

Packaging-free practices in food retail: the impact on customer loyalty

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Abstract

Purpose – This study analyzes the impact of packaging-free practices in food retail stores, particularly supermarkets, on customer loyalty.

Design/methodology/approach – Based on the literature on the impacts of sustainable practices and corporate social responsibility (CSR) policies on consumer behavior, this study defined a set of seven hypotheses that were tested using data collected from 447 consumers that regularly buy food products at supermarkets. The data were subjected to structural equation modeling using SmartPLS.

Findings – This study confirmed that packaging-free practices positively influence brand image, brand trust, satisfaction and customer loyalty. The expected positive impacts of brand image and satisfaction on customer loyalty were also confirmed. However, the expected impact of brand trust on customer loyalty was not confirmed.

Practical implications – This article demonstrates how a competitive sector can reap benefits from implementing sustainable practices in the operational domain, particularly by offering packaging-free products at the point of purchase. Thus, as recommended, general retail stores (e.g. supermarkets) gradually increase the stores' offering of packaging-free food products, as this practice has been shown to have positive impacts not only on brand image, but also on customer satisfaction and loyalty.

Originality/value – This study extends the literature on the effects of sustainable practices on customer loyalty, by focusing on a specific practice. Furthermore, this study contributes to the advancement of research on packaging-free practices in retail by developing a research framework and providing evidence on the direct and indirect effects of this specific practice on customer loyalty.

Keywords Supermarkets, Customer loyalty, Customer satisfaction, Brand image, Brand trust, Packaging-free products, Unpackaged products, Sustainability, Corporate social responsibility

Paper type Research paper

Introduction

Sustainability is an essential topic in current times. Sustainability is acknowledged as a relevant solution for social, environmental and economic issues such as pollution, depletion of essential natural resources and inequality within and between nations. In line with

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Ethics statement: This study followed rigorous ethical principles generally applied to research in the social sciences. This study complies with the ethical guidelines of the Authors' institution and the legal requirements of the study country. Participation was anonymous, confidential and voluntary. The participants provided informed consent before taking part in the study. The information collected did not enable the identification of the participants. No personal data was collected besides the necessary information for sample characterization. The topic approached in the research did not create risks (e.g. psychological) for the participants.

Plain language summary: This study shows that supermarkets can improve customer loyalty by making available packaging-free food products.



growing public awareness of the importance of sustainable development, companies are increasingly integrating social and environmental values into their business models and product development (Leisinger, 2015; Karman and Savaneviciene, 2021). Sustainable practices are the ones that help “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987). Companies that embrace sustainability practices are both assuming a role as agents of social change (Klein, 2014) and complying with consumers’ preferences for more sustainable solutions (Tan *et al.*, 2021; Alamsyah *et al.*, 2018; Sundstrom *et al.*, 2020). There is a growing consensus that the pursuit of sustainability leads to economic progress (Norman and MacDonald, 2004). Sustainable practices and policies are expected to positively affect firms’ competitive advantage (Alamsyah *et al.*, 2018; Cuesta-Valiño *et al.*, 2019; Karman and Savaneviciene, 2021; Cantele and Zardini, 2018) and financial performance (Tariq *et al.*, 2019), namely due to their effect on customer satisfaction and loyalty. While the existing literature provides valuable insights into the potential benefits of sustainable practices for companies, most studies tend to focus on sustainability and corporate social responsibility (CSR) practices in general (e.g. Du *et al.*, 2010; Huang *et al.*, 2017; Louis *et al.*, 2021; Khan and Fatma, 2019; Marín-García *et al.*, 2021; López-Pérez *et al.*, 2018; Tran, 2022). Thus, there is an urgent need for research that delves deeper into the impact of specific sustainability practices. This study aims to address this gap by analyzing the effect of packaging-free practices in food retail on customer loyalty.

Currently, various sustainability initiatives are dedicated to reducing the use of plastic, one of which is to avoid pre-packaged products (Marken and Hörisch, 2019). This practice entails the transportation of products either in a package provided by the shop or in a reusable package brought by the customer and is rapidly gaining momentum. Although some form of packaging is necessary to transport purchased goods, sustainable packaging practices, such as the purchase of packaging-free instead of pre-packed food products, can help reduce the use of plastic, food waste and transportation costs (Rapp *et al.*, 2017; Pålsson and Sandberg, 2022; Louis *et al.*, 2021). Research has shown that consumers pay attention to sustainable packaging options offered by grocery retailers, viewing it as a form of green buying behavior that influences their shopping preferences (Su *et al.*, 2021). Despite the fact that existing research explains consumers’ motivations for choosing packaging-free products (Beitzen-Heineke *et al.*, 2017), the literature has disregarded the impact of such practices on customer loyalty. Customer loyalty is of particular importance in sectors characterized by intense competition, such as food retail. It contributes to companies’ profitability and market share by protecting them from price competition and fostering customer retention (Balci *et al.*, 2019).

Hence, the main aim of this study is to analyze the role of selling packaging-free food products in building loyalty in the food retail sector. This article contributes to the literature on the adoption of sustainability practices by companies by examining a specific practice: the availability of packaging-free food products in retail. It also makes contributions to the literature on the packaging-free retail business model by demonstrating that the adoption of this practice by general retail stores can also meet consumer needs and foster loyalty. More importantly, this article contributes to the advancement of research on packaging-free practices in retail by developing a research framework that facilitates the provision of empirical evidence regarding the direct and indirect effects of this specific practice on customer loyalty.

The remainder of this article is organized as follows. Based on the literature review presented in the next section, seven research hypotheses were defined. The following section offers details of the quantitative study that was conducted. Then, the results are presented. The final section of the article is dedicated to the conclusions, which include implications for managers and suggestions for future research.

Literature review

Sustainable consumer behavior is described as “actions that result in decreases in adverse environmental impacts as well as decreased utilization of natural resources across the lifecycle of the product, behavior, or service” (White *et al.*, 2019). Consumers are increasingly changing and guiding their consumption habits in response to the various environmental issues affecting society. One of the biggest concerns is the amount of packaging waste (Lindh *et al.*, 2016). Plastic is one of the most commonly used materials in food packaging and has a major drawback: it is an all-pervasive material that is at the center of criticism related to environmental pollution (Hawkins, 2018). Reducing packaging consumption contributes to a decrease in plastic production and waste (Zeiss, 2018; Lindh *et al.*, 2016; Rapp *et al.*, 2017), food waste (Fuentes *et al.*, 2019; Beitzel-Heineke *et al.*, 2017; Rapp *et al.*, 2017) and carbon dioxide emissions (Rapp *et al.*, 2017). As a result, packaging-free shopping has emerged as a new form of sustainable consumption (Rapp *et al.*, 2017).

The adaptation of the retail industry to this sustainable practice is two-fold. Packaging-free stores rely on selling only in bulk, making purchases depending on consumers’ own reusable packaging, or in simplified or reusable packaging sold by the store (Louis *et al.*, 2021). While the packaging-free store model is evolving, the food retail sector, in general, is gradually including more sustainable alternatives to food packaging, offering both pre-packaged and packaging-free products. Consumers are expected to reward companies that provide sustainable items such as packaging-free products (Rapp *et al.*, 2017), which meet the environmental dimension of CSR. The concept of CSR is based on Freeman’s stakeholder theory, which emphasizes and values the relationships established between a firm and its stakeholders (Freeman, 1984). Market orientation is found to foster CSR policies (Sundstrom *et al.*, 2020), which are widely acknowledged in the literature as key to a company’s success (Tran, 2022). Firms’ environmental practices are relevant to several stakeholders, including consumers, investors, NGOs, the media and the local community (Lång and Ivanova-Gongne, 2019). By becoming agents of change and good corporate citizens, companies generate positive consumer perceptions (Huang *et al.*, 2017), create positive brand experiences (Khan and Fatma, 2019), increase brand trust (Khan and Fatma, 2019) and foster customer loyalty (Du *et al.*, 2010; Huang *et al.*, 2017; Louis *et al.*, 2021; Khan and Fatma, 2019; Marín-García *et al.*, 2021; López-Pérez *et al.*, 2018).

Moreover, the literature unequivocally highlights the advantages of companies focusing on environmental practices. Environmental responsibility refers to the consciousness of organizations to not only meet their current needs but also protect the environment for future generations (Lin and Ho, 2011). Besides being motivated by preserving the environment for future generations, organizations focus on and implement environmentally sustainable practices for reasons such as improving reputation (Ren and Hussain, 2022; Bahta *et al.*, 2021), fostering customer loyalty (Justavino-Castillo *et al.*, 2022) and decrease costs, which ultimately will create competitive advantage (Karman and Savaneviciene, 2021) and enhance firm performance by increasing market share, profits and sales (Ren and Hussain, 2022). Companies that offer environmentally responsible products and processes may differentiate themselves from competitors and attract environmentally conscious consumers who make up a growing market segment. This group of consumers is particularly motivated to undertake environmentally friendly actions (Primc *et al.*, 2021), and they are more likely to choose products and services that align with their values. This article argues that one way for retail companies to meet this demand is by providing packaging-free products instead of their pre-packed alternatives.

The next sections explore the expected impacts of environmental sustainability practices on customer loyalty, considering the roles of customer satisfaction, brand image, trust and health consciousness.

Research hypotheses development

Customer loyalty. Oliver (1997) defined consumer loyalty as “a deeply held commitment to re-buy or re-patronize a preferred product or service consistently in the future (...) despite situational influences and marketing efforts having the potential to cause switching behavior” (p. 392). Customer loyalty is characterized by an intention to repurchase products or services combined with a positive attitude toward the brand (Yoo and Bai, 2013). Besides its expected impact on profitability (Louis *et al.*, 2021), long-lasting relationships with customers provide a competitive advantage that is difficult for competitors to understand, imitate and displace (Day, 2000). Loyalty is an asset for companies and is a central variable in business strategy and success, providing long-term competitive advantages.

The literature stresses the expected impact of CSR practices on customer loyalty (Du *et al.*, 2010; Huang *et al.*, 2017; Louis *et al.*, 2021; Khan and Fatma, 2019; Marín-García *et al.*, 2021; López-Pérez *et al.*, 2018). In particular, environmentally friendly sustainability practices stand out in their ability to foster customer loyalty (Justavino-Castillo *et al.*, 2022; Jung *et al.*, 2020; Tanveer *et al.*, 2021; Kim and Hall, 2020). For instance, Tanveer *et al.* (2021) argue that fostering the sustainability dimension of products and customer relationships is crucial to increase brand loyalty. In line with this, Louis *et al.* (2021) suggest that the sale of packaging-free products in grocery stores also creates customer loyalty. As the sale of packaging-free food products falls within the sustainable activities, it is expected that:

RH1. Packaging-free practices in food retail have a positive impact on customer loyalty.

Brand image. Brand image is the set of perceptions that consumers associate with a brand, whether reasoned or emotional (Low and Lamb, 2000). These perceptions reflect how customers see the company’s activities (Kang and James, 2004) and how the brand is represented in the minds of consumers when using a product/service or when confronted with the brand’s advertisements (Nguyen, 2021). It is generally accepted that a good brand image has positive consequences for companies. In fact, as explained by Almeida and Coelho (2019), a company can gain a variety of advantages from having a positive corporate image, including brand identification and recall, brand loyalty and a favorable reputation among competing companies.

Overall, brand image stands out for its positive impact on repurchasing behavior and customer loyalty (Tu and Chang, 2012), including in the food retail sector (Nguyen and Leblanc, 2001). In fact, food retail is marked by fierce rivalry and it has been suggested that consumers base their purchasing intentions largely on the brand image of the supermarket rather than the product itself (Zhang, 2015). Therefore, it is expected that:

RH2. Brand image has a positive impact on customer loyalty.

Brand image has also become increasingly important in the context of environmental sustainability practices (Lin *et al.*, 2017). Eco-friendly brand image, as defined by Chen (2010), refers to “a set of perceptions of a brand in a consumer’s mind that is linked to environmental commitments and environmental concerns” (p. 309). Extant literature has given little attention to the impact of brand image in the context of sustainability (Lin *et al.*, 2017). However, several empirical studies (e.g. Bashir *et al.*, 2020; Jung *et al.*, 2020; Lin *et al.*, 2017; Martinez, 2015) have suggested that a positive brand image is associated with companies that adopt sustainability practices, leading to higher levels of customer loyalty.

In line with these contributions, the literature also stresses that CSR practices in general are associated with positive values that meet the interests of stakeholders (Ramesh *et al.*, 2019; Lång and Ivanova-Gongne, 2019; Sundstrom *et al.*, 2020), several studies have demonstrated that CSR positively affects brand image (e.g. Zhang *et al.*, 2022; Flores-Hernández *et al.*, 2020; Moise *et al.*, 2018), including of supermarkets (Cuesta-Valiño *et al.*, 2019). In line with these findings, it is expected that the food products’ packaging-free practices also has a positive impact on brand image. Therefore, the following hypothesis is proposed:

RH3. Packaging-free practices in food retail have a positive impact on the retailer's brand image.

Brand trust. The concept of trust in the context of consumer behavior refers to the confidence customers have in a company to meet their expectations (Park *et al.*, 2014; Sichtmann, 2007) and fulfill their needs and desires with their offerings (Ebrahim, 2020). According to Chaudhuri and Holbrook (2001), brand trust is the "willingness of the average consumer to rely on the ability of the brand to perform its stated function" (p. 82). Similarly, and in the context of sustainability, Chen (2010) defined brand trust as the "willingness to depend on a product, service, or brand based on the belief or expectation resulting from its credibility, benevolence and ability about its environmental performance" (p. 312).

From a business perspective, trust plays a crucial role in developing exchange relationships, leading to customer commitment and loyalty (Mabkhot *et al.*, 2017; Morgan and Hunt, 1994). Extant literature in the field of consumer behavior shows that trusted brands are bought more frequently and generate a higher level of attitudinal commitment (Chaudhuri and Holbrook, 2001) and attitudinal loyalty (Chaudhuri and Holbrook, 2002). Studies on sustainability approaches to products and services further demonstrate the role of trust in consumer behavior (Bashir *et al.*, 2020; Chen, 2010), especially as a determinant of brand loyalty (Jung *et al.*, 2020; Martinez, 2015; Khan and Fatma, 2019). In line with these contributions, it is expected that:

RH4. Brand trust has a positive influence on customer loyalty.

Additionally, sustainability practices are often pointed out for their positive effect on brand trust. The literature demonstrates that companies that implement CSR policies are more likely to gain consumer trust in their goods or services (Lin *et al.*, 2011; Martínez García de Leaniz and Rodríguez-del-Bosque, 2013), particularly in the case of environmental practices (Kim *et al.*, 2021; Jung *et al.*, 2020). In line with these contributions, it is expected that:

RH5. Packaging-free practices in food retail have a positive impact on the retailer's brand trust.

Customer satisfaction. According to Oliver (1997), satisfaction is a "consumer's fulfillment response. It is a judgment that a product/service feature, or the product or service itself, provided a pleasurable level of consumption-related fulfillment." (p. 8). Overall, customer loyalty is explained by satisfaction (Zeithaml *et al.*, 1996), which is contingent upon the fulfillment of expectations (Parasuraman *et al.*, 1991). Thus, customer satisfaction can be viewed as a cumulative result of past and present customer experiences with the performance of a company's products and services (Tu and Chang, 2012). Hence, customer satisfaction is a key construct in understanding consumer behavior, including consumers' willingness to make a purchase, a company's reputation and customer loyalty (Saeidi *et al.*, 2015; Su *et al.*, 2016; Park, 2019; Yang *et al.*, 2019; Parasuraman *et al.*, 1991).

It is generally expected that customer satisfaction leads to higher levels of customer loyalty, while dissatisfied customers are more likely to move to another vendor (Kuusik and Varblane, 2009). Thus, companies with greater customer satisfaction have more loyal customers (Fornell *et al.*, 1996), including those in the food retail sector (Thomas, 2013; Loureiro *et al.*, 2014; Cuesta-Valiño *et al.*, 2019). Therefore, it is expected that:

RH6. Satisfaction has a positive impact on customer loyalty.

In general, customers tend to be more satisfied with products and services supplied by socially and environmentally responsible companies (He and Li, 2011; Lee, 2018). Consumers are not only interested in economic value but also with the social and environmental performance of the companies they do business with (Luo and Bhattacharya, 2006).

Previous studies have demonstrated that CSR policies positively impact customer satisfaction in various industries (Karagiannis and Andrinou, 2021), including grocery retail (Bellini *et al.*, 2021).

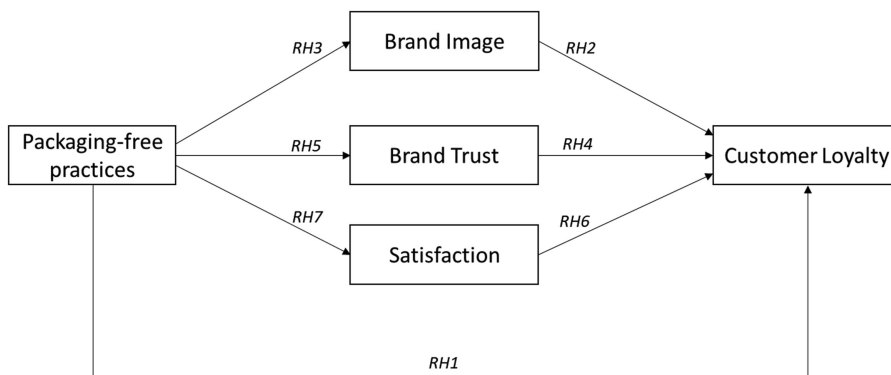
As satisfaction depends on the value that consumers perceive in specific products and services (Zeithaml *et al.*, 1988), it is also an important aspect in sustainability literature (Martinez, 2015; Jung *et al.*, 2020; Chen, 2010), given the value consumers place on environmental-friendly options (Saepudin *et al.*, 2023). Therefore, it is expected that the practice of offering packaging-free food products will have a positive impact on brand image. As such, the following hypothesis is proposed:

RH7. Packaging-free practices in food retail have a positive impact on customer satisfaction.

Mediation effects. Previous research has demonstrated that brand image (Koh *et al.*, 2022), trust (Chen and Li, 2021; Hong and Cha, 2013) and customer satisfaction (Caruana, 2002) can mediate consumer behavior. This study builds on previous literature and investigates the indirect effect of packaging-free practices on loyalty through brand image, customer satisfaction and trust, in addition to its direct impact. The mediation role of brand image, trust and satisfaction has been studied in the context of sustainability. Bashir *et al.* (2020) verified the mediating role of brand image in the relationship between functional benefits and perceived benefits with green brand preferences, trust, loyalty and corporate image. Ramesh *et al.* (2019) confirmed that brand image mediates the relationship between CSR practices and purchase intention. Chen (2010) found that green satisfaction and trust had mediation effects on the relationship between brand image and brand equity. In addition, Islam *et al.* (2021) and Martínez and Rodríguez del Bosque (2013) demonstrated that customer satisfaction and trust mediate the relationship between CSR practices and customer loyalty. In line with these contributions, the possible mediation effects inherent in the set of research hypotheses defined for this study were also analyzed. Figure 1 summarizes the research hypotheses defined in this study.

Method

To test the set of hypotheses defined above, a quantitative study was conducted among Portuguese adults who regularly purchase food products at supermarkets, using an online survey. Details of the adopted methodology are presented in the following sections.



Source(s): Figure created by author

Figure 1.
Conceptual model

Participants

This study's population comprises adult consumers who buy food products from supermarkets. The study was conducted in Portugal, using snowball sampling. The link to the online survey was initially disseminated among one of the authors' contacts, with a request to share the invitation with five other contacts of the target population. This non-probability sampling technique was used as an alternative to convenience sampling in order to increase the sample size and reach a more diverse group of participants who may not have been accessible through convenience sampling. Data was collected for 7 days (August 10–16, 2022). A total of 472 responses were obtained, of which 25 were excluded because they did not comply with the study population (i.e. excluded participants were less than 18 years old or did not purchase food from supermarkets). Thus, 447 valid responses were obtained.

As described in detail in [Table 1](#), most of the participants were young (56.2% were 25 or younger), women (62%), employed (58.8%) and held a bachelor's degree (44.1%). The

Participants' characteristics (N = 450)	Frequency	Percentage
<i>Gender</i>		
Male	172	38.2
Female	276	61.3
Other	3	0.4
<i>Age</i>		
18–25	249	55.3
26–35	52	11.6
36–45	46	10.2
46–55	74	16.4
56–65	26	5.8
Over 65	3	0.7
<i>Education level</i>		
Up to 9 school years	13	2.9
10–12 School years	124	27.6
Bachelor's Degree	199	44.2
Post-graduate	114	25.3
<i>Professional occupation</i>		
Self-Employed	59	13.1
Employee	262	58.2
Student	118	26.2
Retired, Unemployed, Working as a household or similar	11	2.4
<i>Purchase frequency of packaging-free food products</i>		
Never	12	2.7
Rarely	57	12.7
Occasionally	121	26.9
Very Frequently	160	35.6
Always	100	22.2
<i>Shopping frequency at the supermarkets</i>		
Less than once a month	7	1.6
Once a month	16	3.6
2–3 times a month	111	24.7
Once a week	228	50.7
2–3 times a week	69	15.3
More than 3 times a week	19	4.2
Total	450	100.0

Table 1.
Sample
characterization

Source(s): Table created by author

majority buy packaging-free food products very frequently (41.4%) and purchase at the supermarket of their preference at least once a week (50.3%).

Materials and measurements

Measurement scales previously developed and validated by extant studies were adapted for this study. Customer loyalty was measured using five items (e.g. “I shop at this supermarket as the first priority”) adapted from [Chen et al. \(2010\)](#). Satisfaction was measured using four items (e.g. “This supermarket meets my expectations”), adapted from [Cuesta-Valiño et al. \(2019\)](#). The brand image scale was adapted from [Martínez-Salinas and Pina-Pérez \(2009\)](#) and comprised six items (e.g. “The supermarket brand is nice”). The brand trust scale comprised six items (e.g. “This supermarket is a quality assurance”) adapted from [Munuera-Alemán et al. \(2003\)](#) and [Fatma et al. \(2015\)](#). In order to assess packaging-free practices in food retail, five items were developed for this study (i.e. “This supermarket is committed to the sale of packaging-free food products”; “This supermarket has greater offer of packaging-free food products compared to its competitors”; “This supermarket makes a clear effort to avoid prepacked foods”; “This supermarket stands out for the sale of packaging-free food products”; “This supermarket is a reference when it comes to packaging-free food products cause”). These items were validated by seven experts in sustainability and food retail, of which four were academics and three were practitioners. These experts confirmed that the set of items represented the level of commitment and implementation of packaging-free practices by a food retailer. All responses were obtained through a 5-point Likert scale ranging from total disagreement to totally agree, except for brand image, which adopted a 7-point Likert scale, to maintain consistency with the original measurement developed by [Martínez-Salinas and Pina-Pérez \(2009\)](#). Additionally, the study considered gender (male and female) and age (continuous variable) as control variables to ensure that the results of the empirical analysis are not influenced by variance with these demographic variables.

After adaptation, the items were translated into Portuguese language. To ensure the accuracy and reliability of this process, a forward-backward method was applied, sequentially involving two researchers and one professional translator. A pilot test was conducted with 10 consumers who confirmed the adequacy of the structure and clarity of questionnaire instructions and questions.

Statistical analysis techniques

In this study, the research measurement and structural models were examined using variance-based techniques assisted by SmartPLS (v.3.3.9), with a significance level of 99%. [Hair et al. \(2021a\)](#) recommend that the assessment of the measurement model includes the evaluation of outer loadings to assess each indicator’s reliability, composite reliability (CR) and Cronbach’s alpha (CA) to assess internal reliability, examining the average variance extracted (AVE) to assess convergent validity and analyzing the heterotrait-monotrait ratio of correlations (HTMT) to evaluate discriminant validity. These indicators were evaluated based on the following thresholds. Outer loadings greater than 0.7 indicate construct reliability ([Hair et al., 2021a](#)), still, items with outer loadings between 0.4 and 0.7 could be retained if loadings of the other items in the factor were higher than 0.7, and the indicators for CA, CR and AVE were above their thresholds ([Avkiran, 2018](#)). The minimum value recommended for AVE is 0.5 ([Fornell and Larcker, 1981](#); [Hair et al., 2011](#)) indicating convergent validity, while CA and CR equal or higher than 0.7 indicate construct reliability ([Bagozzi et al., 1991](#)). A HTMT ratio lower than 0.90 is suggested by [Henseler et al. \(2015\)](#) to confirm discriminant validity.

Following [Chin \(1998\)](#), [Hair et al. \(2021a\)](#) and [Sarstedt et al. \(2021\)](#), the structural model was assessed by evaluating multicollinearity, the coefficient of determination (R^2), Q^2 predictive

relevance, f^2 effect size and estimation of path coefficients. [Hair et al. \(2011\)](#) suggest that variance inflation factor (VIF) values higher than 5.0 were considered to indicate multicollinearity issues. According to [Cohen \(1988\)](#), values equal to or greater than 0.26, 0.13 and 0.02 indicate substantial, moderate and weak R^2 , respectively. Q^2 should be greater than zero to indicate the predictive relevance of the model ([Chin, 1998](#); [Dolce et al., 2017](#)) and f^2 effect size is considered small, medium and large for values greater than 0.02, 0.15 and 0.35, respectively ([Cohen, 1988](#)).

Results

In this study, the partial least squares structural equation modeling (PLS-SEM) technique (SmartPLS; v.3.2.9) was used to analyze the validity and reliability of the measurement model and evaluate the structural model. Additionally, the presence of common method bias (CMB) was evaluated using Harman’s single-factor test ([Podsakoff et al., 2012](#)). The result of the first component captured 46.41% of the total explained variance, which is acceptable and below the threshold of 50%. Therefore, CMB was not considered a concern in the present study.

Results of the measurement model

[Table 2](#) shows that all items exceeded the recommended cutoff of 0.50, except for item BIM3 (The products of the competitors are usually cheaper), which loaded below 0.50. According to [Hair et al. \(2021b\)](#), indicators with very low loadings should be eliminated from the measurement model. Therefore, BIM3 was excluded. CA (ranging from 0.837 to 0.944), CR (ranging from 0.835 to 0.942) and AVE (ranging from 0.505 to 0.766) are within the recommended values, indicating adequate consistency, reliability and convergent validity.

Discriminant validity was also confirmed, as the HTMT ratios were below 0.9, as shown in [Table 3](#).

Constructs	Items	Outer loadings	CA	CR	AVE
Brand Image	BIM1	0.823	0.867	0.867	0.567
	BIM2	0.756			
	BIM4	0.715			
	BIM5	0.659			
	BIM6	0.801			
Packaging-free practices	CSR1	0.959	0.946	0.945	0.774
	CSR2	0.899			
	CSR3	0.894			
	CSR4	0.795			
	CSR5	0.842			
Customer Loyalty	LOY2	0.798	0.810	0.808	0.585
	LOY3	0.749			
	LOY4	0.746			
Satisfaction	SAT1	0.927	0.901	0.901	0.752
	SAT2	0.834			
	SAT3	0.837			
Brand Trust	TRU1	0.862	0.938	0.938	0.717
	TRU2	0.858			
	TRU3	0.889			
	TRU4	0.848			
	TRU5	0.856			
	TRU6	0.762			

Table 2.
Measurement model
assessment

Note(s): CA = Cronbach Alpha; CR = Composite Reliability; AVE = Average Variance Extracted
Source(s): Table created by author

Given these results, the model was considered adequate for further analysis using structural equation modeling.

Results of the structural model

The consistent PLS bootstrapping resampling procedure using 5000 subsamples and the default settings (i.e. parallel processing, with no sign changes) was used to assess the path coefficients and their significance levels. VIF values ranging between 1.011 and 4.298 do not indicate multicollinearity issues in the model (Hair et al., 2011). Furthermore, considering the limit values suggested by Cohen (1988), the R² of the constructs is considered substantial for loyalty (0.673), brand image (0.286), satisfaction (0.280) and moderate for brand trust (0.219). Finally, Q² was greater than zero, which confirmed the predictive relevance of the model. A summary of the estimates obtained is presented in Table 4.

Direct effects

Most of the hypotheses defined in the research model are supported by the data, as summarized in Table 4. Regarding the control variables, the results indicate that although gender and age have a significant influence on brand image, satisfaction and trust, they do not appear to significantly affect customer loyalty.

The estimated impact of packaging-free practices on customer loyalty is statistically significant (RH1: β = 0.117, t = 2.114, p < 0.05). This result is in line with the literature suggesting that sustainable practices positively affect customer loyalty (Justavino-Castillo et al., 2022; Jung et al., 2020; Tanveer et al., 2021; Kim and Hall, 2020; Louis et al., 2021). These results are also in line with contributions indicating that general CSR practices foster customer loyalty (Du et al., 2010; Huang et al., 2017; Louis et al., 2021; Khan and Fatma, 2019; Marín-García et al., 2021; López-Pérez et al., 2018). Consequently, this study supports the research hypothesis RHL.

Constructs	Brand image	Packaging-free practices	Customer loyalty	Satisfaction
Brand Image				
Packaging-free practices	0.438			
Customer Loyalty	0.796	0.472		
Satisfaction	0.744	0.35	0.655	
Brand Trust	0.838	0.469	0.662	0.751

Table 3. Heterotrait-monotrait (HTMT) ratios

Source(s): Table created by author

Direct paths	Path coefficients	t-value	p-value	VIF	R2	Q2
RH1 Packaging-free practices → Loyalty	0.168	2.913	0.004	1.297	0.664	0.358
RH2 Brand Image → Loyalty	0.710	5.889	0.001	3.818		
RH4 Trust → Loyalty	-0.142	1.212	0.225	4.015		
RH6 Satisfaction → Loyalty	0.175	2.184	0.029	2.573		
RH3 Packaging-free practices → Brand Image	0.438	9.519	0.001	1.000	0.191	0.102
RH5 Packaging-free practices → Trust	0.471	10.535	0.001	1.000	0.222	0.149
RH7 Packaging-free practices → Satisfaction	0.353	7.722	0.001	1.000	0.124	0.086

Note(s): Variance Inflation Factor (VIF)

Source(s): Table created by author

Table 4. Structural model estimates

Packaging-free practices were also found to positively affect brand image (RH3: $\beta = 0.468$, $t = 10.768$, $p < 0.01$), brand trust (RH5: $\beta = 0.496$, $t = 11.442$, $p < 0.01$) and satisfaction (RH7: $\beta = 0.366$, $t = 8.512$, $p < 0.01$). Again, these findings are consistent with the literature demonstrating that CSR and sustainability practices have a positive effect on the brand image (Zhang *et al.*, 2022; Flores-Hernández *et al.*, 2020; Moise *et al.*, 2018; Cuesta-Valiño *et al.*, 2019; Jung *et al.*, 2020; Bashir *et al.*, 2020; Martinez, 2015), brand trust (Lin *et al.*, 2011; Martínez García de Leaniz and Rodríguez-del-Bosque, 2013; Kim *et al.*, 2021; Jung *et al.*, 2020) and customer satisfaction (Karagiannis and Andrinós, 2021; Bellini *et al.*, 2021; Martinez, 2015; Jung *et al.*, 2020; Chen, 2010).

Brand image (RH2: $\beta = 0.478$, $t = 4.211$, $p < 0.01$) and satisfaction (RH6: $\beta = 0.366$, $t = 4.940$, $p < 0.01$) were also confirmed to be important determinants of customer loyalty. These results are consistent with findings on the positive impact of brand image on customer loyalty in the food retail sector (Nguyen and Leblanc, 2001), as well as general contributions in the literature that point out customer satisfaction as a major determinant of customer loyalty (Saeidi *et al.*, 2015; Su *et al.*, 2016; Park, 2019; Fornell *et al.*, 1996; Loureiro *et al.*, 2014; Thomas, 2013; Yang *et al.*, 2019; Cuesta-Valiño *et al.*, 2019). Thus, hypotheses RH2 and RH6 were empirically supported by this study.

Nevertheless, the impact of brand trust on customer loyalty was not significant (H4: $\beta = -0.047$, $t = 0.453$, $p < 0.05$). Although trust is expected to positively affect loyalty, based on the widely accepted relationship between the two variables in the literature (Mabkhot *et al.*, 2017; Morgan and Hunt, 1994; Chaudhuri and Holbrook, 2001, 2002), it should be noted that other studies have found contradictory results. In particular, Chen *et al.* (2009) found a negative direct effect of customer trust on supermarket loyalty, although the total effects could be significantly positive if the mediation of other variables is considered (e.g. satisfaction). Chen *et al.* (2009) suggest that trust itself is not sufficient to increase customer loyalty. Additionally, as consumers generally have a high level of trust in supermarket brands (Loureiro *et al.*, 2014), this might offset the impact of trust on loyalty.

Following the guidelines of Cohen (1988), the effect size of packaging-free practices on customer loyalty (0.030) is considered small, while the effects of brand image and satisfaction on customer loyalty (0.162 and 0.148, respectively) are medium. Additionally, the effect of packaging-free practices on brand image (0.303), trust (0.337) and satisfaction (0.170) is also considered medium.

Indirect effects

Since packaging-free practices impact both loyalty and three of its suggested determinants (brand image, brand trust and satisfaction) in the research model, a comprehensive evaluation the effect on loyalty should include an analysis of the underlying indirect effects (Table 5).

The indirect effects of packaging-free practices on loyalty through brand image ($\beta = 0.224$, $t = 3.725$, $p < 0.01$) and satisfaction ($\beta = 0.134$, $t = 4.115$, $p < 0.01$) were statistically significant. The findings are consistent with previous studies

Indirect paths	Path coefficients	t-value	p-value
Packaging-free practices → Brand Image → Loyalty	0.310	4.710	0.001
Packaging-free practices → Satisfaction → Loyalty	0.062	2.075	0.038
Packaging-free practices → Trust → Loyalty	-0.067	1.212	0.226

Table 5.
Indirect effects

Source(s): Table created by author

(Bashir *et al.*, 2020; Islam *et al.*, 2021; Martínez and Rodríguez del Bosque, 2013; Ramesh *et al.*, 2019). However, the indirect effects of packaging-free practices on loyalty through brand trust ($\beta = -0.023$, $t = 0.454$, $p > 0.05$) are not statistically significant, contradicting the findings by Islam *et al.* (2021) and Martínez and Rodríguez del Bosque (2013). This is due to the insignificant direct effect of brand trust on customer loyalty (H4) discussed above. Hence, it can be concluded that, based on the conceptual model defined for this article, packaging-free practices in food retail positively affect loyalty both directly and through brand image and satisfaction.

Conclusion

This study extends the literature on the effects of sustainable practices on customer loyalty, by focusing on the packaging-free food products made available by food retail stores. While new business models such as plastic-free and bring-your-container stores are slowly being introduced in food retail and grocery markets, general stores such as supermarkets usually offer both packaged and packaging-free food products. The latter can be increased to correspond to the growing preferences of consumers for more sustainable products and as an environmental practice included in their environmental commitments. This study explored the impacts of such practices on customer loyalty, an essential asset in a sector strongly marked by competition.

Theoretical contribution

This article contributes to ongoing discussions on the outcomes of integrating sustainability practices into business management strategies and models. It provides empirical support for the relevance of sustainability and CSR activities in fostering consumer relationships, particularly by increasing customer loyalty in the food retail sector. Although loyalty is acknowledged as a relevant outcome of CSR (Du *et al.*, 2010; Huang *et al.*, 2017; Louis *et al.*, 2021; Khan and Fatma, 2019; Marín-García *et al.*, 2021; López-Pérez *et al.*, 2018) and sustainability practices (Justavino-Castillo *et al.*, 2022; Jung *et al.*, 2020; Tanveer *et al.*, 2021; Kim and Hall, 2020; Louis *et al.*, 2021), this research demonstrates the particular relevance of one sustainability practice, the availability of packaging-free food products, fostering customer loyalty in the food retail sector. Therefore, this study offers new insights into the effect of sustainability activities, particularly operational practices at the point of sale, which expands and deepens the field of study.

This article adds to the existing literature on sustainability by examining the direct and indirect effects of packaging-free practices in food retail on customer loyalty. To the best of the authors' knowledge, prior research has not investigated the mediating role of brand image, satisfaction and trust in the relationship between packaging-free practices and customer loyalty. Furthermore, the literature on packaging-free retail tends to focus on consumer behavior toward retail stores that implement the packaging-free business model (Fuentes *et al.*, 2019). However, this study demonstrates that the two research streams can be connected and that the incremental adoption of this practice by general retail stores can also address consumers' needs and foster loyalty.

This study also contributes to the discussion on the impact of brand trust on customer loyalty. While some studies suggest that the impact of brand trust on loyalty may not be straightforward (Chen *et al.*, 2009), our findings emphasize that this relationship may be moderated by specific contexts, including sectors with high competition (Pinto *et al.*, 2022; Ruiz-Molina *et al.*, 2017; Loureiro *et al.*, 2014; Nettet *et al.*, 2021) and high levels brand trust towards the major players in the industry (Loureiro *et al.*, 2014).

Implications for managers

The current study highlighted the important role of sustainability practices in the retail industry. Food retail is marked by intense rivalry (Pinto *et al.*, 2022; Ruiz-Molina *et al.*, 2017; Loureiro *et al.*, 2014) and major efforts in loyalty programs (Bies *et al.*, 2021; Steinhoff and Zondag, 2021; Nettet *et al.*, 2021). In such a demanding context, this article provides valuable insights for retail managers, as it demonstrates that integrating sustainability in operational activities such as the types of products (pre-packaged and packaging-free) that are available in stores can help foster customer loyalty.

While packaging-free stores proliferate as a relevant business model (Fuentes *et al.*, 2019), an incremental introduction of packaging-free food products and avoidance of pre-packaged alternatives should be considered as sustainability practices, namely as part of the CSR policies. Ultimately, it may provide considerable advantages for the retail brand in terms of brand image, satisfaction and customer loyalty.

Moreover, this study emphasizes the significance of considering the management of the point of purchase when implementing CSR policies and environmental-friendly practices, as it can significantly impact brand benefits. Furthermore, it is recommended that the commitment to offering packaging-free food in retail stores be effectively communicated, so that the connection to sustainability and the company's commitment to this sustainable practice is clearly conveyed. This type of communication is anticipated to raise customers' awareness of intentional efforts to reduce packaging in food retail, ultimately benefiting brand image and loyalty.

The findings regarding the mediating effect of brand image and satisfaction between packaging-free food practices and loyalty underscore the crucial role of brand image and satisfaction in fostering customer loyalty in the retail industry. Therefore, retailers could adopt effective ways to promote their environmental practices, such as packaging-free initiatives, to create a sustainable brand image and increase customer satisfaction, ultimately enhancing customer loyalty.

Limitations and future research directions

This study is not without limitations. This study adopted a non-probabilistic sampling method and the majority of participants were between the ages of 18 and 25. To improve the applicability of the study's findings, it would be beneficial to include participants from a more diverse range of age groups in future research. Comparisons of different geographical and cultural settings and between developed and developing countries are also recommended. Additionally, the personal characteristics (e.g. personal values, environmental, health concerns) are frequently studied in the context of sustainability consumption and could also be considered in future studies. Likewise, this study did not consider actual purchase behaviors, which are recommended for future research.

The results of this study showed that brand trust did not have a significant impact on customer loyalty. Given the strategic significance of trust for managers, future works could further explore the factors that moderate the impact of trust on customer loyalty.

Overall, other sustainability practices should also be the focus of future research to expand knowledge in this field of research. Some interesting topics include the availability of fair-trade products in general retail stores, plastic-free policies and carbon-print reductions in-store offers. On the other hand, the prevalence of pre-packaged products in the food retail industry should also be examined, specifically in relation to potential negative impacts on brand image and point of sale success factors. Further research in this area could provide valuable insights.

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