

Navigating the Digital Revolution in the Food Industry: Consumers' Perceived Environmental Risks and Purchasing Decisions

Arry Widodo¹, Nurafni Rubiyanti², Putu Nina Madiawati³

Abstract

Online food delivery has transformed the food industry. A new food sector business model has emerged from this revolution of food delivery and consumption. Purchases alter how individuals think online takeaway packaging affects the environment, according to one study. The study focuses on education's effect on this relationship. Takeout packaging affects brand image, green satisfaction, green trust, and desire to buy eco-friendly food packaging, according to the study. An online survey of Indonesian customers was used to collect data, and the partial least squares structural equation modeling (PLS-SEM) approach was used to analyze it. The results support the model's claim that green brand image improves repurchase decisions. Consumer pleasure and environmental trust can mediate this effect. All study constructs are reliable and valid. The environmental impact of takeout packaging needs more attention. The national government wants better food packaging rules. The government should ban takeout packaging. Recycling procedures and trash categorization must be developed to streamline recycling. By customizing green marketing to customer understanding, transparency, and education on eco-friendly food packaging boost brand reputation, satisfaction, trust, and risk perception.

Keywords: *Green Brand, Green Satisfaction, Green Trust, Repurchase Decision.*

Introduction

The advent of the digital revolution has profoundly transformed the food sector, particularly with the emergence of online meal delivery services (Et al., 2021). This transition has profoundly altered the manner in which consumers obtain and consume food, establishing a new model in the culinary business.

The online food delivery services in Indonesia have experienced a tremendous surge in growth, with an 183% rise in transactions in 2020 compared to the previous year. This indicates a widespread acceptance and use of these services by consumers (Chandra & Cassandra, 2019; et al., 2021). The convenience and accessibility provided by these platforms have led to a significant surge in demand, resulting in a transformation of consumption patterns among Indonesian consumers (Et al., 2021; Putri et al., 2022). According to Putri et al. (2022), the online meal delivery service market in Indonesia is primarily controlled by two main competitors, Gofood and Grabfood, with Gofood holding a 53% market share and Grabfood holding a 47% market share. Shopee Food, a prominent e-commerce platform in Indonesia and Southeast Asia, has entered the business, bringing about significant changes that could either challenge existing companies or provide doors for new competitors to enter the market (Putri et al., 2022).

The use of online meal delivery services in Indonesia is driven by several factors, including the convenience of not having to leave the house, promotional offers from applications, adverse weather conditions, time efficiency, and the considerable distance of food outlets (Et al., 2021). Moreover, the growing prevalence of smartphones, with a staggering 75% of online consumers in Indonesia utilizing them, has significantly bolstered the general use of online meal delivery services.

The proliferation of online food delivery services has provided consumers with convenience and ease of access. However, it has also sparked worries about the ecological consequences of food packing (Harahap et al., 2020). The packaging used for delivery orders resembles that of takeout orders, which might result in

¹ Departement School of Economics and Business, Master of Business Administration, Telkom University, Bandung, Indonesia, Email: arrywie@telkomuniversity.ac.id, (Corresponding Author), <https://orcid.org/0000-0002-6758-4915>

² Departement School of Economics and Business, Master of Business Administration, Telkom University, Bandung, Indonesia, Email: nrubiyanti@telkomuniversity.ac.id, <https://orcid.org/0000-0002-8268-0227>

³ Departement School of Economics and Business, Master of Business Administration, Telkom University, Bandung, Indonesia, Email: pninamad@telkomuniversity.ac.id, <https://orcid.org/0000-0003-0953-954X>

issues like fluctuations in food temperature during transportation, subpar food presentation, and alterations in food flavor (Harahap et al., 2020). In order to tackle these concerns, scholars have suggested the adoption of eco-friendly packaging for food delivery, which is created using Quality Function Deployment for the Environment and the TRIZ methodology. This approach aims to reduce the ecological footprint of delivery systems (Harahap et al., 2020). Another issue that has arisen is the growing dependence on disposable packaging, which has led to a concerning rise in plastic waste. Between 2019 and 2020, the food and beverage sector in Indonesia generated 1.29 million metric tons of plastic trash, causing significant environmental pollution. This pollution includes the contamination of soil and marine areas with microplastics (Rzayeva et al., 2023; Ncube et al., 2020). Further investigation is required to examine the effects of these digital advancements on individuals' health and overall welfare as the sector progresses (Feroz et al., 2021).

Digital transformation has wide-ranging effects that extend beyond changes in consumer behavior and organizational structure, encompassing broader social and environmental consequences. Technological advancements possess the capacity to enhance environmental sustainability and the whole of the food chain (Feroz et al., 2021). Nevertheless, the task of safeguarding the environment from pollution and the depletion of resources continues to be a substantial concern that demands increased focus and consideration (Feroz et al., 2021). The COVID-19 pandemic has emphasized the significance of sustainable food supply chains, particularly in the post-pandemic era. Digitalization and government policies that encourage sustainability have played a crucial role in minimizing the adverse impacts of the crisis (Kumar et al., 2022). Businesses may utilize the benefits of digitalization to tackle upcoming obstacles, while governments can develop plans to assist companies in implementing sustainable practices (Kumar et al., 2022). Digital transformation has wide-ranging effects that extend beyond changes in consumer behavior and organizational structure, encompassing broader social and environmental consequences. Technological advancements possess the capacity to enhance environmental sustainability and the whole of the food chain (Feroz et al., 2021). Nevertheless, the task of safeguarding the environment from pollution and the depletion of resources continues to be a substantial concern that demands increased focus and consideration (Feroz et al., 2021). The COVID-19 pandemic has emphasized the significance of sustainable food supply chains, particularly in the post-pandemic era. Digitalization and government policies that encourage sustainability have played a crucial role in minimizing the adverse impacts of the crisis (Kumar et al., 2022). Businesses may utilize the benefits of digitalization to tackle upcoming obstacles, while governments can develop plans to assist companies in implementing sustainable practices (Kumar et al., 2022).

The proliferation of online food delivery platforms has exerted a substantial influence on customer behavior, particularly in relation to takeaway packaging. Recent research has brought attention to the environmental concerns linked to the excessive utilization of disposable packaging in business (Kim et al., 2022). Gaining insight into customer perceptions regarding the environmental dangers associated with online takeout packaging and the factors that influence their decision-making is crucial for the development of sustainable packaging solutions.

The study seeks to examine the correlation between consumers' perceptions of environmental dangers associated with online takeout packaging and their shopping choices. The study specifically focuses on how the level of education moderates this association. This study specifically examines the relationship between consumers' perceptions of the environmental impact of takeout packaging, their brand image, green satisfaction, green trust, and their willingness to purchase eco-friendly food packaging. The study draws on research conducted by Birgelen et al. (2008), Nordin & Selke (2010), Oloyede & Lignou (2021), and Martinho et al. (2015).

The growing consciousness among customers regarding the environmental and health consequences of food packaging materials has prompted a change in purchase patterns (Ketelsen et al., 2020). Consumers are more cognizant of the ecological consequences of the packaging employed in the transportation of their online food purchases. This, in turn, has an impact on their contentment and confidence in the brand, ultimately shaping their buying choices. Prior studies have emphasized the significance of a green brand image, which reflects how consumers perceive a company's dedication to sustainable business operations,

in influencing consumer buying behavior (Popović et al., 2019). Consumers who perceive a company as being environmentally responsible are more inclined to have faith in the brand's assertions and make purchasing choices that are consistent with their environmental principles (Bao, 2020).

Consumer satisfaction plays a crucial role in influencing green purchasing decisions for eco-friendly products and services (Popović et al., 2019). When consumers are content with a product's ecological performance, they are more inclined to have faith in the brand's environmentally friendly assertions, hence enhancing their desire to buy the product (Moser, 2015; Martinho et al., 2015). The study conducted by Martinho et al. (2015) found that education levels play a crucial role in influencing the connection between consumer perception and purchasing behavior. According to Joshi & Rahman (2015), individuals with higher levels of education are more knowledgeable about environmental matters and make more sensible choices when buying products. As a result, they are more inclined to take into account the environmental consequences of packaging while ordering food online. The study examined the correlation between the perception of a brand as environmentally friendly, the degree of satisfaction with environmentally friendly products, the level of trust in environmentally friendly brands, and the choice to purchase environmentally friendly products in the context of online meal delivery. The study also considered the level of education as a factor that may influence these relationships. The results of this study will enhance our comprehension of the elements that influence environmentally conscious customer behavior. Additionally, it will offer valuable insights for businesses to create successful strategies in response to consumer worries about the environmental consequences of their packaging.

Although there is an increasing amount of research on sustainable consumer behavior, there is a shortage of comprehensive studies that investigate the precise influence of perceived hazards related to packing in online food delivery. The current study mostly examines broad consumer perspectives on sustainability, with less investigation into the intricate relationship between perceived risk, brand satisfaction, trust, and purchasing choices, specifically in the realm of online food delivery. Furthermore, the impact of the moderation of educational levels on this correlation remains inadequately investigated (Amin & Tarun, 2020; Martinho et al., 2015). Lin et al. (2017) and Chen & Chang (2013) conducted a study to examine the association between green brand image, green satisfaction, green trust, and green purchasing decisions, taking into account the moderating effect of education level. The significance of green brand imagery in molding consumer perceptions and impacting their purchasing decisions has been recognized (Lin et al., 2017). Consumers who perceive a brand as being environmentally responsible are more inclined to form a favorable attitude and trust towards the brand, ultimately resulting in heightened satisfaction and the intention to make a purchase (Amin & Tarun, 2020).

Green satisfaction refers to the degree of consumer satisfaction with the environmental performance of a product or service (Amin & Tarun, 2020). An elevated level of satisfaction with a brand's environmental efforts might enhance trust in the brand's promises and commitments, hence impacting consumer choices (Chen & Chang, 2013). Green trust refers to the degree of consumer confidence in the environmental assertions made by companies (Amin & Tarun, 2020). Consumers who have confidence in a brand's environmentally friendly efforts are more inclined to make purchasing choices that are in line with their ecological principles and convictions (Chen & Chang, 2013). In order to gain a deeper understanding of this connection, this study will investigate the moderating effect of education level. Prior studies have demonstrated a positive correlation between greater levels of education and heightened environmental consciousness, as well as the adoption of more sustainable consumer behaviors (Kassim et al., 2023).

This study examines the correlation between green brand image, green satisfaction, green trust, and green purchasing decisions, taking into account the impact of education levels. It is based on established theories in green marketing and consumer behavior (Amin & Tarun, 2020; Lin et al., 2017; Chen & Chang, 2013; Moser, 2015). Prior studies have demonstrated that the perception and intention to purchase of consumers are influenced by the green brand image. Consumers who perceive brands as environmentally responsible are more inclined to develop positive attitudes and trust towards the brand. This, in turn, can result in higher levels of satisfaction and the intention to make a purchase. Furthermore, green satisfaction measures the degree to which consumers are content with the environmental impact of a product or service. A strong level of green satisfaction can enhance trust in a brand's environmental assertions and commitments,

thereby influencing consumer choices when making purchases. Moreover, green trust signifies the extent to which consumers have confidence in a company's assertions about its environmental practices. When consumers have faith in a brand's environmentally friendly endeavors, they are inclined to make purchase choices that are consistent with their ecological principles and convictions. The study will also investigate the moderating effect of education level, given that prior research has demonstrated a positive correlation between greater levels of education and heightened environmental consciousness, as well as more sustainable consumption habits.

Prior studies have demonstrated that the level of education can influence the connection between the image of environmentally friendly brands, satisfaction with these brands, belief in their environmental claims, and the decision to purchase environmentally friendly products. Individuals with higher levels of education exhibit heightened environmental consciousness and adopt more sustainable purchasing habits, indicating a positive correlation between these fundamental constructs and higher educational achievement. The existing research has examined the correlation between the image of environmentally friendly brands, satisfaction with environmentally friendly products, faith in environmentally friendly practices, and decisions to repurchase environmentally friendly products (Chen & Chang, 2013; Lin et al., 2017). Nevertheless, the extent to which perceived danger influences this particular situation has not been sufficiently investigated (Lin et al., 2017). In order to fill this void in research, the present study seeks to investigate the following research inquiries:

- What is the impact of the perceived environmentally-friendly reputation of online food delivery packaging on consumer satisfaction with environmentally-friendly brands?
- What is the correlation between the level of trust in environmentally friendly practices and the likelihood of making repeat purchases in the setting of online food delivery?
- How does the amount of education influence the impact of green brand image on consumer happiness, trust, and repurchase decisions?
- What is the influence of a green brand image on consumer trust and satisfaction?

Prior research has recognized the significance of green brand images in molding consumer views and impacting their buying choices (Chen & Chang, 2013; Lin et al., 2017). Consumers who perceive brands as being environmentally responsible are more inclined to form favorable attitudes and trust towards the brand, resulting in heightened satisfaction and likelihood of making a purchase (Chen & Chang, 2013; Lin et al., 2017). Green satisfaction refers to the level of satisfaction that consumers experience with the environmental performance of a product or service (Chen & Chang, 2013; Lin et al., 2017). An elevated level of green satisfaction can cultivate increased trust in the brand's assertions and environmental obligations, hence impacting consumer choices (Chen & Chang, 2013; Lin et al., 2017). Green trust refers to the level of trust that consumers have in the environmental promises made by companies (Chen & Chang, 2013; Lin et al., 2017). Consumers who have confidence in a brand's environmentally friendly efforts are more inclined to make eco-conscious purchasing choices (Chen & Chang, 2013; Lin et al., 2017).

Literature Review

The rise in demand for environmentally sustainable items, commonly known as "green" products, is a result of mounting concerns regarding environmental sustainability. Businesses have adopted green marketing techniques in response to the change in customer behavior, aiming to attract environmentally concerned consumers (Shrestha, 2018; Delafrooz et al., 2014). Prior studies have examined the connection between the factors, revealing a favorable correlation between green brand image, green satisfaction, green trust, and green brand equity (Chen, 2009; Lin et al., 2017; Hameed et al., 2021). Furthermore, research has demonstrated that the connection between a green brand's image and its value is somewhat influenced by the level of satisfaction and trust in its environmental practices (Chen, 2009; Lin et al., 2017; Ha, 2020; Rahman & Nguyen-Viet, 2022). Nevertheless, the research emphasizes the necessity of having a deeper

comprehension of the wider aspects of environmental views (Guerreiro & Pacheco, 2021). Furthermore, the impact of moderating consumer factors, such as education level, on these connections has not been thoroughly investigated (Zhuang et al., 2021; Alamsyah et al., 2021).

Green Brand Image and Repurchase Decision

The notion of green brand image, which pertains to how consumers perceive a business's dedication to ecologically sustainable activities, has garnered significant interest in the field of sustainable marketing (Chen, 2010; Siyal et al., 202). The study conducted by Lin et al. (2017) discovered that a positive and significant impact exists between the brand's green image and both green trust and green purchases. Research has highlighted the need to establish a robust environmentally-friendly brand image in order to enhance consumer confidence and encourage eco-conscious buying habits (Lin et al., 2017; Bashir et al., 2020). Furthermore, research conducted by Lin et al. (2017) has demonstrated that a green brand image has a significant impact on both consumer trust and satisfaction in the hospitality business. Ha (2021) found that a green brand image has a notable and favorable influence on both green trust and green purchasing. This emphasizes the significance of cultivating a robust, environmentally conscious brand identity in order to enhance consumer confidence and promote the adoption of eco-friendly buying habits. In addition, the researchers have conducted further investigation into the correlation between the image of environmentally friendly brands and other important factors (Bashir et al., 2020; Chen et al., 2020), such as the advantages of green brands and customer loyalty.

Observational data indicates that the perception of a brand as environmentally friendly is a significant factor in determining customer loyalty, in addition to the already established factors of trust and satisfaction with the brand's environmental practices (Lin et al., 2017; Ha, 2020). Research has also investigated the impact of perceived green risk moderation on the formation of a green brand image (Lin et al., 2017). This is particularly pertinent considering the concerns that have emerged in the field of green branding regarding greenwashing. In summary, the literature emphasizes the strategic significance of establishing a robust green brand image in order to cultivate trust, contentment, and ultimately, consumer loyalty towards environmentally friendly products and services (Priya et al., 2017; Lin et al., 2020). The literature emphasizes the significant impact of a green brand image on influencing consumer attitudes and actions towards environmentally friendly products and services (Yadav et al., 2016).

To cultivate a successful green branding strategy and devise a green marketing plan that appeals to environmentally aware consumers, steadfast dedication is necessary, as stated by Bashir et al. (2020) and Lestari et al. (2021). Organizations can strengthen their green brand image and cultivate greater consumer trust and loyalty towards their products and eco-friendly services by highlighting their environmental commitment and sustainable practices (Sadiku et al., 2018; Hussain & Waheed, 2016; Shabbir et al., 2020).

Green Satisfaction and Repurchase Decision

The concept of green satisfaction has been significant in comprehending consumer behavior towards eco-friendly products and services (Joshi & Rahman, 2015; Rahman & Nguyen-Viet, 2022). This term pertains to the degree to which green products fulfill consumers' environmental demands, wants, and expectations. Furthermore, Sharma & Foropon (2019) show a direct correlation between pleasure with environmentally friendly practices and the level of trust in those practices, which subsequently influences the decision to make environmentally conscious purchases. When consumers are content with a product's ecological performance, they are more inclined to have faith in the brand's dedication to sustainability (Cheung et al., 2015; Lin et al., 2017). Consumer trust in a business's commitment to sustainability encourages them to make purchases since they have confidence that the brand will uphold its environmental pledges (Guerreiro & Pacheco, 2021).

Moreover, the level of satisfaction with green initiatives is a significant indicator of the level of trust in those initiatives (Alamsyah et al., 2021; Guerreiro & Pacheco, 2021). Consumers who express satisfaction with a product's environmental characteristics are more assured that the firm is genuinely committed to implementing eco-friendly measures (Cheung et al., 2015; Lin et al., 2017), rather than merely indulging

in deceptive environmental claims (Chrisjatmiko, 2018). Consumer satisfaction has a crucial role in establishing enduring ties between consumers and environmentally friendly firms (Cheung et al., 2015; Guerreiro & Pacheco, 2021).

Marketers must prioritize and guarantee consumer pleasure with environmentally friendly products in order to cultivate trust in sustainability and promote eco-conscious purchases (Zhang & Dong, 2020). Brands can gain a competitive edge and secure loyal consumers by surpassing consumer expectations regarding the environment (Guerreiro & Pacheco, 2021). This can be achieved by being ecologically responsible, as highlighted by Cheung et al. (2015) and Lin et al. (2017). Furthermore, Konuk et al. (2015) demonstrated that green trust plays a crucial role in connecting perceived green value, quality, and purchase intent. Consumers are more inclined to trust a brand and have a greater desire to purchase a product when they see it as having high value and quality, particularly if it is eco-friendly (Amin & Tarun, 2020; Guerreiro & Pacheco, 2021). Furthermore, green satisfaction pertains to the degree of contentment and fulfillment felt by consumers when a brand or product successfully meets their environmental expectations and requirements (Chen, 2009; Sharma & Paudel, 2018; Ahmad & Zhang, 2020). Research has indicated that the level of satisfaction with environmentally friendly practices is a strong indicator of whether customers will make repeat purchases. This is because it promotes consumer loyalty and motivates customers to buy from the same company again (Chen, 2009; Nittala & Moturu, 2021; Zhang et al., 2023).

Green Trust and Repurchase Decision

Green trust plays a crucial role in influencing customer behavior by indicating the level of confidence consumers have in a company or product's ability to continuously fulfill its environmental commitments and meet expectations (Guerreiro & Pacheco, 2021). Previous research indicates that green trust has a favorable impact on both green purchase intent and brand loyalty (Lin et al., 2017; Chen, 2009).

Green trust refers to a consumer's inclination to place confidence in a company due to the perception that the brand is environmentally responsible and will fulfill its environmental obligations (Zhuang et al., 2021). Consumers that possess greater degrees of green confidence exhibit a stronger propensity to make environmentally conscious purchasing choices (Amin & Tarun, 2020; Guerreiro & Pacheco, 2021; Alamsyah et al., 2021). The level of trust in the environmental credentials of products and services has a significant impact on customers' inclination to support and use them (Guerreiro & Pacheco, 2021; Alamsyah et al., 2021). Green trust refers to the willingness of consumers to place their trust in a product, service, or brand based on their beliefs and expectations regarding its credibility, virtues, and environmental performance. This trust is influenced by factors such as the product's or brand's competencies in terms of environmental performance. (Cheung et al., 2015; Guerreiro & Pacheco, 2021; Wang et al., 2020; Lutfie & Marcelino, 2020; Alamsyah et al., 2021).

Kahraman & Kazançoğlu (2019) conducted a thorough investigation and discovered that green trust acts as a substantial mediator between green brand image and green purchases. Emphasizing the importance of establishing consumer confidence in a brand's environmental assertions is essential for encouraging environmentally conscious purchasing behavior (Guerreiro & Pacheco, 2021). The current body of literature offers additional understanding regarding the significance of green trust (Ha, 2020). The relationship between the perceived value of environmentally friendly products and actual purchases is influenced by individuals' environmental attitudes. This, in turn, predicts their behavior toward buying green products. Green trust refers to the consumer's willingness to depend on a product, service, or brand based on their belief in its credibility, virtue, and competence in terms of environmental performance. Research has demonstrated that green trust acts as a crucial intermediary factor between a brand's green image and the intention to make environmentally friendly purchases. This emphasizes the significance of establishing customer trust in a brand's environmental assertions in order to promote eco-conscious buying behavior (Guerreiro & Pacheco, 2021). Furthermore, belief in environmental sustainability has a role in connecting the perceived value of eco-friendly items with repeated purchases of such products. This, in turn, predicts consumer behavior towards green products, as indicated by research conducted by Cheung et al. (2015) and Lin et al. (2017).

The Moderating Role of Education Level

Existing studies have confirmed that the level of consumer education has a substantial impact on the behavior of purchasing environmentally friendly products (Witek & Kuźniar, 2020). Research conducted by Moser (2015), Joshi and Rahman (2016), and Kassim et al. (2023) has revealed that individuals with higher levels of education possess a greater comprehension of environmental issues and are more inclined to make environmentally responsible purchase choices. Additional research has also investigated the correlation between several aspects of green marketing and the behavior of consumers in making environmentally friendly purchases (Kassim et al., 2023).

Researchers have shown increasing interest in the impact of education level moderation on consumer behavior. (Qayyum et al., 2022). In a study conducted by Kassim et al. (2023), it was discovered that education levels play a crucial role in influencing the connection between environmental awareness and actual green purchasing behavior. This finding aligns with the previous research by Joshi and Rahman (2015), which demonstrated that consumers with higher education levels exhibit a more pronounced correlation between pro-environmental attitudes and tangible purchasing behaviors. Furthermore, recent studies have examined how product knowledge and product classification may moderate the relationship between product knowledge and green purchasing behavior (Chen & Deng, 2016; Anuar, 2017; Yue et al., 2020). Furthermore, several additional studies have examined the impact of education moderation on the correlation between green marketing characteristics and customer behavior (Joshi & Rahman, 2015; Zhang & Dong, 2020; Kassim et al., 2023). The literature indicates that consumer education levels significantly influence consumers' decisions to purchase environmentally friendly products. Higher education levels are generally linked to a stronger correlation between environmental awareness and actual green purchasing behavior.

Re-Purchase Decision

Green purchasing decisions pertain to consumers' choices to buy items or services that are deemed environmentally sustainable (Witek & Kuźniar, 2020; Zhang & Dong, 2020). Joshi and Rahman (2015) previously identified several factors that influence green purchasing behavior, including environmental knowledge, attitudes, and subjective standards. (Moser, 2015; Chen et al., 2018; Chanda et al., 2023) highlighted the intricacy of the decision-making process involved in green buyback and the significance of comprehending the interplay among these aspects. Prior studies have revealed multiple elements that influence an individual's desire to repurchase environmentally friendly products. The elements can be classified into three primary groups: individual factors, product and marketing qualities, and social factors. (Zhang and Dong, 2020). Green purchasing decisions pertain to consumers' choices to buy items or services that are deemed environmentally sustainable (Witek & Kuźniar, 2020; Zhang & Dong, 2020). Joshi and Rahman (2015) previously identified several factors that influence green purchasing behavior, including environmental knowledge, attitudes, and subjective standards. (Moser, 2015; Chen et al., 2018; Chanda et al., 2023) highlighted the intricacy of the decision-making process involved in green buyback and the significance of comprehending the interplay among these aspects. Prior studies have revealed multiple elements that influence an individual's desire to repurchase environmentally friendly products. The elements can be classified into three primary groups: individual factors, product and marketing qualities, and social factors. (Zhang and Dong, 2020).

Environmental concern and knowledge are significant elements that influence individual green purchasing decisions (Sharma & Foropon, 2019; Zhuang et al., 2021). Consumers who have a greater degree of environmental concern are more inclined to participate in pro-environmental repurchase behavior (Moser, 2015), as they possess a heightened awareness of the detrimental effects of their consumption on the environment (SINGH et al., 2023). Likewise, individuals who possess a higher level of environmental knowledge are more likely to comprehend the environmental consequences associated with consumer repurchase choices. Consequently, they are more inclined to opt for products that are environmentally friendly (Moser, 2015; Singh et al., 2023).

Product and marketing features are significant factors that influence green repurchase decisions (Shrestha, 2018). Consumers' inclination to buy eco-friendly items can be greatly influenced by factors such as the quality, price, and availability of the products (Joshi & Rahman, 2015; Suki, 2016; Groening et al., 2018). Moreover, a successful marketing strategy that emphasizes the ecological advantages of a product can have a significant impact on consumer preferences, leading them to make more sustainable choices (Moser, 2015). Individuals' green repurchase behavior can be influenced by social factors, including social conventions and peer influence. (Ahmed & Khan, 2023) Consumers are more inclined to make environmentally friendly repurchase decisions if they perceive that their peers or social networks appreciate and actively participate in pro-environmental actions (Joshi & Rahman, 2015). The study of the "green repurchase decision," which involves the choice to buy eco-friendly items, has become a significant focus in the field of consumer behavior and sustainability (Zhang & Dong, 2020).

Conceptual Framework

The suggested conceptual framework indicates that repurchase decisions are primarily influenced by green brand image, green satisfaction, green trust, and education level.

H1: The green brand image has a substantial and favorable impact on green satisfaction.

H2: The green brand image has a substantial and favorable impact on green trust.

H3: The presence of green satisfaction has a notable and favorable impact on the decision to make a repeat purchase.

H4: The Green Trust has a substantial and favorable impact on the decision to repurchase.

H5: The green brand image has a significant positive influence on the re-purchase decision.

H6a: The relationship between green brand image and green satisfaction is influenced by the education level of individuals.

H6b: The relationship between green brand image and green trust is influenced by the education level of individuals.

H6c: The relationship between green satisfaction and re-purchase decisions is influenced by education level.

H6d: The Education Level of individuals influences the connection between Green Trust and Re-Purchase Decision.

H7: The Green Brand Image has a substantial and favorable impact on the Re-Purchase Decision by means of the mediation of Green Satisfaction.

H8: The Green Brand Image has a substantial and favorable impact on the Re-Purchase Decision by means of the mediation of Green Trust.

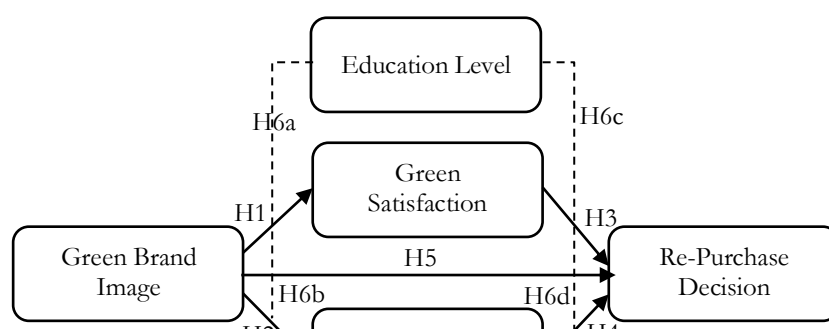


Figure.1 Framework

Methodology

Measures

The measuring items utilized in the study questionnaire primarily originate from prior research and have been adjusted to align with the research context of green brand image, green satisfaction, green trust, and green purchase decisions. Participants were requested to indicate their involvement in each behavior. Stafford et al. (2006) developed a three-dimensional scale to accurately evaluate environmental concern. The assessment of environmental participation is conducted using four items derived from the study conducted by Schuhwerk and Lefkock-Hagius in 1995.

The measurement of all items is conducted using a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree." Furthermore, the initial United Kingdom items were initially translated into Indonesian and subsequently retranslated into the United Kingdom for the purpose of comparison with the original (Brislin, 1970). The translated pieces undergo rigorous scrutiny by professionals to solicit feedback and assessments regarding the precision and comprehension of the sentences to be submitted. The correctness of the translation and the content of the questionnaire items were verified by soliciting the opinions of several consumers.

An exploratory study was carried out in Indonesia to assess participants' first comprehension of the item and prevent the risk of unreliable data caused by ambiguity during the official inquiry phase. A pilot study was conducted with a total of 121 samples to establish the reliability (Nunnally and Bernstein, 1994) and validity (Tabachnick and Fidell, 2007) of the questionnaire. Following the pilot survey, a formal survey with a sample size of 384 was undertaken to further validate the reliability and validity of the questionnaire (refer to Table 1). Subsequently, the research model hypothesis was tested using the SEM PLS software. To conduct hypothesis testing using structural equation modeling, it is necessary to have a sample size of at least 100, as recommended by Hair et al. (2018). This is because the study model includes five constructs, each consisting of more than three items, and these items have a high item communality (more than 0.7).

Data Collection

Although takeaway food online is popular among consumers across Indonesia, it is predominantly favored by youthful consumers residing in major cities. The gathering of data for both pilot studies and actual research was conducted using online survey platforms that were integrated with social media. Online data collection is efficient in quickly gathering information from youthful consumer groups and provides accessible access to consumer data from various regions at a low cost (Dirsehan and Cankat, 2021; Akram et al., 2020). In addition, the researcher employed a combination of quota sampling and purposive sampling approaches to pick respondents in order to meet the research objectives, a common approach in online retail studies (Cheah et al., 2022; Lim and An, 2021).

To mitigate measurement errors arising from regional disparities, the participants in this study were chosen from prominent cities throughout different areas of Indonesia, including Jakarta (18%), Bandung (16.5%), Surabaya (17%), Yogyakarta (16.8%), Malang (15%), and Bekasi (16.7%). The respondents in each city are evenly dispersed by gender to accurately represent the usual features of online takeaway consumers in Indonesia, particularly on the island of Java. A crucial requirement for the sample was that the questioned consumers must possess previous familiarity with purchasing food to be taken home via the application. In order to mitigate the potential influence of common method bias (CMB) in this work, the researchers implemented procedural controls as suggested by Fuller et al. (2016).

Data Analysis and Results

The study employed confirmation factor analysis (CFA) to validate the reliability and validity of the data. Structural equation analysis was used to assess the direct (H1-H5) and indirect (H7-H8) impacts of latent variables in the proposed model. Additionally, multi-group structural equation analysis was conducted to investigate the moderating effects (H6a–H6d) of education level.

Confirmatory Factor Analysis

The reliability and validity of the data are assessed using the CFA method with maximum likelihood estimation. This involves model mounting, composite reliability (CR), factor load, and extracted mean variance (AVE) calculations (Byrne, 2004; Chin et al., 2008; Byrne, 2009). In this study, a total of 384 valid replies were obtained. Among these, 215 were from male customers, accounting for 56% of the total, while 169 were from female consumers, accounting for 44% (Table 1). Furthermore, it is worth noting that all items exhibited a factor loading value exceeding 0.7 ($p < 0.05$) (f), a CR value greater than 0.70, and an AVE value surpassing 0.50. This provides evidence that the data meets the statistical criteria for composite reliability and convergence validity, as established by Bagozzi and Yi (1988), Kline (1998), and Hair et al. (2018) (Table 2).

In addition, it is evident that the Fornell-Larcker criterion value for each variable exceeds the variable's correlation coefficient with other variables (Table 3). This demonstrates that the credibility of data discrimination is firmly established. Furthermore, the correlation coefficient between the two latent variables is less than 0.7, which suggests that there is no issue of multicollinearity (Grewal et al., 2004). Thus, the measurement model of this study is validated using confirmatory factor analysis (CFA), and additionally, the structural model is analyzed to evaluate the hypothesis (Byrne, 2009).

Table 1. Demographic Profile (N=384).

Item	Category	Frequency	Percentage
Sex	Male	215	0.56
	Female	169	0.44
Age	Under 20	62	0.16
	21–30	137	0.36
	31–40	95	0.25
	Over 40	90	0.23
Occupation	Company employee	142	0.37
	Civil servant	52	0.14
	Farmer	13	0.03
	Student	89	0.23
	Other	88	0.23
Education background	Junior high school and below	17	0.04
	Senior high school and technical secondary school	97	0.25
	Junior college	107	0.28
	Bachelor's degree and above	163	0.42

Table 2. Composite Reliability and Convergence Validity

Item	Outer loadings	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
Green Brand Image				
GBI_1	0,828	0,911	0,933	0,737
GBI_2	0,855			
GBI_3	0,880			
GBI_4	0,861			
GBI_5	0,869			
Green Satisfaction				
GS_1	0,845	0,888	0,918	0,691
GS_2	0,831			
GS_3	0,799			
GS_4	0,808			
GS_5	0,873			
Green Trust				
GT_1	0,858	0,877	0,911	0,672
GT_2	0,808			
GT_3	0,769			
GT_4	0,784			
GT_5	0,873			
Green Purchase Decision				
RPD_1	0,831	0,883	0,915	0,683
RPD_2	0,817			
RPD_3	0,762			
RPD_4	0,841			
RPD_5	0,879			

***p < 0,001.

Table 3. Fornell-Larcker Criterion

	Green Brand Image	Green Satisfaction	Green Trust	Re-Purchasing Decision
Green Brand Image	0.831			
Green Satisfaction	0.748	0.812		
Green Trust	0.797	0.707	0.827	
Re-Purchasing Decision	0.773	0.814	0.802	0.832

P<0.01, *P<0.001.

Structural Equation Analysis

The hypothesis is examined through the use of structural equation modeling, which offers the advantage of simultaneously assessing the relationship between multiple independent and dependent variables (Hoyle,

1995; Byrne, 2009). Furthermore, this model has the capability to not only reveal the direct impacts of exogenous variables (independent variables) on endogenous variables (dependent variables), but also to assess their indirect consequences. The structural equation model was constructed using the SEM PLS software, employing the maximum likelihood method for model estimation (Byrne, 2004).

The findings also indicated that external factors accounted for over 50% of the variation in purchase intent ($R^2 = 56\%$). This suggests that a combination of perceived external factors significantly contributed to the explanation of recurrent purchases and online takeout. By comparison, the previous factors that influenced external variables had an impact on perception, accounting for 55% of the variation in repeat purchases. This resulted in a drop of 1.6% in the ability to explain the phenomenon. Meanwhile, the findings from R2 indicate that the perception of risk associated with ordering takeout food online is sufficient to account for the factors that influence the decision to make repeated purchases of takeout meals. More precisely, the Green Brand Image considers the fluctuations in Green Trust. The path coefficient (β) analysis revealed that green satisfaction ($\beta = 0.441$, $p < 0.001$) and green trust ($\beta = 0.376$, $p < 0.001$) had a significant and favorable influence on repeat purchases.

Table 4. Moderating Effect Test Results

	Hypothesis	$\chi^2(df)$ EL1=EL2	$\Delta\chi^2$	$\chi^2(df)$ EL2=EL3	$\Delta\chi^2$	$\chi^2(df)$ EL1=EL3	$\Delta\chi^2$	Hypothesis supported?
GBI→GS	H1	19.165(25)	3.851	19.075(25)	0.765	19.075	5.94*	Yes
GBI→GT	H2	20.730(25)	4.813*	16.751(25)	3.806	16.741	0.266	Yes
GS→RP D	H3	31.762(25)	16.260**	16.758(25)	18.361**	16.858	0.202	Yes
GT→RP D	H4	20.176(25)	4.367*	17.684(25)	0.547	17.684	2.679	Yes
GBI→RP D	H5	18.759(25)	2.956	18.963(25)	0.642	18.963	2.801	Yes

EL1 Pendidikan Tingkat 1, EL2 Pendidikan Tingkat 2, EL3 Tingkat Pendidikan 3. $P < 0,001$, * $P < 0,05$.

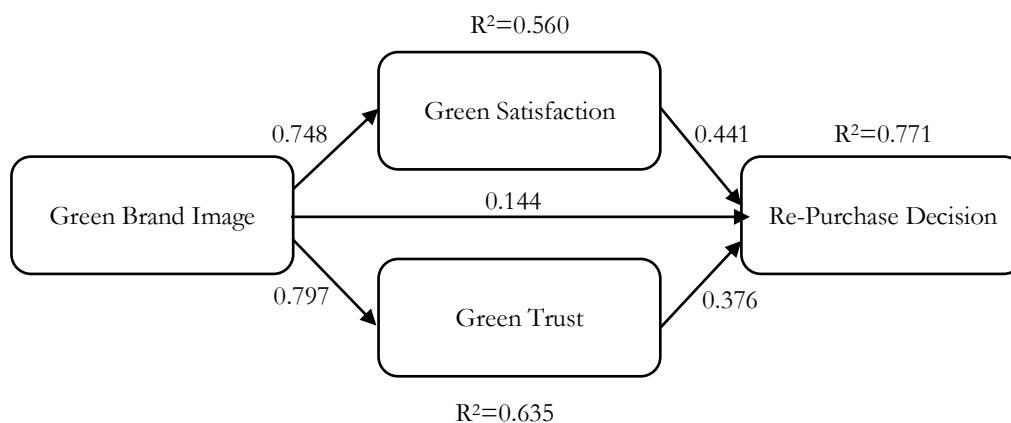


Fig. 2 Findings from The Hypothesis Test Conducted Using Structural Equation Modeling

Note: The significance levels are denoted as *** $p < 0.001$ and ** $p < 0.01$, indicating very significant results. The path coefficients represent standardized values.

Table 5. Mediation Test Results

	Hypothesis	IEi	SE	ER	Bias-corrected 95%CI		PRODCLIN2 95%CI		Mediation	Hypothesis supported?
					Lower	Upper	Lower	Upper		
GBI → GS → RPD	H7	-0.085	0.025	36.2%	-0.146	-0.045	-0.153	-0.036	Partial	Yes
GBI → GT → RPD	H8	-0.068	0.026	28.9%	-0.125	-0.024	-0.136	-0.019	Partial	Yes

Table 6. Mean Differences of Variables Between Consumers by Education Levels

Variables	Education Level 1		Education Level 2		Education Level 3		Effect size ^a	Effect size ^b	Effect size ^c
	Mean	SD	Mean	SD	Mean	SD			
GBI	3.125	0.753	3.132	0.432	3.321	0.020	0.343	0.185	-0.369
GS	3.236	0.536	3.298	0.326	3.306	0.304	0.486	1.658	1.219
GT	3.152	0.478	3.369	0.513	3.448	0.616	0.348	-0.357	-0.745
RPD	3.143	0.573	3.344	0.458	3.230	0.545	-0.779	0.500	1.185

The measure of effect is quantified as the quotient of the disparity in the mean score of the Education Level and the standard deviation of the disparity. Brand image associated with environmental sustainability, satisfaction with environmentally friendly practices, trust in environmentally conscious actions, and purchase decisions influenced by environmental considerations.

^a Indicates the size of the effect between education levels 1 and 2.

^b Indicates the size of the effect between education levels 1 and 3.

^c Indicates the size of the effect between education levels 2 and 3.

The study conducted by Zhao et al. (2010) utilized the bias-corrected bootstrap approach in SEM PLS to examine the mediation effect of green satisfaction and green trust on the relationship between green brand image and online takeout repeat purchases. The analysis involved 5000 repetitions and a 95% confidence interval. The results from Table 5 indicate that there is an indirect relationship between green brand image and re-purchase decisions, mediated by green satisfaction. Specifically, a more favorable perception of the green brand image leads to increased levels of green satisfaction, which subsequently decreases the probability of making re-purchase decisions. Moreover, the indirect impact of green brand image on re-purchase decisions via green trust indicates that green trust acts as a mediator in the connection between green brand image and repurchase decisions. This implies that the impact of green trust on repurchase choices is not just instantaneous but also mediated by psychological processes such as satisfaction and trust.

Multi-Group Structural Equation Analysis

This study employs the multi-group analysis approach as outlined by Byrne (2004). The study initially categorized the sample into three categories, considering the moderating variables of education level determined on a nominal scale (Kizgin et al., 2021): (a) The respondents in Education Level 1 (n = 114) have completed education up to high school and lower secondary school. (b) Education Level 2 (n = 107) represents respondents with a junior college education level. (c) Education Level 3 (n = 163) consists of respondents with undergraduate education and above. The average difference and effect size are presented in Table 6. Furthermore, this work examined an unconstrained multi-group structural model to assess the configuration invariance of the suggested research model. It is not advisable to determine invariance only based on Chisquare values, as sample size has a significant impact on the results (Cheung and Rensvold, 2002; Byrne and van de Vijver, 2010).

The fundamental model demonstrated a satisfactory fit, considering the sample size of 384. Additionally, the factor structure exhibited consistent attributes across all three educational groups. Furthermore, the measurement weight model indicates that the match index fulfills the necessary statistical conditions for metric invariance. Comparing it with the unconstrained model reveals a strong parallel index, hence ensuring the maintenance of measurement invariance (Steenkamp and Baumgartner, 1998). Next, the concept of structural weight invariance is investigated by comparing the measured weight model with the structural weight. Given that the results do not provide evidence for structural invariance, the researchers employed partial metric invariance (PMI) as a method to sequentially constrain structural routes. This was done in order to investigate the diversity of educational groups in terms of these pathways (Byrne et al., 1989).

Discussion and Implications

Discussion of the Results

This study examines the relationship between the benefits experienced by consumers from online takeaway packaging and their likelihood of making repeat takeout transactions. The study focuses on various variables, including green brand image, green satisfaction, and green trust. The research model was constructed and evaluated using structural equation modeling to investigate the direct and indirect effects of green brands on takeaway repurchase, mediated by green satisfaction and green trust. Additionally, the study examined the moderating role of education. Moreover, the respondents' profiles reveal that individuals who engage in online meal ordering are typically youthful, possess advanced levels of education, and are employed in professional occupations. These findings align with the research conducted by Wang et al. (2020), which revealed that individuals who are young and possess a higher level of education are more inclined to embrace the utilization of online meal delivery services.

The Green Brand Image (GBI) assessments provide strong internal consistency, as evidenced by the high Cronbach's alpha (0.911) and composite reliability (CR) (0.933). Additionally, the average variance extracted (AVE) of 0.737 suggests good convergent validity. These findings emphasize the significance of a positive environmental brand image in influencing consumer choices. According to a study conducted by Chen et al. (2020), it was discovered that GBI (green brand image) has a substantial impact on consumers' inclination to purchase environmentally friendly products. Furthermore, both Green Satisfaction (GS) and Green Trust (GT) exhibit Cronbach's alpha and CR values exceeding 0.8, which suggests excellent reliability. Additionally, the AVE values for GS (0.691) and GT (0.672) demonstrate satisfactory convergent validity. The statistical analysis demonstrates a substantial association between GBI, GS, and GT (H1 and H2 hypotheses), demonstrating that the green brand image has a favorable impact on consumer satisfaction and trust in environmental elements. These results align with the findings of Jang et al. (2015), who highlighted the significant influence of pleasure and trust in the context of eco-friendly food services. In addition, the Re-Purchasing Decision (RPD) demonstrated strong reliability and validity (Cronbach's alpha = 0.883, CR = 0.915, AVE = 0.683). The significant relationship between GS, GT, and RPD (H3 and H4 hypotheses) suggests that satisfaction and trust in environmental aspects have a notable impact on the decision to repurchase. These findings support the claim made by Namkung and Jang (2017), who emphasize the significance of environmentally friendly practices in impacting consumer loyalty in the restaurant sector. Moreover, the H7 and H8 hypotheses demonstrate that GS and GT partially mediate the link between GBI and RPD. This suggests that the positive perception of the environmentally friendly brand not only directly affects the decision to repurchase but also enhances consumer pleasure and trust in relation to environmental factors. The findings align with Han et al.'s (2018) study, which emphasized the mediating influence of satisfaction and trust in the context of eco-friendly customer behavior. Additionally, Chen et al. (2020) discovered that the connection between green brand image and purchase intent is influenced by green trust and satisfaction.

Moreover, the impact of education level on the research variable demonstrates the disparity in the average values of the variables Green Brand Image (GBI), Green Satisfaction (GS), Green Trust (GT), and Re-Purchase Decision (RPD) across three levels of education. The Green Brand Image (GBI) showed a

consistent increase in relation to the level of education, with values of 3.125, 3.132, and 3.321. Green satisfaction (GS) also increased from level 1 to 2, but experienced a slight decrease at level 3, with values of 3.236, 3.298, and 3.306. Similarly, there was a consistent increase in the values of 3.152, 3.369, and 3.448 for an unspecified variable. Re-Purchase Decision (RPD) followed a similar pattern, with an increase from level 1 to 2, but a decrease at level 3, with values of 3.143, 3.344, and 3.230. These findings align with the research conducted by Yadav and Pathak (2016), which discovered a favorable correlation between education levels and both environmental awareness and the intention to purchase environmentally friendly products. Consumers who have obtained higher education are more likely to comprehend and value the environmentally conscious initiatives of online food firms. Furthermore, the model demonstrates a 77.1% explanation of the variance in RPD ($R^2 = 0.771$), signifying a strong ability to make accurate predictions. The results align with the research conducted by Konuk et al. (2015), which demonstrated that trust and happiness with environmentally friendly items had a substantial impact on the likelihood of repurchasing.

Our findings indicate that consumers' sentiments about internet takeout have the greatest impact on their likelihood to make repeat purchases. This aligns with earlier studies that have emphasized the significance of green brands. In summary, these benefits emphasize the significant impact of good views on online takeout. Furthermore, an increasing number of customers have become accustomed to placing online orders for takeaway meals (Xie et al., 2021), resulting in favorable effects on their acquaintances, namely in terms of environmental satisfaction and environmental trust. The present study affirms the assertion made by earlier studies on the significance of green satisfaction in influencing consumers' repeat purchases (Mucinhato et al., 2022; German et al., 2022), hence confirming the influence of green satisfaction on consumers' online takeout repeat buy behavior. Advancements in network technology and increased competition among online platforms have led to the creation of more personalized and entertaining online ordering platforms. These platforms are now easier for consumers to use, resulting in reduced costs for online ordering and increased value for consumers (Guo et al., 2021a, 2021b; Koch et al., 2022). As a result, the level of trust that consumers have in environmentally-friendly products is increasing, which in turn promotes the repeated purchase of food items for consumption at home.

In addition, consumers who use online applications to order food take into account environmental factors when making their purchases. Consumers with higher levels of education have a greater level of green confidence (GT), which may suggest a reduced perception of risk associated with green promises. Moreover, the presence of GT partially mediates the relationship between trust, risk perception reduction, and repurchase decisions. Furthermore, the rise in GBI (Green Behavior Index) and GS (Green Score) in conjunction with the amount of education indicates that those with higher levels of education exhibit greater concern for the environmental elements of online meal delivery services. The significant impact of GBI on GS and GT (0.748 and 0.797) indicates that the green brand image plays a crucial role in molding consumer perceptions and attitudes towards environmentally friendly behaviors.

Theoretical Implications

The advent of the Internet, particularly the transformation of mobile networks due to smart devices, is undeniably a two-sided phenomenon. While it enables convenient access to information and services, it also entails significant potential hazards. The study incorporates each variable indication to develop and empirically confirm the intended model of consumer behavior towards online takeout purchases. The model demonstrates the balance between the advantages and drawbacks of consumer decision-making on mobile networks, which holds theoretical importance for the advancement of sustainable consumption in the post-epidemic future. This study broadens the understanding of risk perception (Bauer, 1960; Cox, 1967) by examining online takeaway usage in light of the economic challenges arising from the COVID-19 epidemic. While online takeout provides convenience and comfort, it also poses threats to the environment and health. The study conducted a comprehensive analysis of four dimensions of pollution risk associated with takeout packaging. This analysis was based on a review of existing literature, in-depth interviews, and questionnaire data. The findings of this study provide a solid foundation for future researchers to further investigate the risks posed by packaging pollution. Simultaneously, it suggests the possibility of applying the concept of risk perception in environmental protection to other situations. Create and convey a robust, environmentally friendly brand identity, particularly targeting the well-educated consumer niche as well as

others. Direct efforts towards enhancing consumer pleasure and fostering trust in ecologically sustainable methods. Furthermore Employ differentiation tactics by tailoring environmental messages and practices to match consumer education levels. However, transparency and consumer education can mitigate the perception of dangers associated with environmental claims.

Practical Implications

Online takeout platforms provide consumers with the convenience of catering. Merchants offer online catering services on the business front to minimize expenses associated with physical stores and to attract a larger customer base through online purchasing platforms (Cheah et al., 2022). Nevertheless, the task of controlling contamination in online catering packaging presents greater challenges (Liu et al., 2020). The improper utilization of non-biodegradable and detrimental packaging for online deliveries has adverse consequences for the local ecological environment (Schuermann and Woo, 2022). The improper disposal and inadequate treatment of online takeaway packaging contribute to substantial pollution (Xie et al., 2021). Subsequently, these findings elevate consumers' perceptions of risk. Specifically, the potential harm posed by takeaway packaging to human health directly reinforces consumers' perception of risk, hence decreasing their likelihood of making repeat purchases due to diminished pleasure with environmentally friendly practices and reduced trust in environmentally conscious brands. Hence, it is imperative to implement strong steps in order to prevent this undesirable mechanism of impact.

From a national administrative standpoint, there is a need for further enhancement of food packaging rules and regulations. Liu et al. (2020) argue that the government should establish regulatory guidelines to oversee the packaging used for takeout meals. To streamline the recycling of food packaging, it is essential to establish precise guidelines for the recycling method and categorization of packaging waste (Govindan et al., 2022). These laws can be evaluated in some regions, particularly in metropolitan hubs where there is a higher concentration of online takeout demand (Wang & He, 2021), and thereafter implemented progressively over a broader scope. Furthermore, it is imperative to establish a market adjustment mechanism. Establishing a package disposal cost scheme is crucial for enhancing the effectiveness of food packaging recycling. Simultaneously, it is imperative to decrease taxes or offer financial incentives to packaging makers who utilize biodegradable and other ecologically sustainable raw materials (Stoica et al., 2020).

Furthermore, it is imperative for industry participants in the internet takeaway supply chain to exhibit greater self-discipline. Initially, it is crucial for packaging manufacturers to uphold their social obligation (Meena and Kumar, 2022) and endeavor to achieve advancements and originality in packaging technology to manufacture cost-effective, environmentally friendly packaging, such as reusable packaging (Schuermann and Woo, 2022) and biodegradable packaging derived from agricultural cellulose waste, thereby transforming waste into valuable resources (Ma et al., 2022). Furthermore, it is imperative for online takeaway providers to give precedence to the use of biodegradable packaging and refrain from using excessive packaging. Packaging recycling groups should use practical methods, such as utilizing organic waste (Hosen et al., 2022), to address the issue of food packaging. For instance, the optimal location to discard compostable packages is either a composting facility or a landfill. Avoiding the incineration of food packaging trash is crucial due to the emission of noxious gases. Furthermore, it is imperative for customers to enhance their consciousness regarding environmental preservation and cultivate a rational approach towards takeout consumption. The government should enhance civic education to provide guidance to citizens in adopting sustainable lifestyles, cultivating proper waste management practices, prioritizing the consumption of environmentally-friendly packaged foods, and adhering to waste classification regulations (Govindan et al., 2022; Lou et al., 2022), with particular emphasis on individuals with higher and lower levels of education. This will effectively accomplish the objective of mitigating the adverse effects of takeout packaging on the environment and ultimately advocating for sustainable consumption.

Conclusion and Future Research Directions

Retailers across different sectors must modify their marketing tactics to align with new economic developments, which have significantly influenced customer buying behavior. Consumers are increasingly expressing heightened concerns over health and the environmental consequences of consumption, driven by the constraints of limited resources and the insatiable desire for goods. As a result, customers are inclined to consider the advantages and disadvantages of products offered by retailers, which necessitates academics having a greater understanding of the elements that influence consumers' decision-making process while making repeated purchases. The present study enhances the existing body of information by employing a comprehensive model of perceived risk to demonstrate the impact of online takeaway packaging pollution on consumers' repeat purchases and to identify the specific circumstances under which this perceived risk is influential. The ramifications of our findings are significant for future online takeout shops. Retailers should thoroughly evaluate the technology strengths and environmental shortcomings when analyzing the underlying process of internet takeout repeat purchases. Clearly, this study's conclusion indicates that takeout merchants in Indonesia should prioritize enhancing food packaging rather than solely focusing on boosting food quality and convenience. Consumers are increasingly mindful of the adverse consequences of food packaging on both health and the environment. This, in turn, diminishes the positive influence of intended behavior in repurchasing food for online delivery. This work has identified numerous constraints that require more exploration in order to broaden the ramifications and theoretical applications.

Initially, the study failed to take into account additional variables such as cost or convenience that could potentially impact the choice to repurchase. Furthermore, it is imperative to conduct longitudinal research in order to comprehensively comprehend the alterations in consumer behavior as it evolves over a period of time. Furthermore, conducting cross-cultural comparative studies can offer a valuable understanding of variations in consumer views and behaviors pertaining to ecologically sustainable food delivery services. The investigation demonstrates that consumers who utilize online applications to acquire food are progressively taking into account environmental factors while making their purchasing choices. The perception of a brand as environmentally friendly, the level of customer satisfaction, and the level of trust in the brand are important factors that influence whether customers will choose to make repeat purchases. Service providers must implement tactics that integrate environmental consciousness with a favorable client experience in order to establish enduring customer loyalty.

References

- Ahmad, W., & Zhang, Q. (2020). Green purchase intention: Effects of electronic service quality and customer green psychology. *Elsevier BV*, 267, 122053-122053. <https://doi.org/10.1016/j.jclepro.2020.122053>
- Alamsyah, D P., Aryanto, R., Indriana., Widjaja, V F., & Rohaeni, H. (2021). The strategy of eco-friendly products with green consumer behavior: Development of green trust model. *IOP Publishing*, 824(1), 012044-012044. <https://doi.org/10.1088/1755-1315/824/1/012044>
- Amin, S. and Tarun, M.T. (2021), "Effect of consumption values on customers' green purchase intention: a mediating role of green trust", *Social Responsibility Journal*, Vol. 17 No. 8, pp. 1320-1336. <https://doi.org/10.1108/SRJ-05-2020-0191>
- Anuar, M M. (2017). The influence of internal factors on consumer's green consumption behavior. *Institute of Advanced Science Extension (IASE)*, 4(12), 238-242. <https://doi.org/10.21833/ijaas.2017.012.041>
- Bao, X. (2020). Green packaging use willingness factor scale development. *IOP Publishing*, 768(5), 052084-052084. <https://doi.org/10.1088/1757-899x/768/5/052084>
- Bashir, S., Khwaja, M G., Rashid, Y., Turi, J A., & Waheed, T. (2020). Green Brand Benefits and Brand Outcomes: The Mediating Role of Green Brand Image. *SAGE Publishing*, 10(3), 215824402095315-215824402095315. <https://doi.org/10.1177/2158244020953156>
- Birgelen, M V., Semeijn, J., & Keicher, M. (2008). Packaging and Proenvironmental Consumption Behavior. *SAGE Publishing*, 41(1), 125-146. <https://doi.org/10.1177/0013916507311140>
- Chanda, R C., Isa, S M., & Ahmed, T. (2023). Factors influencing customers' green purchasing intention: evidence from developing country
- Chandra, Y U., & Cassandra, C. (2019). Stimulus Factors of Order Online Food Delivery. <https://doi.org/10.1109/icimtech.2019.8843715>
- Chen, C., Chen, C., & Tung, Y. (2018). Exploring the Consumer Behavior of Intention to Purchase Green Products in Belt and Road Countries: An Empirical Analysis. *Multidisciplinary Digital Publishing Institute*, 10(3), 854-854. <https://doi.org/10.3390/su10030854>
- Chen, K., & Deng, T. (2016). Research on the Green Purchase Intentions from the Perspective of Product Knowledge. *Multidisciplinary Digital Publishing Institute*, 8(9), 943-943. <https://doi.org/10.3390/su8090943>
- Chen, Y. (2009). The Drivers of Green Brand Equity: Green Brand Image, Green Satisfaction, and Green Trust. *Springer Science+Business Media*, 93(2), 307-319. <https://doi.org/10.1007/s10551-009-0223-9>

- Chen, Y. S. (2010). The drivers of green brand equity: Green brand image, green satisfaction, and green trust. *Journal of Business Ethics*, 93(2), 307-319. <https://doi.org/10.1007/s10551-009-0223-9>
- Chen, Y. S., Lin, C. Y., & Weng, C. S. (2015). The influence of environmental friendliness on green trust: The mediation effects of green satisfaction and green perceived quality. *Sustainability*, 7(8), 10135-10152. <https://doi.org/10.3390/su70810135>
- Chen, Y., & Chang, C. (2013). Towards green trust. *Emerald Publishing Limited*, 51(1), 63-82. <https://doi.org/10.1108/00251741311291319>
- Chen, Y., Chang, T., Li, H., & Chen, Y. (2020). The Influence of Green Brand Affect on Green Purchase Intentions: The Mediation Effects of Green Brand Associations and Green Brand Attitude. *Multidisciplinary Digital Publishing Institute*, 17(11), 4089-4089. <https://doi.org/10.3390/ijerph17114089>
- Cheung, R., Lam, A Y C., & Lau, M M. (2015). Drivers of green product adoption: the role of green perceived value, green trust and perceived quality. *Taylor & Francis*, 25(3), 232-245. <https://doi.org/10.1080/21639159.2015.1041781>
- Chin, T A., Lawi, N H M., Sulaiman, Z., Mas'od, A., Muharam, F M., & Tat, H H. (2019). Effect of green brand positioning, knowledge, and attitude of customers on green purchase intention. <http://eprints.utm.my/id/eprint/87347/>
- Chrisjatmiko, K. (2018). Towards green loyalty: the influences of green perceived risk, green image, green trust and green satisfaction. *IOP Publishing*, 106, 012085-012085. <https://doi.org/10.1088/1755-1315/106/1/012085>
- Chu, S. H., Yang, H., Lee, M., & Park, S. (2017). The impact of institutional pressures on green supply chain management and firm performance: Top management roles and social capital. *Sustainability*, 9(5), 764. <https://doi.org/10.3390/su9050764>
- Delafrooz, N., Taleghani, M., & Nouri, B. (2014). Effect of green marketing on consumer purchase behavior. *HBKU Press*, 2014(1). <https://doi.org/10.5339/connect.2014.5>
- Dhir, A., Sadiq, M., Talwar, S., Sakashita, M., & Kaur, P. (2021). Why do retail consumers buy green apparel? A knowledge-attitude-behaviour-context perspective. *Elsevier BV*, 59, 102398-102398. <https://doi.org/10.1016/j.jretconser.2020.102398>
- Et.al, S M S. (2021). Customer Loyalty Analysis on Online Food Delivery Services. *Karadeniz Technical University*, 12(3), 4003-4013. <https://doi.org/10.17762/turcomat.v12i3.1690>
- Feroz, A K., Zo, H., & Chiravuri, A. (2021). Digital Transformation and Environmental Sustainability: A Review and Research Agenda. *Multidisciplinary Digital Publishing Institute*, 13(3), 1530-1530. <https://doi.org/10.3390/su13031530>
- Groening, C., Sarkis, J., & Zhu, Q. (2018). Green marketing consumer-level theory review: A compendium of applied theories and further research directions. *Elsevier BV*, 172, 1848-1866. <https://doi.org/10.1016/j.jclepro.2017.12.002>
- Guerreiro, J., & Pacheco, M P. (2021). How Green Trust, Consumer Brand Engagement and Green Word-of-Mouth Mediate Purchasing Intentions. *Multidisciplinary Digital Publishing Institute*, 13(14), 7877-7877. <https://doi.org/10.3390/su13147877>
- Ha, M T. (2020). Investigating green brand equity and its driving forces. *Growing Science*, 2385-2394. <https://doi.org/10.5267/j.msl.2020.2.026>
- Ha, M T. (2021). Optimizing Green Brand Equity: The Integrated Branding and Behavioral Perspectives. *SAGE Publishing*, 11(3), 215824402110360-215824402110360. <https://doi.org/10.1177/21582440211036087>
- Hameed, I., Hyder, Z., Imran, M., & Shafiq, K. (2021). Greenwash and green purchase behavior: an environmentally sustainable perspective. *Springer Science+Business Media*, 23(9), 13113-13134. <https://doi.org/10.1007/s10668-020-01202-1>
- Harahap, M F., Mubarak, A., & Suzianti, A. (2020). Designing a Green Food Delivery Packaging with QFD for Environment (QFDE) and TRIZ. *IOP Publishing*, 464(1), 012004-012004. <https://doi.org/10.1088/1755-1315/464/1/012004>
- Hussain, K., & Waheed, A. (2016). Building green brand relations: the role of green brand image as significant driver. *Inderscience Publishers*, 4(2), 116-116. <https://doi.org/10.1504/ijewe.2016.080447>
- Joshi, Y., & Rahman, Z. (2015). Factors Affecting Green Purchase Behaviour and Future Research Directions. *Elsevier BV*, 3(1-2), 128-143. <https://doi.org/10.1016/j.ism.2015.04.001>
- Joshi, Y., & Rahman, Z. (2016). Predictors of young consumer's green purchase behaviour. *Emerald Publishing Limited*, 27(4), 452-472. <https://doi.org/10.1108/meq-05-2015-0091>
- Kahraman, A., & Kazançoğlu, İ. (2019). Understanding consumers' purchase intentions toward natural-claimed products: A qualitative research in personal care products
- Kang, S., & Hur, W. (2011). Investigating the Antecedents of Green Brand Equity: A Sustainable Development Perspective. *Wiley*, 19(5), 306-316. <https://doi.org/10.1002/csr.281>
- Kassim, A., Athirah, A., & Setijaningrum, E. (2023). Behavioral Intention and The Influence of Demographic Factors in Purchasing Environmentally Sustainable Products among Residents in Petaling., 13(2). <https://doi.org/10.6007/ijarafms/v13-i2/18024>
- Keni, K., Asali, A., Teoh, A P., & Muthuveloo, R. (2020). Factors Influencing Green Purchase Intention. <https://doi.org/10.2991/assehr.k.201209.161>
- Ketelsen, M., Janßen, M., & Hamm, U. (2020). Consumers' response to environmentally-friendly food packaging - A systematic review. *Elsevier BV*, 254, 120123-120123. <https://doi.org/10.1016/j.jclepro.2020.120123>
- Kim, Y., Kang, J., & Chun, H. (2022). Is online shopping packaging waste a threat to the environment?. *Elsevier BV*, 214, 110398-110398. <https://doi.org/10.1016/j.jeconlet.2022.110398>
- Konuk, F. A. (2019). The influence of perceived food quality, price fairness, perceived value and satisfaction on customers' revisit and word-of-mouth intentions towards organic food restaurants. *Journal of Retailing and Consumer Services*, 50, 103-110. <https://doi.org/10.1016/j.jretconser.2019.05.005>

- Konuk, F. A., Rahman, S. U., & Salo, J. (2015). Antecedents of green behavioral intentions: A cross-country study of Turkey, Finland and Pakistan. *International Journal of Consumer Studies*, 39(6), 586-596. <https://doi.org/10.1111/ijcs.12210>
- Kumar, A., Prakash, G., & Kumar, G. (2021). Does environmentally responsible purchase intention matter for consumers? A predictive sustainable model developed through an empirical study. *Journal of Retailing and Consumer Services*, 58, 102270. <https://doi.org/10.1016/j.jretconser.2020.102270>
- Kumar, V., Ekren, B Y., Wang, J., Shah, B., & Frederico, G F. (2022). Investigating the impact of COVID-19 on sustainable food supply chains. *Emerald Publishing Limited*, 18(4), 1250-1273. <https://doi.org/10.1108/jm2-03-2022-0072>
- Lestari, E R., Septifani, R., & Nisak, K. (2021). Green awareness and green purchase intention: The moderating role of corporate image. *IOP Publishing*, 924(1), 012051-012051. <https://doi.org/10.1088/1755-1315/924/1/012051>
- Lin, J., Lobo, A., & Leckie, C. (2017). Green brand benefits and their influence on brand loyalty. *Emerald Publishing Limited*, 35(3), 425-440. <https://doi.org/10.1108/mip-09-2016-0174>
- Lin, J., Lobo, A., & Leckie, C. (2017). The influence of green brand innovativeness and value perception on brand loyalty: the moderating role of green knowledge. *Taylor & Francis*, 27(1), 81-95. <https://doi.org/10.1080/0965254x.2017.1384044>
- Lutfie, H., & Marcelino, D. (2020). Consumer Trust to Buy Green Product: Investigation of Green Perceived Value with Green Satisfaction Mediation. <https://doi.org/10.1109/citsm50537.2020.9268826>
- Martínez, P. (2015). Customer loyalty: exploring its antecedents from a green marketing perspective. *International Journal of Contemporary Hospitality Management*, 27(5), 896-917. <https://doi.org/10.1108/IJCHM-03-2014-0115>
- Martinho, G., Pires, A., Portela, G., & Fonseca, M. (2015). Factors affecting consumers' choices concerning sustainable packaging during product purchase and recycling. *Elsevier BV*, 103, 58-68. <https://doi.org/10.1016/j.resconrec.2015.07.012>
- Meyer, A. (2015). Does education increase pro-environmental behavior? Evidence from Europe. *Ecological Economics*, 116, 108-121. <https://doi.org/10.1016/j.ecolecon.2015.04.018>
- Moser, A K. (2015). Thinking green, buying green? Drivers of pro-environmental purchasing behavior. *Emerald Publishing Limited*, 32(3), 167-175. <https://doi.org/10.1108/jcm-10-2014-1179>
- Ncube, L K., Ude, A U., Ogunmuyiwa, E N., Zulkifli, R., & Nongwe, I. (2020). Environmental Impact of Food Packaging Materials: A Review of Contemporary Development from Conventional Plastics to Polylactic Acid Based Materials. *Multidisciplinary Digital Publishing Institute*, 13(21), 4994-4994. <https://doi.org/10.3390/ma13214994>
- Nekmahmud, M., & Fekete-Farkas, M. (2020). Why Not Green Marketing? Determinates of Consumers' Intention to Green Purchase Decision in a New Developing Nation. *Multidisciplinary Digital Publishing Institute*, 12(19), 7880-7880. <https://doi.org/10.3390/su12197880>
- Nittala, R., & Moturu, V R. (2021). Role of pro-environmental post-purchase behaviour in green consumer behaviour. *Emerald Publishing Limited*, 20(1), 82-97. <https://doi.org/10.1108/xjm-03-2021-0074>
- Nordin, N., & Selke, S E M. (2010). Social aspect of sustainable packaging. *Wiley*, 23(6), 317-326. <https://doi.org/10.1002/pts.899>
- Oloyede, O O., & Lignou, S. (2021). Sustainable Paper-Based Packaging: A Consumer's Perspective. *Multidisciplinary Digital Publishing Institute*, 10(5), 1035-1035. <https://doi.org/10.3390/foods10051035>
- Popović, I., Bossink, B., & Sijde, P C V D. (2019). Factors Influencing Consumers' Decision to Purchase Food in Environmentally Friendly Packaging: What Do We Know and Where Do We Go from Here?. *Multidisciplinary Digital Publishing Institute*, 11(24), 7197-7197. <https://doi.org/10.3390/su11247197>
- Priya, M S., Priya, S S., Matharu, M., & Kabiraj, S. (2017). Exploring green business functions and green brand equity: proposition of a conceptual framework. , 2(4), 262-262. <https://doi.org/10.1504/ijqrs.2017.10009122>
- Putri, A S., Zakaria, R Z., & Yuniaristanto, Y Y. (2022). Factors Affecting User Satisfaction with Online Food Delivery Service Applications in Indonesia (Gofood, Grabfood, Dan Shopeefood). , 21(2), 161-161. <https://doi.org/10.20961/performa.21.2.57349>
- Qayyum, A., Jamil, R A., & Shear, A. (2022). Impact of green marketing, greenwashing and green confusion on green brand equity. *Emerald Publishing Limited*, 27(3), 286-305. <https://doi.org/10.1108/sjme-03-2022-0032>
- Rahman, S U., & Nguyen-Viet, B. (2022). Towards sustainable development: Coupling green marketing strategies and consumer perceptions in addressing greenwashing. *Wiley*, 32(4), 2420-2433. <https://doi.org/10.1002/bse.3256>
- Rzayeva, A., Coffigniez, F., Zeynalov, N., Gontard, N., & Guillard, V. (2023). Integrating the latest biological advances in the key steps of a food packaging life cycle. *Frontiers Media*, 10. <https://doi.org/10.3389/fnut.2023.1223638>
- Sadiku, M N O., Kotteti, C M M., & Musa, S M. (2018). GREEN MARKETING: A PRIMER. , 4(11), 17-20. <https://doi.org/10.31695/ijasre.2018.32932>
- Shabbir, M S., Sulaiman, M A B A., Al-Kumaim, N H., Mahmood, A., & Abbas, M. (2020). Green Marketing Approaches and Their Impact on Consumer Behavior towards the Environment—A Study from the UAE. *Multidisciplinary Digital Publishing Institute*, 12(21), 8977-8977. <https://doi.org/10.3390/su12218977>
- Sharma, A J., & Foroapon, C. (2019). Green product attributes and green purchase behavior. *Emerald Publishing Limited*, 57(4), 1018-1042. <https://doi.org/10.1108/md-10-2018-1092>
- Sharma, A., & Paudel, P K. (2018). Determinants of Green Brand Trust and the Mediating Role of Green Brand Satisfaction. , 3, 1-24. <https://doi.org/10.3126/irjms.v3i0.28033>
- Sherwani, M M K., Khan, M A., Amanullah, M., & Khaled, A S. (2021). AN EMPIRICAL INVESTIGATION OF FACTORS INFLUENCING GREEN PRODUCT PURCHASE INTENTION OF MILLENNIALS. , 2(1), 45-59. <https://doi.org/10.48185/sebr.v2i1.307>
- Shrestha, S. (2018). Analysis of Green Marketing Tools towards Consumer Purchase Intention in Kathmandu. , 1(1), 37-37. <https://doi.org/10.3126/jbssr.v1i1.20948>

- SINGH, S F., Chawla, U., & Iqbal, H. (2023). Relationship between social cause, environment conservation and environmental attitude, towards promoting green purchasing behavior. University of Belgrade, 18(1), 27-43. <https://doi.org/10.5937/sjm18-36157>
- Siyal, S., Ahmed, M J., Ahmad, R., Khan, B S., & Xin, C. (2021). Factors Influencing Green Purchase Intention: Moderating Role of Green Brand Knowledge. Multidisciplinary Digital Publishing Institute, 18(20), 10762-10762. <https://doi.org/10.3390/ijerph182010762>
- Suki, N M. (2016). Green product purchase intention: impact of green brands, attitude, and knowledge. Emerald Publishing Limited, 118(12), 2893-2910. <https://doi.org/10.1108/bfj-06-2016-0295>
- Susanty, A., Puspitasari, N B., Prastawa, H., Listyawardhani, P., & Tjahjono, B. (2021). Antecedent Factors of Green Purchasing Behavior: Learning Experiences, Social Cognitive Factors, and Green Marketing. Frontiers Media, 12. <https://doi.org/10.3389/fpsyg.2021.777531>
- Wang, J., Nguyen, N., & Bu, X. (2020). Exploring the Roles of Green Food Consumption and Social Trust in the Relationship between Perceived Consumer Effectiveness and Psychological Wellbeing. Multidisciplinary Digital Publishing Institute, 17(13), 4676-4676. <https://doi.org/10.3390/ijerph17134676>
- Wang, J., Wang, S., Xue, H., Wang, Y., & Li, J. (2018). Green image and consumers' word-of-mouth intention in the green hotel industry: The moderating effect of Millennials. Journal of Cleaner Production, 181, 426-436. <https://doi.org/10.1016/j.jclepro.2018.01.250>
- Witek, L., & Kuźniar, W. (2020). Green Purchase Behavior: The Effectiveness of Sociodemographic Variables for Explaining Green Purchases in Emerging Market. Multidisciplinary Digital Publishing Institute, 13(1), 209-209. <https://doi.org/10.3390/su13010209>
- Yadav, R., Dokania, A K., & Pathak, G S. (2016). The influence of green marketing functions in building corporate image. Emerald Publishing Limited, 28(10), 2178-2196. <https://doi.org/10.1108/ijchm-05-2015-0233>
- Yue, B., Sheng, G., She, S., & Xu, J. (2020). Impact of Consumer Environmental Responsibility on Green Consumption Behavior in China: The Role of Environmental Concern and Price Sensitivity. Multidisciplinary Digital Publishing Institute, 12(5), 2074-2074. <https://doi.org/10.3390/su12052074>
- Zhang, N., Guo, M., Bu, X., & Jin, C. (2023). Understanding green loyalty: A literature review based on bibliometric-content analysis. Elsevier BV, 9(7), e18029-e18029. <https://doi.org/10.1016/j.heliyon.2023.e18029>
- Zhang, X., & Dong, F. (2020). Why Do Consumers Make Green Purchase Decisions? Insights from a Systematic Review. Multidisciplinary Digital Publishing Institute, 17(18), 6607-6607. <https://doi.org/10.3390/ijerph17186607>
- Zhuang, W., Luo, X., & Riaz, M U. (2021). On the Factors Influencing Green Purchase Intention: A Meta-Analysis Approach. Frontiers Media, 12. <https://doi.org/10.3389/fpsyg.2021.644020>.