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Inspiring green choices: the influence of restaurant social responsibility on sustainable consumer habits

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ABSTRACT

Reducing restaurant food waste depends on active consumer involvement, yet its psychological drivers remain underexplored. This study investigates how perceived restaurant social responsibility shapes consumer attitudes and ethical intentions toward food waste reduction, based on a survey of 246 restaurant consumers in Northern Cyprus. The results show that perceived consumer effectiveness fully mediates the CSR–attitude relationship, while trust shows no indirect effect and socially responsible consumption does not moderate the attitude–intention link. These findings highlight empowering consumers’ perceived impact, advancing understanding of food waste reduction, and offering actionable insights for restaurants and policymakers to promote sustainable consumption.

KEYWORDS

Consumer behavior; consumer trust; perceived consumer effectiveness; perceived CSR; sustainable food consumption

Introduction

Food loss and waste have emerged as pressing global concerns, given their far-reaching social, environmental, and economic consequences. Within this broader challenge, food waste generated at the consumption stage has drawn increasing attention, as it reflects not only inefficiencies in food systems but also unsustainable consumer behaviors. Among these, restaurant food waste poses a significant threat to environmental sustainability, with consumer plate waste accounting for a substantial portion of the total food waste generated in foodservice settings.

Although a growing body of literature has quantified food waste volumes and identified operational causes, understanding consumer-related drivers of food waste remains comparatively underdeveloped. Existing studies have primarily focused on measuring food waste volumes, identifying causes, and proposing prevention strategies. However, a clear understanding of what shapes consumers’ attitudes and behavioral intentions toward food waste,

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especially in restaurant contexts, remains limited (Alsuwaidi et al., 2022; Lizcano-Prada et al., 2025; Mansouri & Kaswengi, 2025).

Addressing this gap is particularly important because restaurants constitute a unique consumption environment in which consumers' decisions are influenced not only by personal values but also by firm-level practices and signals. Accordingly, this study focuses on how consumers' perceptions of corporate social responsibility (CSR) influence consumer trust, perceived consumer effectiveness, attitudes, and ethical behavioral intentions toward food waste reduction in restaurants.

Previous research on food waste spans several areas, including the types and quantities of food lost (Silvennoinen et al., 2015), the economic costs associated with waste (Principato et al., 2018), prevention strategies (Huang et al., 2021; Sirieix et al., 2017), and factors influencing consumer food waste (Roodhuyzen et al., 2017). While these studies provide an important foundation, only a limited number directly address consumer-level psychological mechanisms relevant to food waste in restaurants. Although scholars have distinguished between in-home and out-of-home food waste (Principato et al., 2021), the hospitality literature still offers limited insight into how consumers form attitudes and ethical behavioral intentions regarding food waste when dining out (Coşkun & Özbük, 2020; Sirieix et al., 2017).

Recent research further highlights the need for empirical models that explain how consumers interpret and respond to firm-level sustainability cues in dining contexts (Huang et al., 2021; Principato et al., 2018). In line with this need, the present study aligns with the United Nations Sustainable Development Goal 12 (Responsible Consumption and Production), particularly Target 12.3, which emphasizes reducing food waste at both the consumer and foodservice levels through more sustainable consumption practices.

While prior studies have examined links between perceived CSR and consumer behavior (Kulshreshtha et al., 2019; Su et al., 2017), few have explored how CSR perceptions translate into food waste mitigation in the restaurant sector (Chen & Jai, 2018). This gap suggests the need for a theoretically grounded framework that explains how CSR-related cues influence consumers' internal evaluations and ethical decision-making processes in food consumption settings.

To achieve this, the present study integrates Carroll's (1991) CSR pyramid, signaling theory, and the theory of ethical consumer intention formation. These theories are combined because they offer complementary yet distinct explanatory lenses. Carroll's CSR pyramid provides a structured framework to conceptualize the multidimensional nature of firms' social responsibilities; signaling theory explains how CSR initiatives function as observable cues that reduce information asymmetry and build trust; and the theory of ethical consumer intention formation clarifies how moral evaluations are translated into ethical behavioral intentions.

Together, these perspectives allow for a more comprehensive explanation of how CSR perceptions influence trust, perceived consumer effectiveness, attitudes, and ethical behavioral intentions toward food waste reduction. Consistent with Rolker et al. (2025), integrating multiple theoretical frameworks enables a deeper understanding of complex food waste behaviors.

Carroll's model is adopted because it systematically captures the multi-dimensional nature of CSR, allowing for a nuanced examination of how specific CSR dimensions differently influence consumer responses (Boronat-Navarro & Pérez-Aranda, 2019). Maignan (2001) defined consumer perceptions of CSR as their ability to differentiate between a company's economic, legal, ethical, and philanthropic responsibilities. Consumers increasingly value socially responsible practices (Fatma et al., 2015), motivating organizations to implement CSR initiatives. Acar et al. (2019) provide evidence that sustainability practices in foodservice yield positive financial returns, while Jang (2016) highlight improvements in firm efficiency and environmental outcomes, reinforcing the economic rationale behind CSR. Building on this foundation, the current study examines how the four CSR dimensions (economic, legal, ethical, and philanthropic) affect consumer trust (CT), perceived consumer effectiveness (PCE), attitudes (ATT), and ethical behavioral intention (EBI) toward food waste in the restaurant sector of Turkish Republic of Northern Cyprus.

PCE refers to the belief that individual efforts can make a difference (Ellen et al., 1991). Ettinger et al. (2021) show that PCE mediates the relationship between CSR communication and consumer attitudes and intentions. This study posits that PCE may also mediate the relationship between perceived CSR and consumer attitudes toward reducing food waste. The role of CT in mediating the CSR-consumer behavior relationship remains under-researched, particularly in service settings (Dang et al., 2020 ; Rehman et al., 2022). Given restaurants' strong influence on public health and sustainability, CSR practices that promote ethical responsibility are expected to enhance consumer trust (Rhou et al., 2016). Atzori et al. (2018) indicate that Millennials are especially sensitive to visible sustainability efforts, using these cues to assess brand credibility, thereby reinforcing the relevance of examining generational differences.

By employing signaling and ethical consumer intention formation theories, this study conceptualizes CSR actions as signals that shape consumer trust and perceived effectiveness, ultimately influencing attitudes and ethical behavioral intentions.

In this study, SRC is examined as a moderator, responding to calls for further research into its role in shaping the attitude-behavior link (Ladhari & Tchegna, 2017; Pauluzzo & Mason, 2022). Given the dynamic nature of consumer behavior within service industries (Palacios-González & Chamorro-Mera, 2020), this investigation offers valuable insights into how SRC

moderates consumer responses to food waste in the Mediterranean region, where cultural and contextual factors may elicit distinct consumer reactions. Furthermore, Choi and Seo (2024) caution against a “CSR halo” effect that may backfire if a crisis emerges; brands perceived as socially responsible may experience greater reputational damage during severe crises, underscoring the importance of authenticity and consistency in CSR communications.

Accordingly, the primary objective of this study is to examine how consumers’ perceptions of restaurant corporate social responsibility influence consumer trust, perceived consumer effectiveness, attitudes, and ethical behavioral intentions toward food waste reduction. In addition, the study investigates the mediating roles of consumer trust and perceived consumer effectiveness in these relationships, as well as the moderating role of socially responsible consumption in the attitude – intention link.

To achieve these objectives, the study adopts a quantitative research design and employs a survey-based methodology. Data were collected from restaurant consumers in Northern Cyprus and analyzed using partial least squares structural equation modeling (PLS-SEM) to test the proposed research model and hypotheses.

The remainder of the paper is organized as follows. The next section reviews the relevant literature and develops the study’s hypotheses. This is followed by a description of the research methodology and presentation of the empirical results. The final sections discuss the findings, outline theoretical and practical implications, and suggest directions for future research.

Literature review

Theoretical background

Restaurant food waste and ethical consumption

Food loss has received increasing attention from policymakers and academics worldwide due to its substantial environmental, social, and economic consequences. Concerns related to resource scarcity and greenhouse emissions have propelled food waste to the forefront of sustainability discourse. Despite this growing attention, consumer food waste remains a complex and evolving research area, with ongoing debate regarding the factors that drive waste-related behavior (Papargyropoulou et al., 2016; Secondi et al., 2015). Prior studies suggest that food waste results from multiple interacting behavioral and contextual factors, making it difficult to address through a uniform approach (Papargyropoulou et al., 2014; Quedsted et al., 2013). Accordingly, understanding food waste behavior requires attention to situational contexts, individual knowledge and beliefs, ethical evaluations, and perceived responsibility, particularly in consumption settings such as restaurants.

To examine consumers' ethical behavioral intentions toward restaurant food waste reduction, this study adopts an integrated theoretical perspective grounded in ethical consumer decision-making rather than relying on a single behavioral model. Food waste behavior in restaurant settings involves moral judgment, perceived responsibility, and evaluations of organizational conduct, which require a framework capable of capturing both ethical motivation and contextual cues. Accordingly, this study draws on Carroll's CSR framework to conceptualize consumers' evaluations of restaurant responsibility, the theory of ethical consumer intention formation to explain how these evaluations translate into ethical attitudes and intentions and signaling theory to clarify how CSR practices are communicated and interpreted by consumers. Viewed collectively, these perspectives provide a coherent foundation for understanding why and how perceived restaurant responsibility shapes consumer responses to food waste.

Carroll's corporate social responsibility framework

Building on this integrated perspective, the present study operationalizes consumers' evaluations of restaurant social responsibility using Carroll's CSR pyramid. This framework allows for a multidimensional assessment of restaurant responsibility by capturing perceptions of economic performance, legal compliance, ethical conduct, and philanthropic engagement. These dimensions shape consumers' judgments about whether restaurants behave responsibly toward society and the environment, including their commitment to food waste reduction.

Carroll (1991) frames corporate social responsibility as comprising four distinct yet interrelated dimensions. Economic CSR denotes a "company's obligation to maintain profitability and financial sustainability," hence securing its long-term existence. In the context of restaurants, this encompasses efficient operations, ethical sourcing, and economical waste reduction strategies. Legal CSR involves "compliance with laws and regulations, encompassing food safety requirements, labor policies, and environmental restrictions." Compliance illustrates a restaurant's dedication to functioning within the parameters of society norms. Ethical CSR beyond legal obligations, encompassing "voluntary initiatives that embody justice, integrity, and ethical behavior such as transparent communication, responsible marketing, and ecologically sustainable purchasing choices." Philanthropic CSR pertains to "voluntary donations that enhance social welfare, including community involvement, food distribution projects, and sustainability efforts" (pp. 40–42). Distinguishing these factors is crucial as each may distinctly affect consumer views of a restaurant's overall social responsibility and therefore influence trust, perceived consumer effectiveness, and attitudes toward food waste reduction.

Ethical consumer intention formation theory

While Carroll's CSR framework explains how consumers evaluate restaurant responsibility, it does not fully explain how these evaluations translate into ethical attitudes and behavioral intentions. To address this gap, the present study adopts ethical consumer intention formation theory, which emphasizes moral self-concept, ethical evaluation, and perceived agency in consumer decision-making. In the context of food waste, consumers' intentions are shaped not only by favorable perceptions of responsible restaurants but also by the belief that their individual actions can meaningfully contribute to social and environmental outcomes (Sun, 2020). Accordingly, perceived consumer effectiveness represents a central psychological mechanism through which CSR perceptions influence attitudes toward food waste reduction and subsequent ethical behavioral intentions.

Consumers' ethical choices can take various forms; however, they are generally reflected in preferences for products or brands that embody specific ethical attributes or align with moral values related to human rights, environmental protection, and animal welfare (Bray et al., 2011; Lewis & Potter, 2011; Prothero et al., 2011). It is commonly assumed that consumers' preferences for ethical options translate into behavioral intentions. Accordingly, intention formation plays a central role in ethical decision-making related to consumption choices (Papaoikonomou et al., 2011).

Signaling theory and CSR communication

Signaling theory explains how information is communicated under conditions of uncertainty (Spence, 1978). Senders use various cues to influence individuals' interpretations, decision-making processes, and behavioral intentions (Wells et al., 2011). In business and marketing contexts, signaling theory has been widely applied to illustrate how organizations communicate information about product and service quality to reduce consumer uncertainty (Li et al., 2015). Prior studies show that signals such as store settings (Bloom & Reve, 1990), warranties (Balachander, 2001), and brand-related cues (Pecot et al., 2018) can meaningfully shape consumer attitudes, preferences, and behavior. For example, positive brand signals have been shown to enhance perceptions of corporate reputation (Celani & Singh, 2011), while quality signals in online retail environments can improve financial performance and increase consumers' willingness to pay a price premium (Li et al., 2015; Pecot et al., 2018).

In the context of corporate social responsibility, signaling theory explains how firms' CSR activities function as observable cues that communicate ethical orientation and societal commitment to consumers (Pecot et al., 2018). As consumers increasingly attend to companies' socially responsible actions, clear communication of CSR initiatives can strengthen corporate reputation and foster consumer trust (Öberseder et al., 2014). In restaurant settings, communicating CSR practices related to food waste reduction signals

a commitment to social welfare, which not only enhances consumer trust but also strengthens consumers' beliefs that their own consumption choices can contribute to positive environmental and social outcomes (Vlachos et al., 2009). However, inconsistent CSR communication may undermine these effects; for instance, inconsistent CSR reporting across quick-service brands has been shown to weaken consumer trust (Lee, 2020).

Integrated theoretical framework

Taken together, Carroll's corporate social responsibility framework defines the ethical substance through which consumers evaluate restaurants' responsibilities, while ethical consumer intention formation theory explains the psychological mechanisms, particularly moral evaluation and perceived consumer effectiveness, through which these evaluations shape attitudes toward food waste reduction. Signaling theory further clarifies how CSR practices function as observable cues that communicate ethical orientation and societal commitment under conditions of information asymmetry. This integrated theoretical framework provides a coherent foundation for the proposed conceptual model and supports the examination of how perceived restaurant responsibility influences consumer attitudes and ethical behavioral intentions related to food waste reduction.

Hypothesis development and research model

Building on the integrated theoretical framework outlined above, this study examines how consumers' perceptions of restaurant CSR shape key psychological responses and ethical behavioral intentions related to food waste reduction. Prior research suggests that CSR perceptions influence consumer evaluations not only by signaling organizational values and responsibility but also by shaping relational and motivational outcomes such as trust and perceived consumer effectiveness (Gupta & Agrawal, 2018; Manuel & Herron, 2020). In service contexts such as restaurants, where ethical practices related to food waste are not directly observable, CSR serves as an important basis upon which consumers assess a firm's societal commitment and form expectations regarding its conduct (Ben Youssef et al., 2018; Quazi et al., 2016).

Consistent with Carroll's conceptualization of CSR, such initiatives reflect a firm's broader obligations to society and can influence consumers' social awareness and behavioral orientations (Ajina et al., 2019; Srinaruewan et al., 2015). Extant studies further indicate that effective CSR engagement can strengthen relational outcomes and contribute to both social and economic performance (Manuel & Herron, 2020; Minor & Morgan, 2011). Accordingly, in the context of restaurant food waste reduction, CSR perceptions are expected to play a central role in shaping consumer trust, perceived consumer

effectiveness, and attitudes, which in turn inform ethical behavioral intentions. The hypothesized relationships among these constructs are presented in the proposed research model.

CSR and attitude

Consumer attitude reflects an individual's overall evaluative judgment toward a brand (Wan et al., 2022) and plays a key role in shaping consumer responses to firms' actions (Goh & Balaji, 2016). Prior research indicates that CSR can directly influence consumer attitudes by fostering perceptions of ethical alignment and value congruence between firms and consumers. In the restaurant context, CSR initiatives perceived as authentic and consistent with a restaurant's brand characteristics strengthen positive consumer attitudes, whereas perceptions of misalignment or symbolic engagement weaken these effects (Lee et al., 2023).

Beyond relational mechanisms such as trust, CSR has been widely recognized as an important determinant of consumer attitudes, as organizations actively engaging in socially responsible practices tend to benefit from more favorable evaluations (Bhattacharya & Sen, 2004; Groza et al., 2011). Accordingly, consumers' perceptions of restaurant CSR are expected to positively influence their attitudes toward the restaurant.

H1: Consumers' perceptions of restaurant CSR positively influence their attitudes toward restaurant food waste reduction.

CSR and Trust

Trust refers to consumers' beliefs that a firm acts in a reliable, ethical, and responsible manner (Pavlou & Fygenson, 2006). In service contexts such as restaurants where ethical practices related to food waste reduction are not directly observable, trust plays a critical role in shaping consumer responses. Prior research suggests that corporate social responsibility (CSR) contributes to trust formation by signaling a firm's commitment to long-term societal and environmental well-being beyond short-term economic objectives (Pavlou & Chai, 2002; Viktoria Rampl et al., 2012).

Empirical evidence consistently demonstrates a positive relationship between perceived CSR and consumer trust. For example, Lacey and Kennett-Hensel (2010) report a significant association between CSR perceptions and trust, while subsequent studies confirm that socially responsible practices enhance consumer trust across hospitality and service settings (Fatma et al., 2015; Kang & Hustvedt, 2014; Mombeuil & Fotiadis, 2017). In the restaurant context, CSR initiatives have been shown to strengthen trust by reinforcing perceptions of sincerity and responsible conduct (Hanks & Mattila, 2016). More recent research further indicates that perceived CSR sincerity directly

enhances customer trust, highlighting trust as a key psychological mechanism through which CSR exerts its effects (Ghaderi et al., 2025). Accordingly, consumers' perceptions of restaurant CSR are expected to positively influence their trust in the restaurant.

H2a: Consumers' perceptions of restaurant CSR positively influence consumer trust.

Trust and attitude

Prior research indicates that consumer attitudes are strongly influenced by the degree of trust consumers place in firms, particularly in contexts characterized by uncertainty and limited direct information (Stern, 2008). Consumers' evaluations are shaped by the information available to them, the trust they place in such information including the opinions of others and their overall impressions of organizational practices and capabilities (Tilt, 2016). Trust reduces perceived risk and strengthens positive expectations regarding firm conduct, thereby fostering more favorable attitudinal judgments (Alsajjan & Dennis, 2010; Gefen et al., 2003).

Empirical evidence consistently supports the role of trust as a key antecedent of consumer attitudes across service and consumption contexts (Al-Debei et al., 2015; Ha, 2020; Kaushik et al., 2020). In the restaurant context where internal food waste reduction practices are not directly observable consumer trust is therefore expected to positively influence attitudes toward restaurants' food waste reduction efforts.

H2b: Consumer trust positively influences attitudes toward restaurant food waste reduction.

Mediating role of trust

Recent research suggests that trust functions as a key psychological mechanism through which CSR influences consumer evaluations. Empirical evidence indicates that CSR perceptions enhance consumer trust, which in turn shapes downstream attitudinal and behavioral responses. For example, Ali et al. (2023) reveal that trust mediates the relationship between CSR activities and consumer purchase intentions, while Fatma et al. (2021) show that trust plays a central mediating role in translating CSR engagement into favorable consumer responses. Collectively, these findings suggest that trust serves as an important intermediary through which perceived restaurant CSR influences consumer attitudes. Accordingly, consumer trust is expected to mediate the relationship between consumers' perceptions of restaurant CSR and their attitudes toward the restaurant.

H2: Consumer trust mediates the relationship between consumers' perceptions of restaurant CSR and their attitudes toward restaurant food waste reduction.

CSR and PCE

Perceived consumer effectiveness refers to individuals' beliefs that their actions can meaningfully contribute to addressing social and environmental problems (Ellen et al., 1991). Although initially conceptualized as part of environmental attitudes, PCE has been shown to be a reliable predictor of environmentally conscious and ethical consumption behaviors (Yadav & Pathak, 2016; Zhao et al., 2014) and is increasingly viewed as an evaluative self-assessment reflecting individuals' perceived capacity to effect change through consumption choices (Cheng et al., 2020). Recent evidence further suggests that PCE plays a critical role in translating ethical concerns into pro-environmental intentions, particularly in contexts where individual consumers operate under structural and institutional constraints (Naaman et al., 2025). CSR initiatives can strengthen PCE by reinforcing consumers' beliefs that their purchasing decisions support socially responsible outcomes. When CSR information is perceived as authentic and credible, consumers are more likely to internalize it and perceive their actions as effective and socially meaningful (Berens et al., 2005; Marin et al., 2009). Accordingly, consumers' perceptions of restaurant CSR are expected to positively influence their perceived consumer effectiveness.

H3a: Consumers' perceptions of restaurant CSR positively influence perceived consumer effectiveness.

PCE and attitude

PCE has been widely linked to consumers' ethical and environmental concerns and plays an important role in shaping evaluative judgments toward firms and brands (Antonetti & Maklan, 2015; Rivera et al., 2016). Consumers who believe that their actions can contribute to positive societal outcomes are more likely to develop favorable attitudes toward organizations whose practices align with these values. In the context of socially responsible consumption, higher levels of PCE strengthen positive attitudinal responses toward firms perceived as ethical and environmentally responsible (Antonetti & Maklan, 2015). Accordingly, consumers with higher perceived consumer effectiveness are expected to hold more favorable attitudes toward restaurants' food waste reduction efforts.

H3b: Perceived consumer effectiveness positively influences attitudes toward restaurant food waste reduction.

Mediating role of PCE

Prior research suggests that PCE can function as a psychological mechanism linking organizational responsibility to consumer evaluations. CSR initiatives may enhance consumers' beliefs in their own ability to effect change, which in turn shapes favorable attitudinal responses toward responsible firms. Empirical evidence in ethical and sustainable consumption contexts indicates that PCE acts as an intermediary variable connecting CSR-related perceptions to attitudinal outcomes (Antonetti & Maklan, 2015; Rivera et al., 2016). When considered jointly, these findings suggest that PCE mediates the relationship between perceived restaurant CSR and consumer attitudes toward food waste reduction.

H3: Perceived consumer effectiveness mediates the relationship between consumers' perceptions of restaurant CSR and their attitudes toward food waste reduction.

Attitude and ethical behavioral intention

Ethical consumer intention formation theory emphasizes the central role of attitudes in shaping consumers' ethical behavioral intentions. In the context of food waste reduction, empirical evidence consistently indicates that favorable environmental and ethical attitudes are strongly associated with intentions to engage in pro-environmental and waste-reducing behaviors (Filimonau et al., 2020). A substantial body of food waste research further supports this relationship, showing that consumer attitudes are a key antecedent of intentions to reduce food waste across household and consumption settings (Abeliotis et al., 2014; Mallinson et al., 2016; Marangon et al., 2014; Parizeau et al., 2015; Silvennoinen et al., 2014; Williams et al., 2012; Zhang et al., 2018). Studies drawing on extended behavioral models similarly reveal that attitudes significantly predict intentions to mitigate food waste (Graham-Rowe et al., 2015; Russell et al., 2017), and recent research highlights the importance of strengthening consumer attitudes to promote waste-reduction intentions (Aktas et al., 2018; Djekic et al., 2019; Mattar et al., 2018). Collectively, these findings indicate that positive attitudes toward food waste reduction translate into stronger ethical behavioral intentions.

H4: Attitudes toward food waste reduction positively influence ethical behavioral intention towards food waste.

Moderating the role of socially responsible consumption (SRC)

Customers who care about ecological and social issues are more likely to seek out products and services with minimal negative consequences for society and the environment (Webb et al., 2008). Mohr et al. (2001) define socially responsible consumption as the acquisition, use, and

disposal of products with the intention of minimizing harmful effects and maximizing long-term benefits for society. Similarly, Johnson and Chattaraman (2019) conceptualize SRC as the consideration of societal and environmental impacts across all stages of the consumption process. Collectively, SRC reflects the extent to which consumers are concerned about the broader social and environmental consequences of their consumption behaviors.

In the literature, SRC has been discussed under related concepts such as environmentally responsible consumption (Agrawal & Gupta, 2018; Gupta & Agrawal, 2018; Khare, 2014; Singh & Gupta, 2013), green consumption (Haws et al., 2014; Jaiswal & Singh, 2018; Kumar & Ghodeswar, 2015; Manaktola & Jauhari, 2007; Nath et al., 2013; Nguyen et al., 2019; Paul et al., 2016; Verma & Chandra, 2018; Yadav & Pathak, 2017), and ethical consumption (Hassan et al., 2016; Megicks et al., 2008; Sudbury-Riley & Kohlbacher, 2016). Prior studies suggest that SRC can play a moderating role in shaping pro-environmental behaviors by strengthening or weakening the translation of attitudes into behavioral intentions (Grimmer & Woolley, 2014; Kollmuss & Agyeman, 2002). Consumers who perceive themselves as socially responsible are more likely to act in environmentally friendly ways (Chen & Jai, 2018). Recent empirical evidence further indicates that socially responsible consumption attitudes function as a boundary condition that influences how strongly favorable attitudes are converted into sustainable behavioral intentions (Çam et al., 2025). Specifically, in the context of food waste reduction, favorable attitudes toward waste mitigation do not automatically lead to ethical behavioral intentions. The strength of this translation depends on consumers' underlying value systems and their motivation to behave consistently with their social and environmental concerns. Consumers with a high level of socially responsible consumption are more likely to perceive ethical behavior as part of their self-identity and moral obligation. As a result, when such consumers hold positive attitudes toward food waste reduction, they are more inclined to convert these attitudes into concrete ethical intentions (Çam et al., 2025). In contrast, consumers with lower levels of socially responsible consumption may hold favorable attitudes but lack the motivational commitment to act upon them, weakening the attitude – intention relationship.

Accordingly, socially responsible consumption is expected to function as a boundary condition that conditions the strength of the relationship between attitudes toward food waste reduction and ethical behavioral intention. When socially responsible consumption is high, the positive effect of attitudes on ethical behavioral intention should be stronger, whereas when socially responsible consumption is low, this relationship is expected to be weaker. Thus, the following hypothesis is proposed.

H5: Socially responsible consumption moderates the relationship between attitudes toward food waste reduction and ethical behavioral intention towards food waste.

Based on the hypotheses developed above, the proposed research model illustrating the relationships among the study constructs is presented in Figure 1.

Research methodology

Sample and data collection

This study uses a quantitative research approach to analyze the data collected from the restaurant sector in Northern Cyprus. The methodology included the use of a self-administered questionnaire form, which is comprised of two parts: the primary part includes the items to collect participants' demographic data, and the second part is segmented into nine sections, including the study's variables.

The respondents for this survey were drawn from the eateries in the island's north region, which are individuals that patronize different restaurants. To conclude our findings, we carefully chose a sample representative of the entire group. This study uses the rule of thumb of minimum five to maximum ten respondents per single question in the questionnaire to specify an appropriate sample size for the structural equation model (SEM) (Aghaei et al., 2022; Teimouri et al., 2018). This study applied purposive non-probability sampling, which enabled the targeted recruitment of restaurant employees with direct relevance to the research focus. However, this approach may introduce selection bias, as participants were drawn from a limited number of restaurants within specific regions of Northern Cyprus. Consequently, the results may not be fully generalizable to all foodservice establishments in Northern Cyprus or to restaurant sectors in other geographical contexts. Future studies could benefit from employing probabilistic sampling strategies and expanding the regional coverage to enhance external validity. The primary source of restaurants were initially contacted in a face-to-face visitation and discussion to obtain their agreement to use the venue for study purposes. After they consented to participate in the survey, they were given a printed questionnaire form to expedite the customers' responses. The surveys were issued immediately after customers' service experiences and retrieved the answers instantly. As a result, 260 respondents from different restaurant locations in the island aged 18 and older received the questionnaire. Finally, the researchers could retrieve 246 questionnaires that were filled out accurately. Thus, the present study had a response rate of 94.62%, which is considered adequate (Baruch &

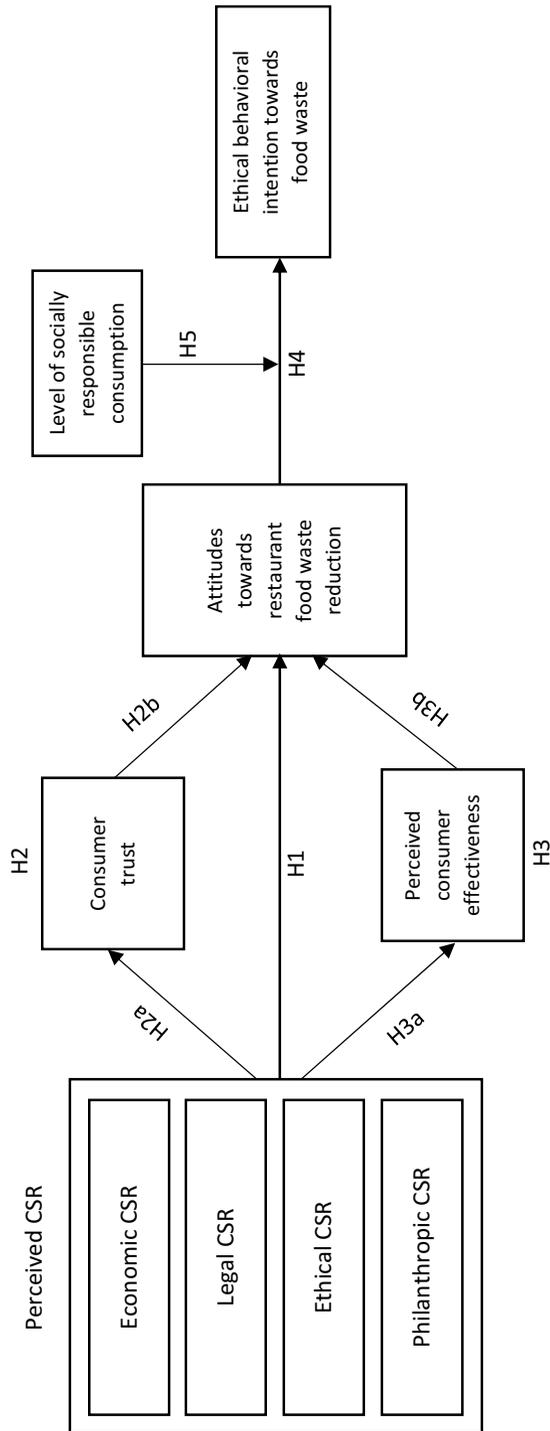


Figure 1. Hypothesized model.

Holtom, 2008). The response rate of 94.62%, although unusually high for survey-based studies, can be attributed to several contextual factors inherent to the data collection procedure. First, participating restaurants granted direct access to customers, enabling the researchers to distribute and retrieve questionnaires on-site immediately after service experiences. This face-to-face administration substantially reduced non-response. Second, restaurant staff encouraged customer participation, and the brief length of the questionnaire facilitated completion. Finally, customers were approached during leisure moments after their meals, which further contributed to the high participation rate. These operational conditions collectively explain the higher-than-typical response rate observed in the study.

Measures

The constructs in the research model were surveyed using reflective indicators modified from former studies on five-point Likert scales. Nine constructs were used for the development of the research model, which were measured using a self-structured questionnaire that included 45 items (see [Appendix 1](#)). The measurement items were adapted from previously validated scales commonly used in food waste and pro-environmental behavior research, which ensured conceptual relevance to the restaurant context. To confirm the suitability of the adapted items, a pilot test was conducted with a small sample of restaurant employees ($n = 20$). Minor wording adjustments were made to improve clarity and contextual alignment. Reliability analysis showed satisfactory internal consistency, with Cronbach's alpha values exceeding the recommended threshold of 0.70 for all constructs (Hair et al., 2019). To obtain the desired data for the construct, the researcher designed questions that are extensive in gathering customers' responses to each variable as follows:

Each construct in the research model was operationalized using established measurement scales adapted to the restaurant food waste context. Perceived CSR was measured across four sub-dimensions, economic (six items), legal (five items), ethical (five items), and philanthropic (four items) adapted from Wu and Lin (2014), capturing customers' evaluations of restaurants' social responsibility practices. Consumer trust was assessed using a five-item scale adopted from Martínez and Del Bosque (2013), while perceived consumer effectiveness was measured using six items adapted from Sharma and Sharma (2017). Attitudes toward restaurant food waste mitigation were measured using four items adapted from Stancu et al. (2016). The level of socially responsible consumption was evaluated with a four-item scale derived from Chen and Jai (2018), and ethical behavioral intention toward food waste reduction was measured using six items from the same study, assessing consumers' intentions to engage in food waste reducing behaviors.

Demographic characteristics

The demographic characteristics of the survey respondents, gender, age range, monthly income, nationality, and place of residence, are summarized in Table 1.

Table 1. Demographic profile summary.

Variables	Characteristics	Distribution	Percentages
Gender	Male	117	47.6
	Female	129	52.4
Age Range	≤20	24	9.8
	21–30	74	30.1
	31–40	57	23.2
	41–50	43	17.5
	51–60	31	12.6
	≥61	17	6.9
Monthly Income Level	<USD 400	64	26.0
	USD 400–800	119	48.4
	USD 800–1200	43	17.5
	>USD 1200	20	8.1
Place of residence	Urban	128	52.0
	Rural	118	48.0
Nationality	Citizen	122	49.6
	Non-citizen	124	50.4

Data analysis and results

Data were analyzed using the partial least squares structural equation modeling (PLS-SEM) approach implemented in SmartPLS (Ringle et al., 2015). Given the complexity of the proposed research model which includes both first-order and higher-order constructs, PLS-SEM was considered more appropriate than covariance-based structural equation modeling techniques (Hair et al., 2016).

PLS-SEM consists of measurement and structural model evaluation. The measurement model assessment focuses on examining the constructs' reliability and validity, while the structural model assessment evaluates the significance and strength of the hypothesized relationships among constructs.

Measurement model assessment

The measurement model was evaluated to assess the quality of the study constructs, including an examination of indicator factor loadings as well as the reliability and validity of the constructs.

As a first step in assessing indicator reliability, factor loadings were examined to determine the extent to which individual items correlate with their underlying latent constructs. Factor loadings range from -1.0 to $+1.0$, with higher absolute values indicating stronger associations between indicators and the constructs they measure (Pett et al., 2003). In the present study, all

measurement items exhibited outer loadings above the recommended threshold of 0.60, except for item SRC2 (Hair et al., 2016). Consequently, SRC2 was removed from further analysis. The remaining factor loadings are reported in Table 2.

Following the assessment of indicator reliability, potential multicollinearity among the constructs was evaluated using the variance inflation factor (VIF) (Fornell & Bookstein, 1982). According to Hair et al. (2016), VIF values below 5 indicate that multicollinearity does not pose a critical concern. As shown in Table 3, all VIF values for the study constructs were below the recommended threshold, suggesting that multicollinearity is not an issue in the model.

After confirming acceptable indicator reliability and the absence of multicollinearity, construct reliability was assessed. Reliability refers to the extent to which a measurement instrument produces stable and consistent results over repeated applications, emphasizing the principle of repeatability. Cronbach's alpha and composite reliability are the two most commonly used measures for assessing construct reliability. The results for both reliability indicators are reported in Table 4. Cronbach's alpha values ranged from 0.778 to 0.899, while composite reliability values ranged from 0.849 to 0.929, both exceeding the recommended threshold of 0.70 (Hair et al., 2019). These findings confirm the reliability of the study constructs.

Once construct reliability was established, convergent validity was examined to assess the extent to which multiple indicators of the same construct are in agreement. Convergent validity is defined as the degree to which indicators of a construct converge (Bagozzi et al., 1991) and is established when the average variance extracted (AVE) is equal to or greater than 0.50 (Fornell & Larcker, 1981). As shown in Table 5, the AVE values for all constructs in the present study exceed this cutoff, indicating that convergent validity is adequately established.

Following the assessment of convergent validity, discriminant validity was evaluated to ensure that the constructs are empirically distinct. Discriminant validity refers to the extent to which measures of different constructs do not exhibit excessively high correlations (Bagozzi et al., 1991). According to the Fornell-Larcker criterion, discriminant validity is established when the square root of a construct's AVE exceeds its correlations with all other constructs (Fornell & Larcker, 1981). As shown in Table 6, this condition is met for all constructs, providing strong evidence in support of discriminant validity.

To further substantiate discriminant validity, the heterotrait – monotrait (HTMT) ratio was also examined. The HTMT ratio estimates correlations between constructs, with values below 0.90 indicating adequate discriminant validity (Henseler et al., 2015). As reported in Table 7, all HTMT values in the present study fall below this threshold, providing additional support for discriminant validity.

Table 2. Outer loadings.

	ATT	CT	PCE	ECSR	ETSR	LESR	EBI	PHSR	SRC
ATT1	.824								
ATT2	.813								
ATT3	.812								
ATT4	.672								
CT1		.684							
CT2		.816							
CT3		.826							
CT4		.805							
CT5		.795							
PCE1			.736						
PCE2			.830						
PCE3			.864						
PCE4			.789						
PCE5			.844						
PCE6			.757						
ECSR1				.690					
ECSR2				.758					
ECSR3				.797					
ECSR4				.810					
ECSR5				.791					
ECSR6				.753					
ETSR1					.826				
ETSR2					.828				
ETSR3					.876				
ETSR4					.864				
ETSR5					.827				
LESR1						.828			
LESR2						.839			
LESR3						.858			
LESR4						.822			
LESR5						.821			
EBI1							.699		
EBI2							.755		
EBI3							.735		
EBI4							.718		
EBI5							.677		
EBI6							.667		
PHSR1								.833	
PHSR2								.882	
PHSR3								.888	
PHSR4								.889	
SRC1									.731
SRC2									–
SRC3									.857
SRC4									.872

Finally, the validity of the higher-order construct (HOC) was assessed. In the present study, perceived CSR is conceptualized as a higher-order construct comprising four lower-order dimensions: economic, legal, ethical, and philanthropic responsibility. To evaluate the HOC, outer weights, outer loadings, and VIF values were examined. As reported in [Table 8](#), all outer weights were statistically significant, supporting the relevance of the lower-order constructs (Hair et al., 2016). In addition, all outer loadings exceeded the recommended threshold of 0.70 (Sarstedt et al., 2019), and VIF values were below the cutoff of 5, indicating no multicollinearity concerns (Hair et al., 2016). These results confirm the validity of the higher-order construct.

Table 3. Collinearity statistics.

	VIF
ATT1	1.729
ATT2	1.867
ATT3	1.750
ATT4	1.481
CT1	1.466
CT2	2.282
CT3	2.336
CT4	2.815
CT5	2.617
PCE1	1.861
PCE2	2.651
PCE3	3.024
PCE4	2.068
PCE5	2.934
PCE6	2.127
ECSR1	1.850
ECSR2	2.274
ECSR3	2.008
ECSR4	1.918
ECSR5	2.064
ECSR6	1.942
ETSR1	2.145
ETSR2	2.214
ETSR3	2.953
ETSR4	2.756
ETSR5	2.457
LESR1	2.130
LESR2	2.946
LESR3	2.993
LESR4	2.196
LESR5	2.171
EBI1	1.929
EBI2	2.706
EBI3	2.443
EBI4	1.730
EBI5	1.504
EBI6	1.152
PHSR1	2.598
PHSR2	3.344
PHSR3	2.655
PHSR4	2.254
SRC1	1.442
SRC2	1.319
SRC3	1.836
SRC4	1.731

Table 4. Reliability test.

	Cronbach's Alpha	Composite Reliability
ATT	.790	.863
CT	.845	.890
PCE	.890	.917
ECSR	.862	.896
ETSR	.899	.926
LESR	.891	.920
EBI	.818	.858
PHSR	.899	.929
SRC	.778	.849

Table 5. Convergent validity.

	Average Variance Extracted (AVE)
ATT	.613
CT	.619
PCE	.647
ECSR	.590
ETSR	.713
LESR	.696
EBI	.503
PHSR	.767
SRC	.590

Table 6. Discriminant validity – Fornell and Larcker Criterion.

	ATT	CT	ECSR	ETSR	LESR	SRC	EBI	PCE	PHSR
ATT	.783								
CT	.323	.787							
ECSR	.361	.544	.768						
ETSR	.288	.553	.539	.845					
LESR	.319	.585	.735	.610	.834				
SRC	.308	.487	.384	.364	.390	.768			
EBI	.410	.439	.481	.391	.482	.611	.732		
PCE	.416	.678	.541	.525	.548	.581	.535	.805	
PHSR	.237	.573	.438	.644	.437	.346	.386	.423	.876

Table 7. Discriminant validity – HTMT.

	ATT	CT	ECSR	ETSR	LESR	SRC	EBI	PCE	PHSR
ATT									
CT	.384								
ECSR	.410	.626							
ETSR	.333	.630	.603						
LESR	.364	.670	.822	.680					
SRC	.360	.590	.438	.443	.454				
EBI	.535	.532	.574	.460	.567	.677			
PCE	.487	.775	.609	.584	.612	.714	.629		
PHSR	.268	.646	.484	.713	.482	.406	.455	.469	

Table 8. Higher-order construct validity.

HOC	LOC	Outer Weight	t-value	p-value	Outer Loading	VIF
CSR	ECSR	.315	2.779	.006	.831	2.263
	ETSR	.260	2.258	.019	.797	2.215
	LESR	.350	3.057	.002	.852	2.520
	PHSR	.396	3.794	.000	.889	1.738

Structural model assessment

Following the assessment of the measurement model, the structural model was evaluated to examine the proposed relationships and test the study hypotheses. In line with Hair et al. (2017), a bootstrapping procedure with 5000 resamples was employed to assess the statistical significance of the path coefficients. The results of the hypothesis testing are presented in Table 9.

In addition to hypothesis testing, the structural model was evaluated in terms of model fit, explanatory power, predictive relevance, and effect sizes.

Table 9. Summary of hypothesis testing results.

Hypothesis	Relationship	Coefficient	t-value	CI (LL, UL)	Decision
H1	CSR → ATT	.426**	6.815	(.317, .559)	Supported
H2a	CSR → CT	.752**	18.382	(.618, .766)	Supported
H2b	CT → ATT	.194	1.444	(-.058, .304)	Rejected
H3a	CSR → PCE	.659**	15.314	(.531, .693)	Supported
H3b	PCE → ATT	.378**	4.466	(.162, .423)	Supported
H4	ATT → EBI	.602**	11.712	(.510, .713)	Supported
H5	ATT × SRC → EBI	.013	.231	(-.119, .093)	Rejected

Notes: LL: lower limit, UL: upper limit; CI: confidence interval, **Significant at 0.01 (2-tailed); CSR: Perceived corporate social responsibility, CT: Consumer trust, PCE: Perceived consumer effectiveness, ATT: Attitudes toward restaurant food waste reduction, SRC: Level of socially responsible consumption, EBI: Ethical behavioral intention toward food waste.

Model fit was assessed using the standardized root mean square residual (SRMR), which yielded a value of 0.071, below the recommended threshold of 0.080, indicating acceptable model fit. The model explained 41% of the variance in consumer trust, 38% in perceived consumer effectiveness, 46% in attitudes toward food waste reduction, and 52% in ethical behavioral intention, indicating moderate to substantial explanatory power (Hair et al., 2016). Predictive relevance was confirmed through positive Stone-Geisser Q^2 values ranging from 0.21 to 0.34. Effect size (f^2) analysis further showed that perceived CSR exerted moderate effects on consumer trust and perceived consumer effectiveness ($f^2 = 0.18$ – 0.24), while attitudes had a moderate-to-large effect on ethical behavioral intention ($f^2 = 0.29$) (Cohen, 1988; Hair et al., 2021).

The hypotheses testing results indicate that CSR has a positive and significant impact on ATT ($\beta = .426$, $t = 6.815$, $p < .01$) supporting H1. H2a confirms another positive and significant relationship between CSR and CT ($\beta = .752$, $t = 18.382$, $p < .01$). Therefore, it is supported by the fact that there is a positive and significant relationship between CSR and CT. On the other hand, the reported results in Table 9 show that CT does not have a significant effect on ATT ($\beta = .194$, $t = 1.444$, $p > .05$). Consequently, H2b is not supported.

The results further indicate that CSR has a strong, positive, and significant effect on perceived consumer effectiveness ($\beta = .659$, $t = 15.314$, $p < .01$), thereby supporting H3a. The path coefficient of PCE and ATT ($\beta = .378$) is positive and significant ($t = 4.466$, $p < .01$) providing support for H3b. The outcomes in Table 9 are in line with H4 and support the reasoning that a positive and significant relationship between ATT and EBI exists ($\beta = .602$, $t = 11.712$, $p < .01$). Therefore, H4 is also supported. However, the interaction effect between ATT and SRC on EBI is not statistically significant ($\beta = .013$, $t = .231$, $p > .05$). This result indicates that SRC does not moderate the relationship between attitudes and ethical behavioral intention, leading to the rejection of H5.

Although most hypothesized relationships were supported, H2b and H5 were not statistically significant. The non-significant relationship between

consumer trust and attitudes toward food waste reduction (H2b) may be explained by the contextual characteristics of the study setting. In Northern Cyprus, food-related practices are often shaped by deeply ingrained cultural norms, household routines, and habitual behaviors, which may limit the extent to which trust in restaurants directly translates into attitudinal change regarding food waste reduction. In such contexts, attitudes toward food waste may be more strongly influenced by personal moral norms and perceived individual effectiveness rather than relational evaluations of service providers.

Similarly, the absence of a significant moderating effect of socially responsible consumption on the attitude-ethical behavioral intention relationship (H5) may reflect the relatively homogeneous nature of consumption values within the study context. In smaller or close-knit communities such as Northern Cyprus, SRC may be perceived as a general expectation rather than a differentiating consumer identity, thereby weakening its role as a moderator. Moreover, food waste behaviors often occur in private or semi-private settings, which may reduce the salience of socially responsible consumption tendencies in shaping the translation of attitudes into ethical behavioral intentions. These findings suggest that, within this cultural and behavioral context, cognitive and motivational mechanisms may play a more central role than social identity-based factors in explaining food waste reduction intentions.

One of the primary objectives of this study was to examine the mediating roles of CT and PCE in the relationship between CSR and ATT. Although the total effect of CSR on CT was positive and significant ($\beta = .752, t = 18.382, p < .01$) the mediation analysis reported in Table 10 shows that the indirect effect of CSR on ATT through CT was not statistically significant ($\beta = .146, t = 1.399, p > .05$). Accordingly, CT does not mediate the relationship between CSR and ATT.

In contrast, Table 10 shows that when PCE is included as a mediator, the indirect effect of CSR on ATT through PCE is positive and statistically significant ($\beta = .249, t = 3.960, p < .01$). At the same time, the direct effect of CSR on ATT becomes non-significant ($\beta = .170, t = 1.810, p > .05$). These findings indicate that PCE fully mediates the relationship between CSR and attitudes.

Table 10. Mediation test results.

Hypothesis	Estimate	t-value	BC 95% CI		Mediating effects
			Lower	Upper	
H2 Direct effect (CSR → ATT)	.260**	2.198	.024	.496	No mediation
	Indirect effect (CSR → CT → ATT)	.146	1.399	-.058	
H3 Direct effect (CSR → ATT)	.170	1.810	-.034	.336	Full mediation
	Indirect effect (CSR → PCE → ATT)	.249**	3.960	.137	

Notes: BC, bias corrected; CI, confidence interval. In total, 5000 bootstrap samples; ** $p < 0.01$.

Discussion and conclusion

Restaurant food loss at the consumption level is a rapidly expanding issue on a global scale, and its elimination calls for the involvement of various stakeholders, especially consumers (Okumus et al., 2020). Despite its socio-cultural, economic, and environmental significance, food waste continues to pose a major sustainability challenge across different consumption contexts.

Recent food waste research has examined the phenomenon across diverse contexts and methodological approaches. Prior studies have focused on household food waste generation, highlighting the influence of spatial and temporal conditions on waste behaviors (Jehlička et al., 2025), as well as culturally embedded food practices explored through ethnographic research in specific national contexts, such as Jordan (Ahmad et al., 2025). Other contributions have emphasized educational strategies aimed at addressing the attitude-behavior gap in food waste and sustainability-related consumption, particularly within higher education settings (Martin-Rios et al., 2025). More recently, research has examined food waste determinants in institutional foodservice environments, such as university restaurants, focusing on situational, operational, and behavioral factors influencing waste generation among student populations (Campos et al., 2025). While these studies provide valuable insights into household, educational, and institutional food waste contexts, they offer limited understanding of how consumers' perceptions of restaurant-level corporate social responsibility activate psychological mechanisms that shape food waste-related attitudes and ethical behavioral intentions. In contrast, the present study adopts a consumer-centric perspective in the general restaurant context, examining how perceived restaurant CSR influences consumer trust and perceived consumer effectiveness, which in turn shape attitudes and ethical behavioral intentions toward food waste reduction in the under-researched context of Northern Cyprus.

Against this backdrop, the present research shifts attention from food waste outcomes to the consumer-centered processes that underlie food waste reduction in restaurant settings. While numerous studies have provided insight into the quantities and reuse of food waste (Roodhuyzen et al., 2017), this study extends prior research by focusing on how consumers evaluate restaurants' social responsibility and how these evaluations shape psychological and behavioral responses toward food waste reduction. In the context of Northern Cyprus, where the restaurant sector represents one of the most vibrant components of the local economy due to favorable climatic conditions and high demand for gastronomic services (Bayram & Ruhluel, 2021), understanding consumer-driven mechanisms becomes particularly important. Accordingly, this study empirically examined the mediating roles of consumer trust and perceived consumer effectiveness in the relationship between perceived CSR and attitudes toward mitigating restaurant food waste. In addition, the

moderating role of socially responsible consumption in the relationship between attitudes and ethical behavioral intention toward food waste reduction was tested.

The findings further indicate that perceived CSR plays a central role in shaping consumers' psychological responses toward restaurant food waste reduction. While CSR perceptions were found to significantly enhance consumer trust and perceived consumer effectiveness, the direct relationship between trust and attitudes toward food waste reduction was not significant. This suggests that, in the restaurant context, trust may function more as a relational evaluation of the firm rather than a direct driver of food waste-related attitudes. Instead, consumers' attitudes appear to be more strongly influenced by their perceived ability to make a meaningful difference, highlighting the importance of perceived consumer effectiveness as a motivational mechanism. Moreover, the non-significant moderating effect of socially responsible consumption may reflect the relatively homogeneous consumption norms in Northern Cyprus, where socially responsible behaviors are often viewed as general expectations rather than distinguishing consumer traits.

In combination, the limited empirical evidence examining consumers' perceptions of restaurant-level CSR and their influence on food waste – related attitudes and ethical behavioral intentions in developing and small-island contexts further underscores the contribution of this study. By focusing on the Northern Cyprus restaurant sector, this research addresses an important contextual and theoretical gap and extends existing food waste literature by integrating consumer-centric psychological mechanisms within a CSR framework.

Building on these findings, future research may extend this work in several directions. Cross-country comparative studies could examine whether the proposed relationships hold across different cultural and institutional contexts, particularly between small-island economies and larger markets. Longitudinal research designs may further capture how consumer attitudes and ethical behavioral intentions toward food waste reduction evolve over time in response to sustained restaurant CSR engagement. In addition, experimental studies could test the effectiveness of different CSR communication strategies in strengthening perceived consumer effectiveness and reducing food waste, thereby providing causal evidence to complement the present findings.

Theoretical implications

The discoveries of the present study contribute to the literature on consumer behavior in the restaurant sector, specifically consumers' perceptions toward food loss reduction. In compliance with the results of Wan et al. (2022), our findings show that the perceived CSR, comprised of four extents: economic,

legal, ethical, and philanthropic, went through consumers' attitudes toward restaurant food waste reduction as an intermediary ladder to their ethical food waste behavioral intention (Sutinen & Närvänen, 2022).

This study further contributes to the literature by examining CT as a mediating variable between consumers' perceptions of CSR and ATT. About the influence of perceived CSR on CT, the results of this study offer a practical perspective concerning the values of CSR that are perceived by consumers as restaurants being socially responsible and how such creatives improve the level of trust between customer and restaurant. However, in contrast, this study indicates a different view regarding the performance of trust on the attitude of customers toward food waste reduction over time. The results show that CT has an insignificant impact on consumers' food loss reduction attitudes. Consistent with the findings of Bayram and Ruhluel (2021), customers of restaurants in Northern Cyprus have different expectations and behaviors in comparison with the existing discoveries in the literature due to its special culture and norms. The findings of this study confirm that, although customer relationships could be strengthened with noticeably socially responsible performance (Lacey & Kennett-Hensel, 2010), there is no sufficient evidence in the restaurant sector of Northern Cyprus to support that trust could significantly enhance the attitudes of consumers toward food saving. Despite the environmental behavior of a minor group of people in Northern Cyprus, this might be discussed as the lack of sensitivity of society toward protecting the resources and environment or other kinds of pro-social activities. Additionally, the absence of sustained public education and media-driven awareness campaigns particularly those targeting younger generations, may further constrain the attitudinal impact of trust on food-saving behaviors.

The findings further reveal that PCE plays a key mediating role in explaining how perceived CSR influences consumers' attitudes toward food waste reduction in the restaurant sector of Northern Cyprus. This result exactly aligns with prior studies in literature (Currás-Pérez et al., 2018; Heo & Muralidharan, 2019; Taufique & Vaithianathan, 2018). Specifically, the findings indicate that enhance consumers' sense of personal effectiveness in addressing environmental issues (Heo & Muralidharan, 2019). In turn, consistent with Emekci (2019), higher levels of PCE exert a strong and significant influence on consumers' attitudes toward food waste mitigation.

The present research also expands a deep insight into the impression of consumers' attitudes toward dropping food waste on their behavioral intention toward food loss and subsequently the moderating effect of the level of SRC in the restaurant sector of Northern Cyprus. The findings, which are supported by previous studies (e.g., Djekic et al., 2019; Filimonau et al., 2020) revealed that changing attitudes of restaurants' consumers toward food waste mitigation creates values based on their ethical intention toward food waste. Remarkably, in contrast to the available literature (Gupta & Agrawal, 2018;

Johnson & Chattaraman, 2019), SRC doesn't illustrate a significant interaction effect between ATT and EBI in this research. It shows that, contrary to existing literature, the level of SRC in this study doesn't change the nature of the connection between the predictor (attitude) and the outcome (ethical behavioral intention). One possible explanation lies in entrenched cultural consumption habits, which may be reinforced by limited public awareness of resource scarcity and the importance of environmental sustainability. As a result, restaurant consumers may exhibit a short-term consumption focus, whereby food consumption is perceived as an immediate source of gratification, while the longer-term consequences of food waste remain psychologically distant and less salient.

Managerial implications

The managerial and policy implications of this study should be interpreted in light of its empirical findings. The results indicate that perceived consumer effectiveness plays a central role in translating perceived restaurant CSR into favorable attitudes toward food waste reduction. Accordingly, fostering a sense of responsibility for future generations and strengthening consumers' beliefs that their individual actions can make a meaningful difference are critical for encouraging pro-environmental behaviors such as food waste mitigation in the restaurant sector.

In the context of Northern Cyprus, where the restaurant industry represents one of the most vibrant components of the local economy, consumer behavior plays a particularly important role. As local consumers adopt visible and consistent eco-friendly practices, these behaviors may be emulated by non-citizens, visitors, and tourists, thereby reinforcing the country's image as an emerging sustainable tourism destination (Saltik et al., 2025). Such outcomes are aligned with the economic, legal, ethical, and philanthropic dimensions of CSR examined in this study and may also contribute to broader public health and well-being benefits.

The findings further suggest that responsibility for food waste reduction extends beyond individual consumers to include restaurant managers, organizations, policymakers, and government institutions. Given that consumer perceptions of CSR significantly influence how restaurants are evaluated, managers should recognize the importance of making CSR efforts visible and meaningful. Prior research indicates that corporate environmental contributions are often insufficiently recognized by consumers (Palihawadana et al., 2016); therefore, restaurants are encouraged to enhance the disclosure of their CSR practices through integrated marketing communications. Rather than promoting CSR activities in an unfocused manner, restaurants should concentrate on a limited number of initiatives that align closely with their operational

capabilities and public concerns, supported by continuous sustainability-oriented marketing research.

Consistent with the strong role of PCE identified in this study, raising awareness and knowledge about the risks associated with food loss in restaurant operations is particularly important. Because PCE fully mediates the influence of perceived CSR on attitudes toward food waste reduction, awareness-building campaigns are especially effective when they strengthen consumers' beliefs that their individual dining choices can meaningfully reduce food waste. Sustainability training programs focused on food waste issues can increase both customer and employee knowledge and engagement (Alcorn et al., 2021), thereby reinforcing consumers' perceptions that their dining-related decisions contribute to meaningful environmental outcomes.

At the operational level, the results support the adoption of practical food waste reduction strategies that enable consumers to actively participate in mitigation efforts. Encouraging food-saving behaviors at both household and public levels has been shown to be effective in addressing food waste (Dagiliūtė & Musteikytė, 2019). Restaurants in Northern Cyprus may further reduce waste through flexible portion sizes, more cautious menu planning, and the use of technological solutions to optimize purchasing and production processes (Priefer et al., 2016). Such measures not only reduce food waste but also promote healthier consumption patterns among customers (Filimonau et al., 2020).

In addition, limiting food loss during preparation and overproduction through improved purchasing, storage, and inventory management practices remains essential (Betz et al., 2015). Providing customers with opportunities to take leftovers and assisting them in placing consumption-appropriate orders can further support waste reduction efforts (Dagiliūtė & Musteikytė, 2019). Although managers may initially perceive these socially responsible practices as a potential threat to sales volume, prior research suggests that such concerns are unfounded, as consumers are increasingly attentive to climate change and responsible business practices. Moreover, positive word-of-mouth generated through online platforms can amplify the reputational benefits of food waste reduction initiatives (Kim et al., 2022; Lee et al., 2020; Moggi et al., 2018).

Finally, the role of national government in reducing restaurant food waste should not be overlooked. Given the public's limited awareness of food loss issues, government-led awareness campaigns are essential to encourage collaboration between consumers and the restaurant industry. Policymakers can further support restaurateurs by providing specialized training opportunities to monitor and manage core food waste streams more effectively, as well as by establishing financial incentive schemes that motivate restaurants to engage in food waste reduction practices (Filimonau et al., 2020).

Limitations and future research

Despite its contributions, this study has several limitations that should be considered when interpreting the findings and that offer directions for future research. First, the study focuses exclusively on the restaurant sector and food-related consumption. While this focus is appropriate given the study's objectives, consumer responses to CSR initiatives may vary across industries and product categories. Future research could therefore examine whether the proposed relationships hold in other service or retail contexts, where perceptions of CSR and opportunities for food waste reduction may differ.

Second, although the model captures key psychological mechanisms underlying food waste-related attitudes, the sample does not fully account for socio-demographic heterogeneity. Differences between urban and rural consumers, for example, may shape CSR perceptions, perceived consumer effectiveness, and food waste behaviors due to variations in access to resources, social norms, and exposure to sustainability initiatives. Future studies could incorporate such categorical moderators, as well as achieve more balanced representation across age groups, to enhance the robustness and generalizability of findings.

Third, this study is cross-sectional in nature, which limits the ability to capture changes in attitudes and behavioral intentions over time. Longitudinal research designs would allow future scholars to examine how sustained exposure to restaurant CSR initiatives influences consumer attitudes, perceived effectiveness, and ethical behavioral intentions toward food waste reduction. In addition, experimental approaches could be employed to test the causal impact of different CSR communication strategies on consumers' food waste-related perceptions and behaviors.

Finally, the empirical context is limited to the restaurant market of Northern Cyprus, a small-island setting characterized by specific socio-cultural and market conditions. While this context provides valuable insights, future research could extend the model to other national settings, particularly regions experiencing rapid growth in dining-out practices and international tourism, to assess the broader applicability of the proposed framework.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Ethics statement

At the time of data collection, ethical approval was not required for this study, as it did not involve human experimentation, human tissue, animals, or the collection of personal or identifiable data. The study involved anonymous, non-interventional questionnaire data collected in Northern Cyprus and was conducted in accordance with the research ethics guidelines of Cyprus International University. Participation was voluntary, and all participants were informed about the purpose of the study and provided informed consent prior to participation.

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Appendices

Appendix 1 – Questionnaire

Perceived CSR

Economic CSR

- 1 I think that this restaurant can stimulate economic activities.
- 2 I think that this restaurant provides advantages for consumers.
- 3 I think that this restaurant has higher operational efficiency.
- 4 I think that this restaurant provides great value products.
- 5 I think that this restaurant offers reasonably priced products.
- 6 I think that this restaurant can stimulate the local markets.

legal CSR

- 7 I think that this restaurant abides by legal regulations.
- 8 I think that this restaurant abides by all transaction laws and regulations.
- 9 I think that this restaurant meets all required regulations.
- 10 I think that this restaurant meets all its legal obligations.
- 11 I think that the products and services provided by this restaurant comply with the regulations of the country.

ethical CSR

- 12 I think that this restaurant meets the expectations of society.
- 13 I think that this restaurant respects the moral standards of our society.
- 14 I think that this restaurant will handle defective products to the satisfaction of consumers.
- 15 I think that this restaurant is trustworthy and reliable.
- 16 I think that this restaurant abides by its commercial ethical standards.

philanthropic CSR

- 17 I think that this restaurant meets the expectations of society in the field of philanthropic activities.
- 18 I think that this restaurant organizes or sponsors philanthropic activities.
- 19 I think that this restaurant staff participates in philanthropic activities on a voluntary basis.
- 20 I think that this restaurant participates in public welfare activities.

Consumer trust

- 21 The services of this restaurant make me feel a sense of security.
- 22 I trust in the quality of this restaurant.
- 23 Hiring services of this restaurant is a quality assurance.
- 24 This restaurant is interested in its customers.
- 25 This restaurant is honest with its customers.

Perceived consumer effectiveness

- 26 Every restaurant can influence others in society by its conduct because of this conduct I considered as a sign for any other restaurant.
- 27 I believe that this restaurant's behavior toward food waste reduction has a key impact on preserving the nature.
- 28 I show my influence on nature by purchasing from this restaurant with positive behavior toward food waste reduction.
- 29 There is much more that we can do about the environment.
- 30 I am sure I am able to keep the environment healthy by purchasing from this restaurant with positive behavior toward food waste reduction.
- 31 I consistently care about how many of the items I purchase have harmful effect on the nature.

Level of socially responsible consumption

- 32 As a consumer, what I purchase has an effect on the nation's environmental problems.
 - 33 Since one consumer cannot have any effect on how companies behave toward the community, it does not make any difference what I do.
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(Continued)

(Continued).

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- 34 Each consumer can have a positive effect on society by purchasing foods sold by responsible restaurants.
- 35 When I buy foods, I try to consider how my use of them will affect the environment and the society.
- Ethical behavioral intention toward food waste
- 36 After finding this restaurant responsible toward food waste reduction, I would consider how my food consumption will affect the environment.
- 37 After finding this restaurant responsible toward food waste reduction, I would consider how my food consumption will affect the society well-being.
- 38 After finding this restaurant responsible toward food waste reduction, I would consider making an effort to reduce food waste while eating in the restaurant.
- 39 After finding this restaurant responsible toward food waste reduction, I would look for more information about what I can do to reduce food waste.
- 40 After finding this restaurant responsible toward food waste reduction, I would share the information about food waste reduction effect with my friends or family.
- 41 How likely is it that your favorite restaurant with positive behavior toward food waste reduction would influence you to take steps to consider the issues of food waste in the restaurant?
- Attitudes toward restaurant food waste reduction
- 42 In my opinion wasting food is
- 43 In my opinion loading the environment with my household's food waste is
- 44 In my opinion wasting food is
- 45 In my opinion loading the environment with my household's food waste is
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Notes: Scale: strongly disagree (1) to strongly agree (5) for items 1–40; Scale: very unlikely (1) to very likely (5) for item 41; Scale: not at all negative (1) to extremely negative (5) for items 42–43; Scale: not at all foolish (1) to extremely foolish (5) for item 44; Scale: not at all harmful (1) to extremely harmful (5) for item 45.