Due to the complexity of the literature on palm oil, foods, sensory, and consumer, we decided to start from broader keywords to ensure that we are not missing important papers. Therefore, keywords used were consumer and palm oil (or oil palm). TITLE-ABS-KEY (Scopus) and TS (Web of Science) were chosen as field codes or tags to gather articles based on the title, abstract, and keywords. Subsequently, this study uses the following Boolean queries.

1. Scopus: TITLE-ABS-KEY(consumer* AND ("palm oil" OR "oil palm"))
2. Web of Science: TS=(consumer* AND ("palm oil" OR "oil palm"))

The queries were performed in October 2023 with no time frame, allowing article inclusions from any period before the execution date. Selected papers were limited only to the original or primary research published in English. Moreover, this study excludes review articles, conference proceedings, and book chapters.

Based on the selection criteria, this study collected 361 articles from Scopus and 270 from the Web of Science and uploaded them to the Covidence platform (www.covidence.org) for duplication removal and article screening. After removing the duplications, the title and abstract screening was started, with a total of 410 eligible articles.

2.2. Study screening

This study encompassed articles investigating consumer behaviors, preferences, or perspectives on sustainable palm oil in food and related products and included articles discussing palm oil-free foods. This inclusive approach was taken to provide a comprehensive understanding of consumer views. The title and abstract screening stage removed 351 irrelevant articles, and the full-text screening proceeded with 59 articles.

During the full-text screening, this study only considered articles focusing on individual consumers' views of palm oil-related food products. It excluded non-individual consumers such as companies or countries and literature investigating sensory tests, taste preferences, and advanced health-related topics. Finally, this study proceeded with twenty-two suitable articles (Fig. 1).

2.3. Overview

The review identified two regions, Europe and Asia, and thirteen countries as the study area (Fig. 2). Italy was the most researched country with four articles. Germany and the United Kingdom have three studies each, while France, Hungary, Australia, Malaysia, and Singapore were studied twice. One article each investigating respondents from Belgium, Poland, Slovakia, Sweden, and Switzerland. In the last five years, 16 articles have been published on this topic. Bateman et al. (2010) published the earliest paper on the topic, marking the beginning of the research. Furthermore, the review uses only primary data-based articles. Sixteen research collected their data through surveys, five performed experimental studies, and one utilized both methods.

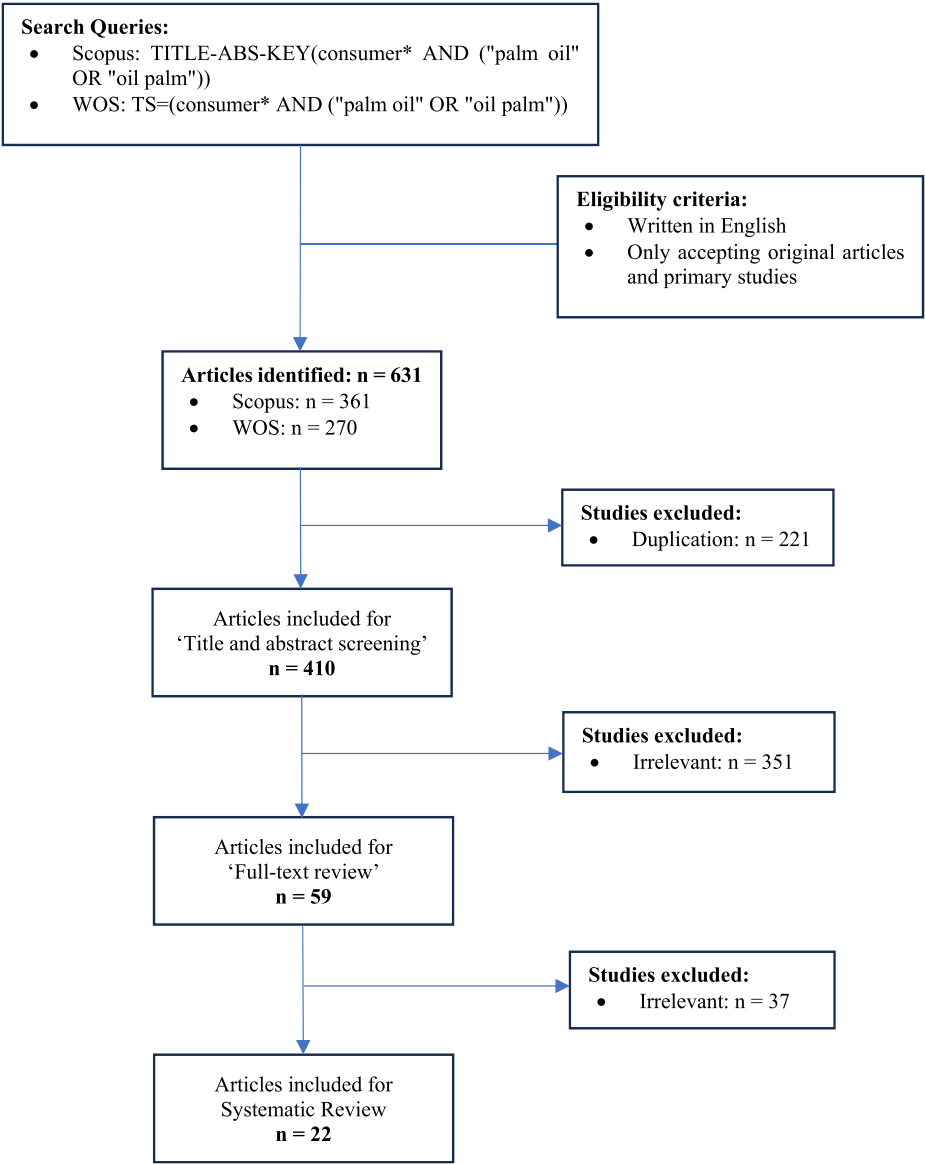


Fig. 1. Screening flowchart for the systematic review.

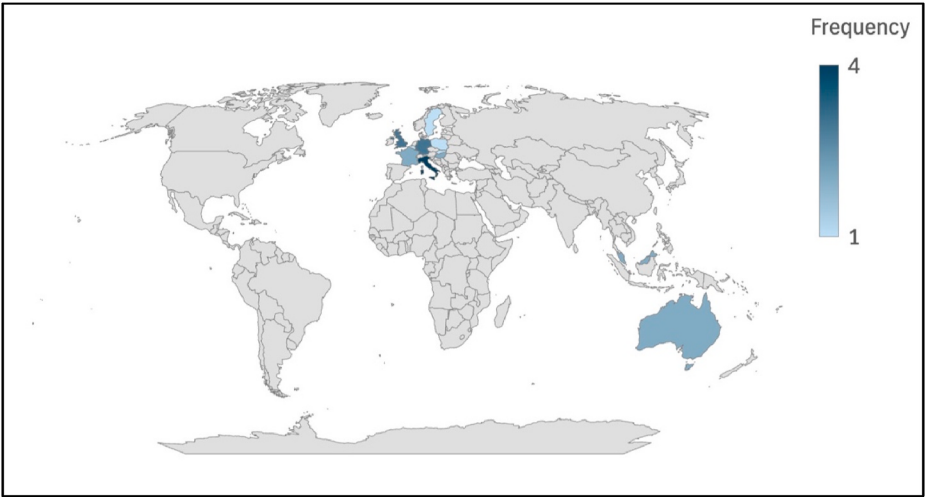


Fig. 2. Map of countries studied by literature on consumer preferences for palm oil shown in shades of blue colors. Source: Author's own interpretation.

3. Results

The review indicates that previous studies' respondents from Singapore and Malaysia preferred sustainable palm oil foods, while demand for eco-labeled palm oil foods has arisen among respondents from the United Kingdom. On the other hand, respondents from Italy, Germany, France, Slovakia, Sweden, and Poland prefer palm oil-free foods. Other studies regarding the market in Australia, Hungary, and Switzerland revealed determinants in preference for palm oil-related foods, such as personal beliefs about environmental and health concerns and consumer awareness of the RSPO label. Several studies have reported consumers' willingness to pay (WTP) for a premium price to indicate their product preferences, as shown in Table 1.

3.1. Consumer preferences for sustainable palm oil foods

Seven studies have examined consumers' preferences for eco-friendly palm oil, including certified sustainable palm oil. Study respondents in the United Kingdom, Germany, Malaysia, and Singapore preferred sustainable palm oil foods. An earlier study on this topic displayed demand for eco-labeled palm oil among respondents in the United Kingdom (Bateman et al., 2010). Noteworthy WTP supported consumers' preference for eco-labeled palm oil for the product after receiving knowledge of an exotic animal in the form of Sumatran tigers (Bateman et al., 2010). It is further concluded that information and knowledge influence WTP premium for eco-labeled palm oil (Bateman et al., 2010). Reardon et al. (2019) supported Bateman's findings as their respondents, who were British residents, provided significant WTP premium for sustainable palm oil. In their study, the WTP premium by British respondents is higher than Malaysian and Singaporean respondents, whose having a more positive view of palm oil and reside in oil palm-producing countries (Reardon et al., 2019).

Regarding consumer preferences for certified sustainable palm oil products in Germany, Gassler and Spiller (2018) found that their respondents prefer a trustier product displayed by a higher WTP for 100 % RSPO-certified sustainable palm oil foods over a product with a balanced proportion of RSPO-certified sustainable palm oil and conventional palm oil. Nevertheless, respondents are unaware of the RSPO label (Gassler & Spiller, 2018). Another study has observed consumers' intention to purchase sustainable palm oil products despite their limited buying behavior (Hinkes & Christoph-Schulz, 2020). Richartz and Abdulai (2022) highlighted higher consumers' trust in organic labels to indicate that a product contains certified sustainable palm oil among their study respondents.

Giam et al. (2016) found that their Singaporean respondents have a negative attitude toward products that cause deforestation, yet their attitude is not limited to palm oil. Their respondents preferred products that help mitigate deforestation, including palm oil (Giam et al., 2016). The results showed that respondents provide a higher WTP for deforestation-free palm oil products than the current premium price for certified sustainable palm oil products (Giam et al., 2016). Similarly, another study shows that consumers in Singapore have a neutral view of palm oil yet are unfamiliar with sustainable palm oil (Reardon et al., 2019). Some of their study respondents believe palm oil has caused environmental impacts, such as deforestation (Reardon et al., 2019). Nevertheless, Reardon et al. (2019) found that respondents have provided a positive WTP for sustainable palm oil foods, indicating their preference for the product.

Reardon et al. (2019) discovered that respondents in Malaysia are better at identifying palm oil's positive and negative impact than respondents in the United Kingdom and Singapore. Malaysian respondents still preferred sustainable palm oil despite their lack of awareness, indicating a positive WTP (Reardon et al., 2019). Another study supported consumers' preference for sustainable palm oil in Malaysia despite respondents' lack of awareness of certified palm oil products (Dauda et al., 2021). Their study respondents provided a 5 % premium

Table 1

Consumers' WTP of sustainable palm oil and palm oil-free foods.

Consumer preferences	Country of study	Type of foods	Collected WTP	Reference
Sustainable palm oil foods	United Kingdom	Lower quality vegetable margarine	GBP 1.03 after the lowest level of marketing treatment;	Bateman et al. (2010)
			GBP 1.10 after the medium level of marketing treatment;	
			GBP 1.17 after the highest level of marketing treatment.	
			GBP 1.29 after the lowest level of marketing treatment;	
			GBP 1.35 after the medium level of marketing treatment;	
			GBP 1.52 after the highest level of marketing treatment.	
	Singapore	Chocolate	9.9 % price premium	Giam et al. (2016)
		Cookies	9.2 % price premium	
		Margarine	8.2 % price premium	
		Cooking oil	6.33 % price premium for mass balance RSPO product;	
	Malaysia		5.77 % price premium for segregated RSPO product.	Dauda et al. (2021);
			EUR 0.70 and 1.18 price premium for 100g of mass balance and segregated RSPO products, respectively and compared to non-certified chocolate, by "restrained label lovers segment (56 % participants);	
			EUR 1.32 and 2.25 price premium for 100g of mass balance and segregated RSPO products, respectively and compared to non-certified chocolate, by "trusting chocolate buyers" segment (25 % participants);	Gassler and Spiller (2018)
			EUR 0.14 price premium for	

(continued on next page)

Table 1 (continued)

Consumer preferences	Country of study	Type of foods	Collected WTP	Reference
		Chocolate cookies and spread	100g of segregated RSPO product compared to non-certified chocolate, by “low price shoppers” segment (19 % participants). EUR 1.38 price premium for a product using organic label before information treatment, and EUR 3.27 price premium after information treatment; EUR 0.40 price premium for a product using RSPO label before information treatment, and EUR 1.49 price premium after information treatment.	Richartz and Abdulai (2022)
Palm oil-free foods	France	Milk rolls	EUR 1.00 and 1.14 price premiums for milk rolls without palm oil from two groups mixing the information treatments (environment, land use, and health) compared to EUR 0.61 and 0.75 price premium for the palm oil ones.	Disdier et al. (2013)
	Germany	Cookies	EUR 0.34 price premium for 200g of palm oil-free cookies compared to EUR 0.31, 0.11, and 0.03 price premium for EU organic, RSPO segregated, and RSPO mass balance, respectively, before information treatment; EUR 1.43 price premium for 200g of palm oil-free cookies compared to EUR 0.28, 0.74, and 0.37 price premium for EU organic, RSPO	Hinkes and Christoph-Schulz (2020)

Table 1 (continued)

Consumer preferences	Country of study	Type of foods	Collected WTP	Reference
	Slovakia	No information	segregated, and RSPO mass balance, respectively, after information treatment; EUR 1.0 price premium for palm oil-free product by 29.3 % participants; EUR 0.5 price premium for palm oil-free product by 24.3 % participants; EUR 1.5 price premium for palm oil-free product by 21.2 % participants; More than 2.0 price premium for palm oil-free product by 19.4 % participants.	Machová et al. (2022)
	Italy	Biscuit	EUR 1.79 price premium for palm oil-free claim biscuits compared to EUR 1.62 and 1.46 price premiums for sustainable palm oil claimed and no claim biscuits, respectively.	Vergura et al. (2019)

to consume palm oil without sacrificing biodiversity and climatic conditions, indicating environmental concerns as a determinant of consumers' intention to purchase the product ([Dauda et al., 2021](#)).

3.2. Consumer preferences for palm oil-free foods

Ten studies, mainly conducted in European countries, have been synthesized to determine consumer preferences for palm oil-free foods. French, German, Hungarian, Italian, Slovak, Swedish, and Polish respondents from various studies preferred palm oil-free foods over conventional palm oil or sustainable palm oil. Some studies have indicated consumer preferences by collecting WTP, such as a higher percentage of WTP for palm oil-free milk rolls compared to palm oil milk rolls among French respondents ([Disdier et al., 2013](#)). German respondents provided a higher WTP for palm oil-free cookies over sustainable palm oil cookies ([Hinkes & Christoph-Schulz, 2020](#)). Similarly, [Vergura et al. \(2019\)](#) demonstrated how a biscuit claiming palm oil-free received a higher WTP from Italian respondents than those with a sustainable palm oil claim and no claim.

Other studies exemplify determinants of consumer preferences for palm oil-free foods. A study in Slovakia found that its respondents, mainly young females with secondary education degrees, preferred palm oil-free products due to palm oil's impact on the ecology ([Machová et al., 2022](#)). In Italian studies, the older the individual, the more they prefer to avoid palm oil due to more substantial health concerns ([Sodano et al., 2018](#); [Verneau et al., 2019](#)). Studies in Hungary confirmed that respondents tend to avoid palm oil due to health and environmental consequences ([Plasek et al., 2021, 2022](#)). Consumers concerned about

their beliefs will likely seek more information on palm oil (Plasek et al., 2022; Verneau et al., 2019). Moreover, respondents are also influenced by the palm oil-free label. Hartmann et al. (2018) found that the label improves consumers' purchasing decisions, especially among French respondents. Likewise, studies found that the label improves palm oil-free food consumption in Italy (Borrello et al., 2019; Vergura et al., 2019).

4. Discussion

4.1. Regional analysis in consumer preferences for sustainable palm oil foods

This review revealed a demand for sustainable palm oil foods in Malaysia, Singapore, and the United Kingdom, indicated by considerable WTPs among the study's respondents (Table 1). These respondents are similar in their intention to avoid products that can cause environmental destruction, such as deforestation and biodiversity loss (Bateman et al., 2010; Reardon et al., 2019). They are aware of palm oil in foods despite their lack of familiarity with certified sustainable palm oil (Reardon et al., 2019). When comparing among nationalities, British respondents have a limited relationship with palm oil compared to Malaysian and Singaporean respondents. Malaysia is the second-largest palm oil-producing country (USDA, 2023), sharing some of its cultures and culinary traditions with Singapore. Nevertheless, Malaysia's Gross Domestic Product (GDP) per capita is lower than Singapore's and the United Kingdom's (World Bank, 2023). It might affect their ability to pay for sustainable palm oil foods compared to consumers in Singapore and the United Kingdom (Reardon et al., 2019).

Furthermore, a potential demand for sustainable palm oil foods has come from Germany. Some German consumers are interested in sustainable palm oil foods, particularly after expanding their knowledge by receiving substantial information about the product (Hinkes & Christoph-Schulz, 2020). Results from a German study have indicated that respondents prefer a more trustworthy product, such as 100 % RSPO-certified palm oil foods, rather than choosing foods with a balanced proportion using conventional palm oil (Gassler & Spiller, 2018). Moreover, they are like British consumers regarding cultural and culinary affections with palm oil. Regarding purchasing power, GDP per capita in Germany is more likely the same as in the United Kingdom (World Bank, 2023); hence, they could pay a premium price for sustainable palm oil foods.

Meanwhile, this review found that health and environmental concerns have influenced some consumers in European countries to avoid palm oil-based foods. Higher WTPs were collected from Slovak respondents after gaining knowledge about the ecological impact of palm oil (Machová et al., 2022). In Belgium, improving participants' knowledge is aimed at reducing palm oil consumption (Lange & Coremans, 2020). Some consumers in France believe that the ecological impact of palm oil is more significant than its superiority in land-use efficiency compared to other vegetable oils (Disdier et al., 2013). Studies among Hungarian, French, Italian, Swedish, and Polish respondents confirmed a healthier perception of palm oil-free foods over palm oil-based foods, especially those among older individuals (Sodano et al., 2018). Furthermore, a study in Switzerland identified that consumers' acceptance of palm oil as a food source varies (Wassmann et al., 2023). Savory foods, such as margarine, are somewhat acceptable to be made from palm oil compared to sweet foods, such as cookies or chocolate spread (Wassmann et al., 2023). Despite their efforts to avoid palm oil, a high palm oil consumption rate through margarine consumption was reported European countries, particularly in France, Germany, and Poland (The Atlas, 2024).

Despite a limited number of studies, a key finding of this review is the substantial variation in barriers for consumers across different regions to adopt sustainable palm oil. In Asia, barriers including limited consumer awareness, weak institutional support for eco-labels, and low

prioritization of sustainability in purchasing decisions (Narayanan et al., 2024; Purnomo et al., 2024; Sundaraja et al., 2021; Tai et al., 2022). In contrast, European consumers tend to be more environmentally conscious. Still, they are deeply skeptical of certification programs like RSPO due to perceived lack of enforcement, conflicts of interest in auditing, and associations with greenwashing (Lieke et al., 2024; Schouten & Glasbergen, 2011; Vergura et al., 2019). In Germany, trust in alternative labels like organic or Fairtrade often surpasses that in RSPO (Richartz & Abdulai, 2022). Although the price may affect general consumers, those having an income in emerging countries are more likely to be influenced by the price because the percentage of disposable income spent on green products is higher in developing and emerging countries, making eco-friendly products more of a premium product compared with advanced economies (Dauda et al., 2021; Reardon et al., 2019; Wijekoon & Sabri, 2021). These contextual nuances underscore the need for regionally tailored interventions. For example, targeted awareness campaigns and label education may be most effective in Southeast Asia, whereas restoring credibility, transparency, and third-party oversight in certification schemes is more pressing in European markets.

4.2. The influence of RSPO label in consumer preference for sustainable palm oil foods

The review indicated that the RSPO label lacks awareness among global consumers. Studies from European and Asian regions have confirmed that their respondents have limited knowledge about the label. According to Tonkin et al. (2016), low appraisal of labeling among customers might indicate low consumer trust. Trust mediates attitudes and behavioral intentions (Mazzù et al., 2023). The fact that the third party provides certification can influence consumers' trust. As a result, the trust will affect purchasing decisions (Gorton et al., 2021). RSPO is a third-party organization aiming to limit the impact of oil palm production activity and supply chain, one of which is by the RSPO certification scheme (RSPO, 2019). However, the label has yet to improve consumers' purchase intention of sustainable palm oil foods, confirmed by higher WTPs for organic-labeled sustainable palm oil foods than RSPO-labeled foods (Richartz & Abdulai, 2022). In the European region, the RSPO label seems inferior to other sustainable labels, such as EU organic or Bio-Suisse (Gassler & Spiller, 2018; Hinkes & Christoph-Schulz, 2020; Richartz & Abdulai, 2022; Wassmann et al., 2023). Despite growing concern about sustainability, consumer trust in eco-labels, including RSPO, remains limited and inconsistent (Lieke et al., 2024).

Nevertheless, consumers' ignorance of the RSPO label might be influenced by their lack of awareness toward certified sustainable palm oil in the market. Reardon et al. (2019) found that consumers in Malaysia's second-largest palm oil-producing country are as unfamiliar as consumers in the importing countries, such as the United Kingdom and Singapore. In this case, consumers must be made aware of the certified sustainable palm oil and the RSPO label through multiple efforts. A reliable and accessible information on palm oil and certification needs to be provided (Hinkes & Christoph-Schulz, 2019). A study showed that educational intervention alone is limited to consumers' purchase intention of sustainable palm oil foods, yet their actual behavior is still uncertain (Sundaraja et al., 2023). A similar result was collected after providing respondents with additional information (Hinkes & Christoph-Schulz, 2020). Therefore, certification organizations, such as RSPO, must collaborate with policymakers to enhance third-party auditing and enforcement of sustainability standards. Moreover, making it mandatory for producers to declare palm oil as an ingredient and specify its certification status with respect to sustainability can help consumers make informed choices (Sundaraja et al., 2023).

4.3. Study gaps and future research

This study analyzes consumer preferences for sustainable palm oil foods based on findings from previous empirical studies across regions. However, studies have only investigated consumer preferences for palm oil-related products in thirteen countries from two regions, Asia—especially Southeast Asia—and Europe. This review's study selection has yet to find empirical studies examining consumer preferences in India and China's first and second-largest palm oil importers (USDA, 2023). Furthermore, studies encompassing consumer preferences for sustainable palm oil in large palm oil producers were limited to Malaysian respondents (Dauda et al., 2021; Reardon et al., 2019). Geographical location is one of the significant factors in understanding consumers' views on products containing palm oil (Reardon et al., 2019). Therefore, future research should be expanded across countries and regions to add meaningful contributions to the literature gaps on sustainable palm oil's global market.

Furthermore, consumers' awareness and trust in sustainability labels may have correlations with policy and its effectiveness (Sirieix et al., 2013). Nevertheless, policy interventions are rarely used to investigate consumers' views on palm oil-related products. In the European Union, policies such as the EUDR restrict imports of non-certified palm oil (European Commission, 2023). However, there is an uncertain condition whether consumer preference leans toward palm oil-free alternatives rather than sustainably sourced options. Moreover, misaligned national policies and lack of enforcement may result in biased assumptions (Hartmann et al., 2018). Hence, studying consumer responses to policy interventions and regulatory changes and their effect on sustainable palm oil consumption can be important to the literature.

Additionally, the literature needs more evidence on the actual demand for sustainable palm oil foods, mainly through consumers' WTP. For example, Disdier et al. (2013) utilized an experimental study when eliciting actual WTP for palm oil and non-palm oil milk rolls. Experimental research, such as the choice-based experiment, has been used to test different labeling strategies to determine the most effective approaches for driving sustainable consumer choices (Gassler & Spiller, 2018; Hinkes & Christoph-Schulz, 2020; Richartz & Abdulai, 2022). Information about the health effects of consuming palm oil has spread across media; however, studies might see it as somewhat unproven (Fabbrizzi et al., 2019; Hartmann et al., 2018; Sodano et al., 2018; Vergura et al., 2019; Verneau et al., 2019). Therefore, experimental approaches should also investigate the impact of media on consumer attitudes toward sustainable palm oil by testing the information used by media.

5. Conclusions

This review shows consumers' demand for sustainable palm oil foods in Malaysia, Singapore, and the United Kingdom. In contrast, consumers in Italy, Germany, France, Slovakia, Sweden, and Poland preferred palm oil-free foods. Individuals concerning environmental issues with a relatively positive attitude towards palm oil will likely prefer sustainable palm oil foods. Meanwhile, health-concerned individuals tend to avoid consuming palm oil. Nevertheless, price influences consumer preferences for sustainable palm oil and palm oil-free foods. Additionally, this review identifies that most consumers are still unaware of sustainable palm oil products and the RSPO label despite their preferences.

This review highlights the pivotal role of policy interventions, sustainability labeling, and consumer education in shaping demand for sustainable palm oil foods. While voluntary certification schemes such as RSPO offer a pathway toward sustainability, their effectiveness remains limited without regulatory enforcement and consumer awareness initiatives. Stricter regulations should be enforced to promote sustainable food consumption by improving sustainable food sources, including sustainable palm oil. The food industry should leverage market education and targeted messaging to increase consumer trust and willingness

to pay for sustainable palm oil products. Additionally, RSPO may reconsider its labeling and marketing strategies to increase consumer awareness.

Author contribution

The first author named is lead and corresponding author. We describe each author's contributions to the paper as follows: Conceptualization: YH, ZL, BP, and ÁT; Investigation: All authors; Methodology: YH, BP, and ÁT; Supervision: BP and ÁT; Writing – Original Draft: YH; Writing – Review & Editing: AD, AH, BP and ÁT. All authors have read and approved the final manuscript.

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Competing interests

All authors declare that they have no competing interests.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tifs.2025.105102>.

Data availability

No data was used for the research described in the article.

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