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# Hotel employees' intention not to waste food: The role of environmental concern

**Zakaria Elkhwesky[1] · José-Alberto Castañeda-García[2] · Younès El Manzani[3] · Shafique Ur Rehman[4] · Hamada Hassan[5]**

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**Abstract**
Drawing on the theory of planned behavior, the current research examined the effect of moral norms and injunctive norms on hotel employees' intention not to waste food. Besides, the moderating role of environmental concern was also investigated. Data were collected from 586 food and beverage employees in Egyptian hotels, by quantile regression, which allows us to obtain results for the median individual and for those who are wasteful (below the median). The results show that developing moral and injunctive norms is helpful in reducing food expenditure in the median employee ($q = 0.5$). However, if the focus is on the most wasteful employee ($q < 0.3$), the way to reverse this behavior is to develop norms more related to what an employee should or should not do in relation to food waste (injunctive norms) and less related to the feeling of guilt (moral norms). In addition, general environmental concern increases the positive effect of injunctive norms on the intention not to waste food for the wasteful employees, which was not the case for the median employee. These results help to orient information and training policies for employees to reduce food waste in the hotel industry and, from a theoretical point of view, a novel analysis is carried out by comparing employees with different intentions to behave responsibly.

**Keywords** Moral norms · Injunctive norms · Environmental concern · Sustainability · Theory of planned behavior · Hotels

## Introduction

The reduction of waste, especially food waste is a critical issue for the world in the twenty-first century (Chawla et al., 2022; Derhab & Elkhwesky, 2023), especially for the Middle East and North Africa (Bahn et al., 2019). Chang (2022) confirmed that food waste can be viewed as an ethical issue. The Food and Agriculture Organization (FAO) reported that global food loss, which encompasses loss from harvest to retail market, accounted for approximately 14% of the food supply, translating to $400 billion in 2019 (Talwar et al., 2022). Furthermore, the United Nations Environment Programme (UNEP) estimated that food waste at the retail and consumer levels constituted about 17% (Talwar et

✉ Zakaria Elkhwesky
zakaria.elkhwesky@alexu.edu.eg

José-Alberto Castañeda-García
jalberto@ugr.es

Younès El Manzani
Younes.el-manzani@uvsq.fr

Shafique Ur Rehman
shafiqueurrehman2018@gmail.com

Hamada Hassan
Hamada.hassan@pua.edu.eg

[1] Department of Hotel Management, Faculty of Tourism and Hotels, Alexandria University, Alexandria, Egypt

[2] Department of Marketing and Market Research, Faculty of Economics and Business Administration, University of Granada, Granada, Spain

[3] The Higher Institute of Management (ISM-IAE), Université Paris-Saclay, UVSQ, 78000 Versailles, Larequoi, France

[4] Research Institute of Business Analytics and Supply Chain Management, College of Management, Shenzhen University, Shenzhen, China

[5] Faculty of Tourism and Hotels Management, Pharos University, Alexandria, Egypt

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al., 2022). This challenge presents a significant obstacle to society and sustainability, as it results in missed opportunities to feed almost 820 million people who experience food insecurity (FAO, 2021).

Additionally, food waste contributes to approximately 8–10% of global greenhouse gas emissions and costs approximately 1 trillion USD annually (Quested et al., 2020). Food waste has also emerged as a major concern for the hospitality industry, accounting for approximately 12% of total food waste in recent times (Dhir et al., 2020). Hotels worldwide discard approximately 289,700 tons of waste each year, including 79,000 tons of food waste (Bhajan et al., 2022).

Food waste is a critical concern (Chen et al., 2023; Guo et al., 2023) for hotels as it can harm their operational profits (Papargyropoulou et al., 2016), customer loyalty (Pirani & Arafat, 2016), corporate reputation (Filimonau & De Coteau, 2019), and market competitiveness (Pirani & Arafat, 2016). Despite its criticality, previous studies that have examined food waste in hotels have been limited in terms of their scope and scale (Filimonau et al., 2019).

First, despite a few notable exceptions (Chawla et al., 2022; Goh & Jie, 2019; Luu, 2020), previous research on food waste in hotels has focused primarily on the organizational level by quantifying and characterizing the waste, identifying its causes and effects, and exploring managerial approaches to mitigating it (Amicarelli et al., 2022; Bhajan et al., 2022; Chawla et al., 2022; Demetriou, 2022; Elnasr et al., 2021; Filimonau & De Coteau, 2019; Filimonau & Tochukwu, 2020; Filimonau et al., 2019; Goh & Jie, 2019; Leverenz et al., 2021; Okumus, 2020; Okumus et al., 2020; Omune et al., 2021; Tomaszewska et al., 2021). Nevertheless, the role of hotel employees in reducing food waste has not been widely investigated (Goh & Jie, 2019; Okumus, 2020).

To address the issue of food waste in hotels, it is crucial to consider the individual level by examining the factors that influence employees' intentions not to waste food (Goh & Jie, 2019). Hotel employees are key stakeholders in waste management (Park et al., 2014), and their educational background, functional expertise, and personal attitudes toward sustainability play a vital role in determining the effectiveness of waste management practices (Goll & Rasheed, 2005). Their role is crucial at various stages: during procurement, where informed purchasing decisions can prevent overstocking; in kitchen operations, where efficient food preparation and portion control can minimize waste; at the point of service, where staff can guide guests towards waste-reducing choices (Amicarelli et al., 2022; Cozzio et al., 2021); and finally, in waste management, where employees can ensure proper segregation and identify opportunities for food donation or composting. Employees proactive involvement and continuous training in these areas are essential for implementing and sustaining effective food waste reduction strategies in hotels.

Second, most studies on this topic lack a clear theoretical framework to guide their analysis and recommendations. Even the few existing studies that have used the Theory of Planned Behavior (TPB) to examine individual-level factors influencing food waste intention, often apply this theory in a conventional way (Chawla et al., 2022; Goh & Jie, 2019) without exploring new or specific constructs that have not been used in the context of hotels before, such as moral norms, injunctive norms, and environmental concern.

A study of Goh et al. (2022) is among the few studies that have examined the role of injunctive norms, they looked at the reference groups important to food and beverage managers that influence (injunctive) their implementation of food waste initiatives in hotel restaurants in the Indonesian hotel sector. However, this research was exploratory in nature and its results do not guarantee broad generalizability.

Finally, although the diversity of the geographic distribution of research on hotels' food waste, most studies have been conducted in developed economies from Europe (e.g., Filimonau et al., 2019), Asia (e.g., Luu, 2020), America (e.g., Okumus, 2020), and Australia (e.g., Goh & Jie, 2019). In contrast, a limited number of studies have looked at hotel food waste in developing countries, including African countries, such as Egypt (Elnasr et al., 2021), Mauritius (Bhajan et al., 2022), and Nigeria (Filimonau & Tochukwu, 2020). This is a crucial limitation because the African context differs substantially from that of other countries (Filimonau & Tochukwu, 2020), and food waste patterns may vary depending on the socioeconomic characteristics of the countries (Aydin & Aydin, 2022). Inadequate public environmental awareness, low living standards, insufficient resources, and poor governance pose significant challenges to effective waste management in Africa (Mensah, 2014).

The purpose of this study is to contribute to the hospitality management literature by addressing the above-mentioned limitations and answering the following two specific sub-research questions (**RQs**): **RQ1**: How do hotel employees' moral and injunctive norms influence their intentions not to waste food? **RQ2**: Does hotel employees' environmental concern moderate the association between their moral and injunctive norms and intentions not to waste food?

By answering these questions, the study responds to the authors' calls for more research on food waste in the hotel industry (Amicarelli et al., 2022; Demetriou, 2022; Derhab & Elkhwesky, 2023; Filimonau & Tochukwu, 2020; Filimonau et al., 2019), at the employee level (Goh & Jie, 2019; Okumus, 2020), and especially in specific African (Mensah & Blankson, 2013) and developing countries (Kattiyapornpong et al., 2023). Accordingly, our study proposes a new

conceptual framework that can elucidate hotel employees' intentions not to waste food.

Based on the TPB, we focused on the constructs that have not been previously studied in the context of hotels' food waste by integrating them into the same analysis: *moral norms* (individual beliefs about the moral correctness of behavior Olsen et al., 2010; Stancu et al., 2016)), *injunctive norms* (shared beliefs, expectation or subjective probability, about approved or disapproved behavior by given referent individual or group in a culture Ajzen, 2020; Stancu et al., 2016)), and *environmental concern* (awareness and worry about environmental issues Chang et al., 2015; Kim & Choi, 2005)).

At the individual level, these constructs are among the most significant predictors of the intention not to waste food of consumers (e.g., Aydin & Aydin, 2022; Elhoushy & Jang, 2021; Filimonau et al., 2020, 2023; Teoh et al., 2022) and households (e.g., Abu Hatab et al., 2022; Oehman et al., 2022; Talwar et al., 2022). Furthermore, by investigating the moderating role of environmental concern in the relationship between moral and injunctive norms and intention not to waste food, we highlight the importance of taking into consideration employees' environmental concern, which have received little attention in the context of hotels' food waste (Chawla et al., 2022), but which could be critical to reducing waste and promoting sustainable practices.

Examining the individual-level antecedents of intention not to waste food among hotel employees can provide valuable insights into developing effective strategies for reducing food waste in the hotel industry. Finally, this research adds to the limited literature on food waste in specific African countries by examining the context of Egypt. We focused on Egyptian hotels due to the country's high food waste rates (BCFN, 2016). FAO statistics indicate that per capita food waste in Egypt escalated to 91 kg in 2021, showing a significant increase from the previous years, which recorded 73 kg, 60 kg, and 50 kg in 2020, 2019, and 2018 respectively. The year 2020 saw a surge in per capita food waste to 73 kg annually, and this upward trend persisted into 2021, culminating in 91 kg per capita. Consequently, the total food waste in Egypt for the year 2021 amounted to an astounding 9,136,941 tons (Anyango, 2022; Elhoushy & Jang, 2021; Samir, 2022). Furthermore, Abou Kamar (2017) found that three-star hotels in Egypt generate an average of 192.1 kg of food waste per day. Thus, Egypt provides an interesting context to investigate food waste among hotel employees.

Our study not only constructs a new conceptual framework but also to seamlessly weave it into the broader narrative of hotel food waste reduction. We choose to focus on moral and injunctive norms as key variables, grounded in the TPB, to holistically examine the influence on employees' intentions regarding food waste. This choice stems from the significant yet distinct roles these norms play in shaping pro-environmental behaviors. Moral norms encapsulate personal ethical standards, directly influencing individual actions towards food waste, while injunctive norms represent societal expectations, offering a broader perspective on behavior regulation. The integration of these norms, alongside environmental concern, offers a comprehensive view of the multifaceted motivations behind employees' intentions to reduce food waste. This theoretical approach not only addresses the individual and collective dimensions of behavior but also aligns with emerging trends in environmental psychology, providing a robust framework for our analysis.

## Conceptual framework and hypotheses development

Building on the earlier Theory of Reasoned Action, the Theory of Planned Behavior (TPB) was developed to provide a social-psychological perspective on human behavior (Ajzen, 1991; Fishbein & Ajzen, 1975). The TPB posits that a person's behavior is determined by their intentions to perform that behavior, which in turn are predicted by their attitude towards the behavior, the social pressure or support they perceive from others (*subjective norms*), and their perception of how easy or difficult it is to perform the behavior (*perceived behavioral control*) (Ajzen, 1991). The TPB has become one of the most influential models for explaining human social behavior, and its relevance and robustness have led to its widespread application and adaptation to various problems and contexts (Teoh et al., 2022).

In hospitality, the TPB has been used extensively to predict and explain the intention not to waste food of consumers (e.g., Aydin & Aydin, 2022; Ertz et al., 2021) and households (e.g., Abu Hatab et al., 2022; Oehman et al., 2022), while its application in the case of hotel employees is still rare (Chawla et al., 2022; Goh & Jie, 2019; Goh et al., 2022; Luu, 2020). Several researchers have attempted to extend the TPB to study the intention not to waste food by introducing moral norms (Luu, 2020; Marek-Andrzejewska & Wielicka-Regulska, 2021; Wang et al., 2021; Werf et al., 2019) and injunctive norms (Bell & Ulhas, 2020; Ertz et al., 2021) as separate determinants or combining them with other TPB components (Aydin & Aydin, 2022; Bhatti et al., 2019; Filimonau et al., 2023; Stancu et al., 2016; Teoh et al., 2022).

The inclusion of moral and injunctive norms is crucial to understand the intention not to waste food and enrich the TPB in the context of food waste. Research has shown that moral norms may significantly contribute to the explained

variance in intention to engage in a behavior (Ajzen, 1991; Miafodzyeva & Brandt, 2013). On the other hand, it has been showed that subjective norms have a very weak effect on intention across several behavioral domains (see Armitage & Conner, 2001), and an insignificant effect on the intention not to waste in particular (Coşkun & Yetkin Özbük, 2020; Marek-Andrzejewska & Wielicka-Regulska, 2021; Stefan et al., 2013; Visschers et al., 2016). Therefore, researchers have preferred to focus more on injunctive norms as a component of TPB over subjective norms as they are a precise dimension of them that will allow deepening the impacts of subjective norms on the intention not to waste food.

Following the literature on food waste of consumers and households, our research is grounded in the TPB as it has been useful in exploring food waste intention and comprises a parsimonious model with clearly distinguishable and actionable constructs (Ertz et al., 2021; Stancu et al., 2016). We choose to focus on moral and injunctive norms of hotel employees as these constructs are also likely interrelated (Budovska et al., 2020; Goh et al., 2022; Turner et al., 2023). Individuals tend to internally align their own values with the normative standards of important social groups to which they belong (Quissell, 2022). As such, strong moral beliefs against a behavior can translate into heightened perceptions of others' disapproval should one engage in it. Likewise, clear social guidelines from referents on appropriate conduct may become personally accepted on moral grounds over time through socialization and internalization processes (Grusec et al., 2014). While moral and injunctive norms represent distinct influences, their effects on intention are also likely interconnected as normative pressures operate interactively at both personal and interpersonal levels to guide behavior (Jacobson et al., 2020; Turner et al., 2023; Voisin et al., 2020).

We propose a conceptual framework (Fig. 1) based on the TPB assumptions, which considers both moral norms and injunctive norms to explain hotel employees' intention not to waste food. Furthermore, we extended the TPB by positing that employees' environmental concern will intervene as moderator in these relationships.

## Moral norms, injunctive norms, and intention not to waste food

The intention not to waste food refers to the level of commitment or determination one has towards engaging in the behavior of not wasting food (Ajzen, 1991; Aydin & Aydin, 2022; Fishbein & Ajzen, 1975). Moral norms are an individual's perception of the moral standard of behavior regarding food waste (Chen et al., 2023; Klöckner, 2013; Stancu et al., 2016), or his/her perception of the moral correctness/incorrectness of wasting food, regardless of the personal or social consequences (Bhatti et al., 2019; Olsen et al., 2010; Stancu et al., 2016; Talwar et al., 2022).

Moral norms are necessary to awaken individuals' sense of social and environmental responsibility and to create a greater sense of moral pressure, instead of direct perceived social pressure (Aydin & Aydin, 2022; Teoh et al., 2022). Previous studies have shown that moral norms support the intention not to waste food (Abu Hatab et al., 2022; Aydin & Aydin, 2022; Elhoushy & Jang, 2021; Filimonau et al., 2023; Graham-Rowe et al., 2015; Neubig et al., 2020; Sirieix et al., 2017; Stöckli & Dorn, 2021; Talwar et al., 2022; Teoh et al., 2022; Visschers et al., 2016; Wang et al., 2021).

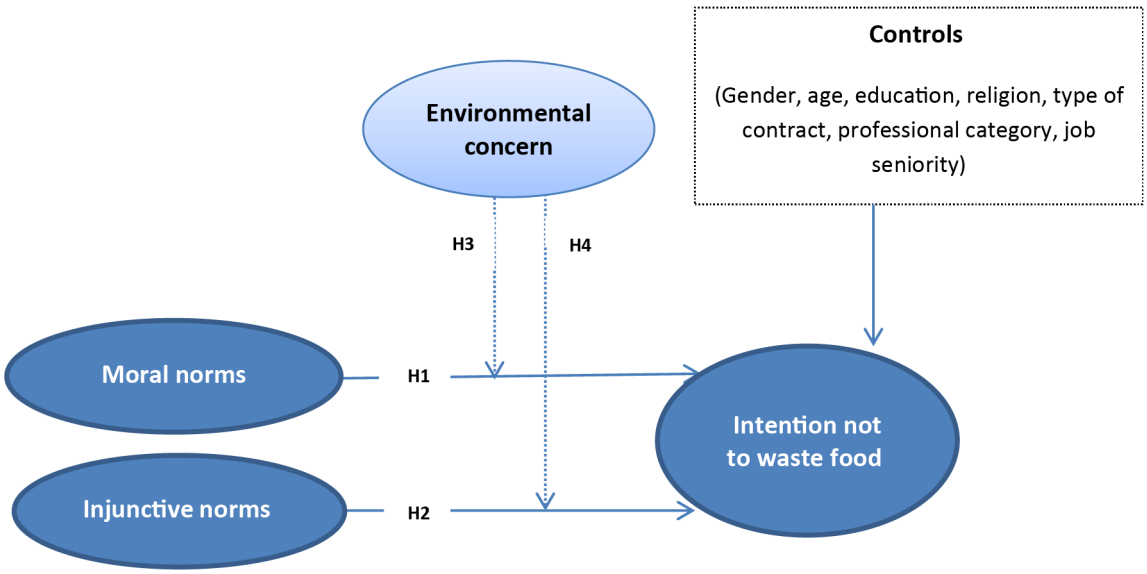


**Fig. 1** Proposed research model

Individuals who feel accountable for avoiding food waste based on their values and sense of responsibility are more likely to follow through with the intention not to waste food (Ajzen, 1991; Kautonen et al., 2015). One of the most influential moral norms on the intention not to waste food is guilt (Aydin & Aydin, 2022). Guilt is a negative self-conscious emotion that induces regret, and it is effective in preventing food waste by reflecting the moral aspect of this behavior (Aydin & Aydin, 2022).

Hotels employees who internalize moral norms that guide their behavior are less likely to waste food (Aydin & Aydin, 2022; Klöckner, 2013; Stefan et al., 2013). This may be due to feelings of guilt about the impact of their actions on the environment and people in need (Aydin & Aydin, 2022). Thus, we hypothesize the following:

***H1: Moral norms have a positive and significant effect on intention not to waste food.***

Injunctive norms are social norms that influence individuals to follow certain behaviors to gain approval and avoid social sanctions (Cialdini et al., 1990; Stancu et al., 2016). They refer to the social pressure that significant others may exert on individuals to either engage in or avoid and can be a powerful motivator, as they highlight the potential rewards and consequences associated with participation or non-participation in waste food. As food waste is a social issue that can be influenced by injunctive norms, hotel employees may feel pressure to avoid being rejected or sanctioned by their community or hierarchical employees (Aydin & Aydin, 2022). In that sense, injunctive norms were found to influence individuals' participation intention in community-based pro-environmental initiatives (e.g., food waste prevention) (Bamberg et al., 2015).

Several studies have confirmed that injunctive norms are a significant antecedent of the intention not to waste food (Aydin & Aydin, 2022; Bell & Ulhas, 2020; Bhatti et al., 2019; Ertz et al., 2021; Filimonau et al., 2023; Luu, 2020; Stancu et al., 2016; Teoh et al., 2022). However, it is not known whether this link is also established for hotels' employees as it was only confirmed for consumers and households. In the current research, we suggest that hotel employees develop an intention not to waste food when they believe that important people in their personal (e.g., family and friends, etc.) and professional (e.g., employees and top managers, etc.) networks expect them to act that way. Thus, we hypothesize the following:

***H2: Injunctive norms have a positive and significant effect on intention not to waste food.***

## The moderating role of environmental concern

Environmental concern reflects an individual's awareness or worries about environmental issues (Aydin & Aydin, 2022; Bamberg, 2003; Chang et al., 2015; Kim & Choi, 2005). It encompasses a general attitude that focuses on the cognitive and affective assessment of environmental protection (Bamberg, 2003) and can be used interchangeably with the environmental attitude which is a set of beliefs, affects, and behavioral intentions regarding environmental activities or issues (Schultz et al., 2004).

While environmental concern is an environmental attitude, it differs from the attitude construct as conceptualized by TPB. Attitudes in TPB a disposition to respond favorably or unfavorably towards a clearly defined behavior (Ajzen, 2020), while environmental concern is more general and not tied to any particular behavior. It encompasses one's assessment of and concern for environmental issues and protection in general, rather than evaluating a specific pro-environmental behavior (e.g., not to waste food). Accordingly, environmental concern is conceptualized in our research as moderator rather than an independent antecedent of intention not to waste food.

Environmental concern is a crucial driver of pro-environmental behavior (Aydin & Aydin, 2022; Bamberg, 2003; Filimonau et al., 2020; Kim & Hall, 2019; Klöckner, 2013; Ng et al., 2020). Lin et al. (2022) showed in their meta-analysis that environmental concern is strongly correlated with pro-environmental behavioral intention in the hospitality context than in tourism. Empirical evidence indicates that environmental concern is positively associated with attitudes toward food waste (Bhatti et al., 2019; Ng et al., 2020; Pellegrini et al., 2019; Stancu et al., 2016; Stefan et al., 2013), intention not to waste food (Aydin & Aydin, 2022), and waste minimization behavior (Ertz et al., 2021).

Environmental concern is rooted in an individual's core beliefs and values about environmental issues (Schultz et al., 2013), which can lead to changes in their normal behavior towards pro-environmental behavior (Richardson, 2013). In this regard, environmental concern is related to employees' moral and injunctive norms and can modify their consequences (Bamberg, 2003). Employees who exhibit high levels of environmental concern may feel more morally obligated to avoid wasting food because they are aware of the negative impacts of food waste on the environment. They may also view food waste reduction as a way to express their pro-environmental values and identity. Similarly, employees who are highly concerned about the environment may be more receptive to pressures and sensitive to social cues from those around them in terms of food waste reduction, seeking more social support and recognition for their efforts to avoid wasting food. Hence,

employees' moral and injunctive norms may have a greater impact on their intention not to waste food than those who exhibit low environmental concern. From this, we hypothesize the following:

***H3: Environmental concern positively moderates the association between moral norms and intention not to waste food.***

***H4: Environmental concern positively moderates the association between injunctive norms and intention not to waste food.***

## Method

### Procedure and sample

Quantitative data were gathered from food and beverage employees in Egyptian hotels, using a web-based questionnaire to minimize bias and accomplish good response rates (Bartram, 2019; Elkhwesky et al., 2023b; Marshall, 2005). Besides, prior research collected data by a web-based questionnaire due to the COVID-19 pandemic restrictions in Egypt and the need for social distancing (Elkhwesky et al., 2023a; Salem et al., 2021).

Food and beverage employees of hotels were chosen to be surveyed in the current study because they are responsible for handling, preparing, and serving food (Petrenko et al., 2019). They may waste food due to preparation and cooking on a daily basis (Goh & Jie, 2019). In addition, they are aware of the food supply chain where waste might occur (Gustavsson et al., 2011). Hotel employees are key stakeholders in waste management (Park et al., 2014). They have an effective role in waste management practices (Goll & Rasheed, 2005). Focusing on food and beverage employees is crucial to manage food waste in hotels (Okumus, 2020). It is essential to deeply investigate the role of hotel employees in reducing food waste (Goh & Jie, 2019; Okumus, 2020) and which factors affecting their intentions not to waste food (Goh & Jie, 2019).

After developing the survey, the current authors consulted twenty academic experts in the business, management, tourism, and hospitality domains to solve any issue related to the questionnaire. They were requested to check the clarity and content of the questionnaire, in addition to the validity of the measures (Olson, 2010; Salem et al., 2021). As a result, the authors added two questions including the job seniority in the department and the type of the contract. According to DeVon et al. (2007), face validity is essential for evaluating the appropriateness and relevance of questions and improving the instrument (Bolarinwa, 2015). Face validity guarantees that the measuring tool is appropriate for the intended audience (DeVellis, 2016). In this regard, face validity is important to improve scales to better fit the particular population that will be studied (Hinkin, 1998).

The questionnaire was translated from English to Arabic by the recent paper's authors because Arabic is the local language of hotel employees in Egypt. After that, six Arabic-English language instructors were requested to ensure the questionnaire items were compatible. Therefore, few comments were done. Prior to the final data collection, 40 hotel employees were recruited to conduct a pilot study to ensure the questionnaire's validity, assess the Arabic translation process of the questionnaire, and assert its content and clarity. As a result, some minor adjustments were performed.

The final data were gathered in February and March 2023. First, the authors collected the email addresses of all human resources managers in Egyptian hotels (Egyptian Hotel Association, 2022). Second, the directors were emailed and requested to distribute the survey as an attached URL hyperlink to their hotel employees in the food and beverage departments, indicating the study's purpose. Finally, two follow-up emails were directed to the managers until the questionnaire's closing to maximize their response rate. Several reminders are important to stop procrastination regarding participating in a web survey. It is recommended to send up to three reminders within the first three days after sending out the advance letter of invitation to maximize response rates (Becker, 2022; Hoonakker & Carayon, 2009).

The researchers employed "a non-probability purposive sampling" to conduct the current research. Purposive sampling is used to select participants who are most likely to yield adequate and useful information (Kelly, 2010, p. 317). It aims at better matching of the sample to the purpose of the research, thus enhancing the rigor of the research and trustworthiness of the data and results (Campbell et al., 2020). With a high level of participation, non-probability sampling could provide reliable data and high-quality findings (Coviello & Jones, 2004). Purposive sampling is widely adopted in tourism and hospitality research (e.g., Chen & Chen, 2015; Elkhwesky et al., 2023a; Li & Ryan, 2018), especially for selecting hotel employees to participate in research (e.g., Kichuk et al., 2019; Zhuang et al., 2020). The authors received 586 completed questionnaires from food and beverage employees in Egyptian hotels. All surveys were valid for the final analysis.

### Measures

The questionnaire was prepared to investigate the effect of moral norms and injunctive norms of food and beverage employees in Egyptian hotels on their intention not to waste food (questionnaire and data are available in Supplementary

**Table 1** Characteristics of the sample

| | Category | N. of cases | % |
|---|---|---|---|
| Gender | Male | 493 | 84.13% |
| | Female | 93 | 15.87% |
| Age | 17–27 | 313 | 53.41% |
| | 28 and more | 273 | 46.58% |
| Education | Less than university | 115 | 19.62% |
| | University (bachelor, master or PhD) | 471 | 80.38% |
| Religion | Muslim | 477 | 81.40% |
| | Christian | 109 | 18.60% |
| Type of contract | Permanent | 277 | 47.27% |
| | Temporary | 309 | 52.73% |
| Professional category | Manager or supervisor | 336 | 57.34% |
| | Entry-level staff | 250 | 42.66% |
| Job seniority in the department | Less than 2 years | 156 | 26.62% |
| | 2–5 years | 228 | 38.91% |
| | Greater than 5 years | 202 | 34.47% |

Material 1). In addition, the moderating effect of environmental concern is also analyzed. Considering the novel conceptual framework, the four constructs of interest with their pertinent sources are: moral norms from Olsen et al. (2010) and Stancu et al. (2016), injunctive norms from Stancu et al. (2016), intention not to waste food from Aydin and Aydin (2022), and environmental concern from Chang et al. (2015) and Kim and Choi (2005). All scales were measured on a 7-point Likert scale from "totally disagree" (1) to "totally agree" (7). The second part of the survey included such questions as "gender, age, education, religion, type of contract, professional category, and job seniority."

### Ethical considerations

"Before collecting data, the questionnaire began with a brief introduction indicating the aim of the research and ensuring confidentiality. In addition, the participants were not requested to show their identities. All respondents signed the informed consent, confirming that they are hotel employees working in the food and beverage department, and they voluntarily agreed to be a part of the recent study."

## Results

### Demographic analysis

Table 1 indicates the demographic characteristics of the respondents. Regarding gender, 84.13% of the total sample were male, while 15.87% were female. This finding is not surprising because men control the work in Egyptian hotels (Elkhwesky et al., 2023b; Salem et al., 2021). In terms of age, 46.58% of the respondents had 28 years old and more.

**Table 2** Discriminant validity. Average variance extracted in the main diagonal and squared correlation below it

| | Moral | Injunctive | Concern | Intention |
|---|---|---|---|---|
| Moral | 0.856 | | | |
| Injunctive | 0.593 | 0.787 | 0.634 | |
| Concern | 0.561 | 0.634 | 0.837 | 0.615 |
| Intention | 0.399 | 0.581 | 0.615 | 0.835 |

In addition, 80.38% had attained bachelor's degree, master's or PhD degree. Most of the respondents were Muslim (81.40%), while 18.60% were Christian. Respondents had temporary contracts (52.73%) and permanent contracts (47.27%). Most of the respondents were managers or supervisors (57.34%), whereas entry-level staff were 42.66%. Concerning job seniority in the department, the majority of participants (38.91%) had between 2 and 5 years of work experience in the food and beverage department. "Gender, age, education, religion, type of contract, professional category, and job seniority" were used as control variables in the model.

### Confirmatory factor analysis

A confirmatory factor analysis was carried out including the main variables of the study: moral norms, injunctive norms, environmental concern, and employees' intention not to waste food. These variables do not meet the multivariate normality condition (Henze-Zirkler = 9.96; $p$-value < 0.01). As suggested by Finney and DiStefano (2008) to overcome the bias in model fit indicators and standard errors of estimates in continuous non-normal data, Robust ML is used. A reasonably good fit was obtained for the estimated model: $\chi^2_{SB}$ (df) = 256.192 (59); CFI = 0.958; TLI = 0,945; SRMR = 0.028.

As can be seen in Annex 1, all the scales had adequate psychometric properties about reliability and validity. In addition, according to Table 2, they did not present discriminant validity problems based on the criteria of Fornell and Larcker (1981). Therefore, we proceeded to obtain the average scales for each of the variables.

### Analytical approach and hypotheses testing

The choice of analysis strategy must take into account both data-related and analysis strategy-related constraints. With respect to the data, an ordinary least squares estimation showed that the residuals did not follow a normal distribution (Shapiro–Wilk $p$-value < 0.001) and that they are heterochedastic (Breush-Pagan p-value = 0.04). It is not only interesting to analyze the average employee (q = 0.50), but especially the employee who is more reluctant to adopt behaviors that avoid food waste (q < 0.50).

Quantile regression was developed as an alternative to OLS estimation when the assumptions of normality and homoscedasticity are not met (Koenker & Bassett, 1978). Quantile regression releases these two assumptions using bootstrap estimation of the standard errors. Standard errors (SE), obtained by bootstrapping, make no assumptions about the population distribution and, as a result, are preferable (Hao & Naiman, 2007). Previous work has shown that bootstrap SEs are also robust to heteroscedasticity (Hahn, 1995). Finally, quantile regression is especially useful when the interest is in population groups in the tails of the distribution (Konstantopoulos et al., 2019), as in our case (wasteful employee).

A quantile regression model was used to estimate the theoretical model in Fig. 1, according to the generic formulation discussed in Supplementary Material 2. This model was first estimated for the median individual (q = 0.50), including the direct effects of moral and injunctive norms and of environmental concern, the interaction of the latter variable on both norms (centering the variables with respect to their mean to avoid multicollinearity problems), and a set of control variables:

$$\begin{aligned} Intention_{0.50}i = {} & \beta 0_{0,50} + \beta 1_{0,50} Moral_i + \beta 2_{0,50} Injunctive_i \\ & + \beta 3_{0,50} Concern_i + \beta 4_{0,50} Concern_i * Moral_i \\ & + \beta 5_{0,50} Concern_i * Injunctive_i + \beta 6_{0,50} Gender_i \\ & + \beta 7_{0,50} Age_i + \beta 8_{0,50} Education_i + \beta 9_{0,50} Religion_i \\ & + \beta 10_{0,50} Contract_i + \beta 11_{0,50} Category_i \\ & + \beta 12_{0,50} Seniority_i + \varepsilon i \end{aligned} \quad (1)$$

Through the package "quantreg" in R (Koenker et al., 2018), the Barrodale and Roberts algorithm, which is very efficient even with several thousand observations and is explained in detail in Koenker and D'Orey (1987, 1994), was used for estimation and standard errors were obtained using 1000 Bootstrap samples. The estimated coefficients for the employee who showed a median intention to adopt behaviors that avoid food waste were shown in Table 3. The pseudo-$R^2$ of Koenker and Machado (1999) reached a high value, suggesting a good fit of the model ($R^2 = 0.62$).

As can be deduced from the results obtained, employees will increase their intention to adopt behaviors that avoid food waste if they feel more conditioned by moral and injunctive. Also, as expected, concern for the environment will increase this intention. However, no moderating effect of the latter variable on the effectiveness of both norms in reducing food waste was observed. With respect to the control variables, the analysis was carried out with (Table 3) and without (Annex 2) these variables as a measure of robustness of the results, reaching the same conclusions in both cases. In addition, to rule out the influence of Common Method Variance (Bias) in our results, the method called Partialling Out of General Factor (Podsakoff & Todor, 1985; Tehseen et al., 2017) is used. For this, an Exploratory Factor Analysis is performed and the factor scores for all respondents are saved for the first unrotated factor, and this new variable is introduced in our model. Then comparing the fit measures if the variance in fit is not high, this would mean

**Table 3** The estimated coefficients for the employee who showed a median intention to adopt behaviors that avoid food waste

| Coefficients | Value | Std. Error | T-value | Pr (>\|t\|) |
|---|---|---|---|---|
| (Intercept) | 5.459 | 0.046 | 117.700 | 0.000 |
| MORAL | 0.127 | 0.046 | 2.750 | 0.006 |
| INJUNCTIVE | 0.176 | 0.061 | 2.881 | 0.004 |
| CONCERN | 0.687 | 0.048 | 14.242 | 0.000 |
| CONCERNxMORAL[a] | -0.041 | 0.031 | -1.332 | 0.183 |
| CONCERNxINJUNCTIVE[a] | 0.041 | 0.032 | 1.277 | 0.202 |
| Gender (Female) | 0.000 | 0.026 | 0.000 | 1.000 |
| Age (≥ 28) | -0.005 | 0.025 | -0.202 | 0.840 |
| Education (Univeristy) | -0.005 | 0.036 | -0.142 | 0.887 |
| Religion (Christian) | -0.005 | 0.037 | -0.138 | 0.891 |
| Contract (Temporary) | 0.005 | 0.027 | 0.192 | 0.847 |
| Category (Entry-level) | -0.003 | 0.026 | -0.101 | 0.919 |
| Seniority (2–5 years) | 0.013 | 0.030 | 0.417 | 0.677 |
| Seniority (> 5 years) | 0.008 | 0.029 | 0.264 | 0.792 |

*p*-value ≤ 0.05

[a] Using G-Power and under the assumption of multiple regression, the power of the contrast achieved in these non-significant interaction effects is 0.91 (higher than the 0.8 limit proposed by Cohen, 2013). For quantile regression G-Power does not implement this calculation, but simulations developed by Yanuar (2018) suggest sample sizes above 320 cases to ensure a power test above 0.8 at moderate effect sizes (δ = 0.25)

that we do not need to worry about this bias. This new analysis has the same $R^2$ as the original model and only a minor change in AIC (Original Model = 1061 vs. Common Factor Model = 1063).

To analyze how moral and injunctive norms affect the intention not to waste food in those employees who were more wasteful, the quantile regression analysis was repeated, making estimates in all deciles between 0.10 and 0.50, i.e., for those employees who were more reluctant to adopt responsible behaviors regarding food waste. Figure 2 showed the main effects of norms and their interaction with environmental concern in the indicated quantile range. The pseudo-$R^2$ fluctuates between 0.51 for $q = 0.10$ and 0.62 for $q = 0.50$.

As can be seen in the different graphs, the estimation of coefficients by deciles showed that in employees with low intention ($q < 0.50$) to adopt responsible behaviors with respect to food waste, moral norms did not manage to increase this intention. Injunctive norms and environmental concern had a direct and positive effect on the intention not to waste food throughout the entire interval considered (0.1; 0.5), however, their interaction was only significant for individuals very reluctant to adopt these responsible behaviors ($q < 0.30$).

In summary, although moral and injunctive norms help to increase the intention not to waste food in the median employee ($q = 0.50$), without interacting with environmental concern, in the wasteful employee it is the injunctive norms that increase the intention to adopt this type of responsible behavior, either directly or through their interaction with environmental concern. Table 4 summarized hypotheses testing results.

## Discussion and conclusion

This study attempts to see the influence of moral norms and injunctive norms on the intention not to waste food with the moderating role of environmental concern among food and beverage employees in Egyptian hotels by using TPB. Moreover, a few of the control variables were also used such as gender, age, education, religion, type of contract, professional category, and job seniority. From a hospitality perspective, TPB is extensively used to determine the intention not to waste food of consumers (Aydin & Aydin, 2022; Luu, 2020) and households (Abu Hatab et al., 2022; Oehman et al., 2022), while TPB application in hotel employees perspective is still rare (Chawla et al., 2022; Goh et al., 2022; Luu, 2020). This study explains the research framework in light of TPB.

Our findings confirmed that moral norms have a positive and significant influence on the intention not to waste food among median employees ($q = 0.50$), while there is no effect in the case of wasteful employees (who are more reluctant to adopt behaviors that avoid food waste ($q < 0.50$). Prior researchers supported the results that moral norms are positively enhancing the intention not to waste food (Talwar et al., 2022; Wang et al., 2021, 2023). A few of the studies about food waste have incorporated the moral element and found that moral norms do not influence the intention to reduce food waste (Bhatti et al., 2019; Stancu et al., 2016).

The inconsistent findings indicate that the research on moral norms and the intention not to waste food is still inconclusive and needs to be studied further. Moreover, few of the prior researchers investigated the relationship between moral norms and the intention not to waste food by using different theories like stimulus-organism-response theory (Talwar et al., 2022), TPB (Bhatti et al., 2019), and norm-activation model (Wang et al., 2021). The current study tried to see the relationship between moral norms and the intention not to waste food by using TPB because Ajzen (1991) suggested the addition of moral norms in the TPB model.

Our results showed that injunctive norms have a positive and significant impact on the intention not to waste food. This is in line with Stancu et al. (2016) who found that injunctive norms have a significant influence on the intention not to waste food among Danish people. The results are also supported by Aydin and Aydin (2022) that injunctive norms play a crucial role in determining the intention not to waste food of Turkish people.

Injunctive norms are considered the strongest factor of intention in the original TPB model (Ajzen, 2015). Likewise, in some of the food-related behavior studies it has been revealed that injunctive norms are the major predictor in determining food intention (Dunn et al., 2011). The injunctive norms also play a vital role in measuring intention toward zero waste among North American consumers (Ertz et al., 2021). Recently, injunctive norms cannot be ignored in measuring intention to reduce food waste (Filimonau et al., 2023). Despite this, prior research exhibited that injunctive norms do not play a significant role in the intention to adopt (Leeuw et al., 2015). The inconsistent findings in prior studies related to the effect of injunctive norms on the intention require more investigation.

The interplay between moral and injunctive norms in shaping hotel employees' intentions towards food waste, it is critical to recognize the complex interdependence of self-driven and societal influences. While individual moral beliefs fundamentally guide personal attitudes towards

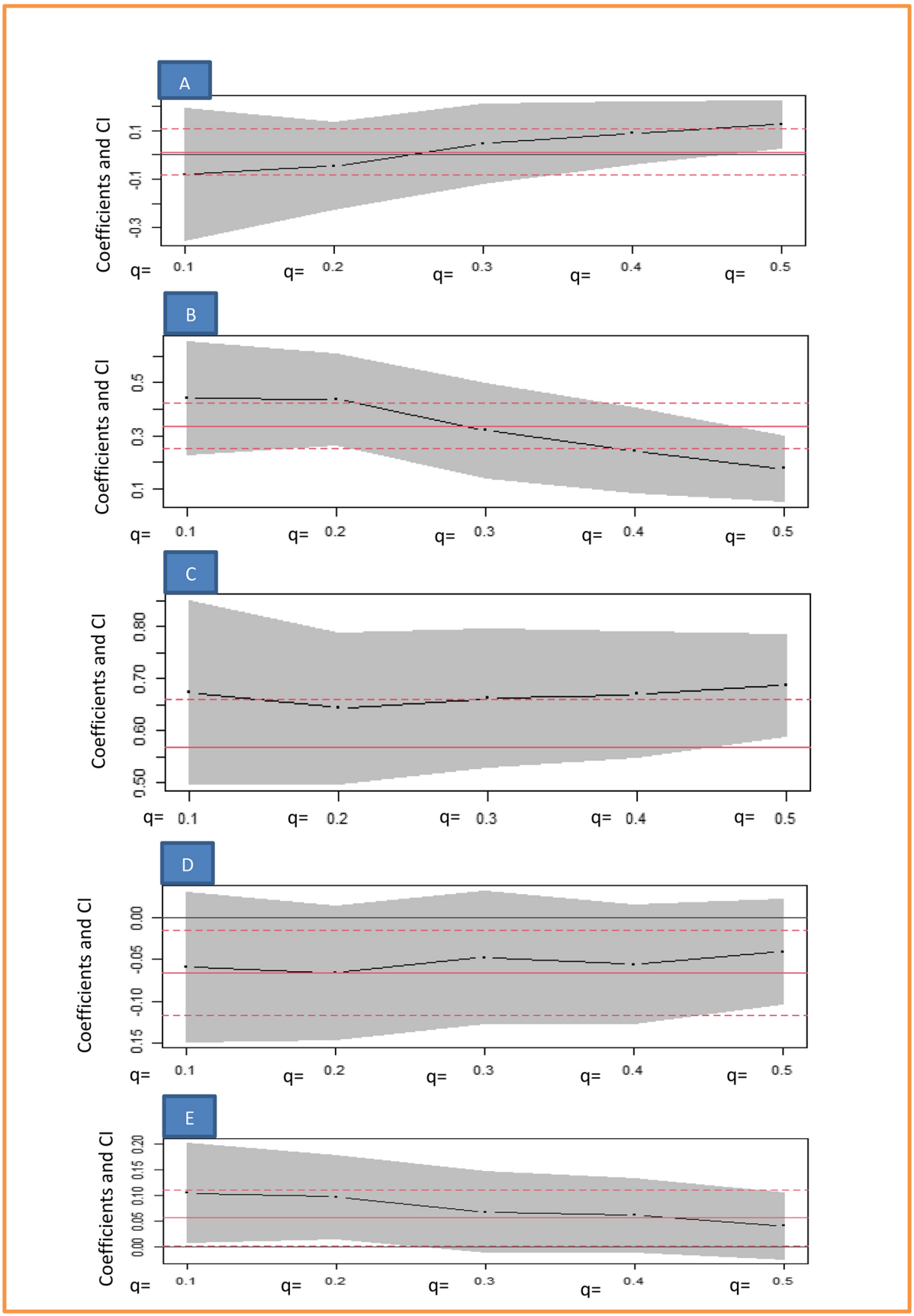
A
Coefficients and CI
0.1
-0.1
-0.3
q= 0.1
q= 0.2
q= 0.3
q= 0.4
q= 0.5
B
Coefficients and CI
0.5
0.3
0.1
q= 0.1
q= 0.2
q= 0.3
q= 0.4
q= 0.5
C
Coefficients and CI
0.80
0.70
0.60
0.50
q= 0.1
q= 0.2
q= 0.3
q= 0.4
q= 0.5
D
Coefficients and CI
0.00
-0.05
-0.10
0.15
q= 0.1
q= 0.2
q= 0.3
q= 0.4
q= 0.5
E
Coefficients and CI
0.20
0.15
0.10
0.05
0.00
q= 0.1
q= 0.2
q= 0.3
q= 0.4
q= 0.5

**Fig. 2** **A** Estimated coefficient for "moral norms" in the deciles between 0.10 and 0.50 and its 95% confidence interval (grey area). Included the OLS estimate in red. **B** Estimated coefficient for "injunctive norms" in the deciles between 0.10 and 0.50 and its 95% confidence interval (grey area). Included the OLS estimate in red. **C** Estimated coefficient for "Environmental concerns" in the deciles between 0.10 and 0.50 and its 95% confidence interval (grey area). Included the OLS estimate in red. **D** Estimated coefficient for the interaction "Moral x Concerns" in the deciles between 0.10 and 0.50 and its 95% confidence interval (grey area). Included the OLS estimate in red. **E** Estimated coefficient the interaction "Injunctive x Concerns" in the deciles between 0.10 and 0.50 and its 95% confidence interval (grey area). Included the OLS estimate in red

waste reduction, the perceived societal expectations (injunctive norms) also play a significant role in reinforcing these attitudes, especially within a communal workplace setting. This dual influence suggests that strategies aimed at reducing food waste in hotels need to consider both the intrinsic moral convictions of employees and the broader societal norms they navigate. Furthermore, acknowledging the variability of these norms across different cultural and organizational contexts is essential, as it highlights the need for tailored approaches in implementing effective food waste reduction initiatives within the hospitality industry.

Our findings revealed that environmental concern positively and significantly affects the intention not to waste food. This is in line with Ertz et al. (2021) who stated that environmental concern is significantly associated with zero waste behavior. Besides, environmental concern is attached to individuals' core beliefs and values regarding environmental issues (Schultz et al., 2013) that can change individuals' normal behaviors to pro-environmental behaviors (Richardson, 2013).

Our results revealed that environmental concern positively and significantly moderates the association between injunctive norms and the intention not to waste food in the case of very wasteful employees (who are more reluctant to adopt behaviors that avoid food waste ($q < 0.30$)). This is a significant contribution of the current study confirming the importance of interaction between environmental concern and injunctive norms in reducing the intention of very wasteful employees to waste food.

## Theoretical contribution

From a theoretical perspective, our study had made several significant contributions to food waste literature in the hospitality industry by using the TPB model. The current results recognized the importance of moral norms for the intention not to waste food. Several researchers used moral norms in their studies to explain the intention not to waste food through the norm-activation model (Wang et al., 2021) and stimulus-organism-response theory (Talwar et al., 2022). In contrast, our research used TPB to measure the intention not to waste food through moral norms. The reason for using moral norms under TPB is that Ajzen (1991) suggested the addition of moral norms in the TPB model. Injunctive norms were also used to determine the intention not to waste food in light of TPB. Injunctive norms are deemed the strongest predictor of intention in the TPB original model (Ajzen, 2015).

The current study showed that environmental concern has a positive and significant impact on the intention not to waste food. Our results also revealed that environmental concern positively and significantly moderates the association between injunctive norms and the intention not to waste food in the case of very wasteful employees (who are more reluctant to adopt behaviors that avoid food waste ($q < 0.30$)). In the original TPB model, Ajzen (1991) overlooked to see the influence of the environment on intention. Few researchers extended the TPB model by adding environmental concern to measure intention to reduce food waste (Filimonau et al., 2023) and food waste behavior (Aydin & Aydin, 2022).

The current study has responded to previous scholars' calls for more research on food waste in the hotel industry (Amicarelli et al., 2022; Demetriou, 2022; Derhab & Elkhwesky, 2023; Filimonau & Tochukwu, 2020; Filimonau et al., 2019), at the employee level (Goh & Jie, 2019; Okumus, 2020), and especially in specific African (Mensah & Blankson, 2013) and developing countries (Kattiyapornpong et al., 2023).

## Managerial implications

Hotel management could enhance moral norms of hotel employees in the food and beverage department if it wants to increase their intention not to waste food. Hotels should make their employees feel guilty about people who do not have enough food and the environment when they waste food. Having moral norms is critical to encourage hotel employees to save extra food and guide customers to take home excess food (Olsen et al., 2010; Stancu et al., 2016).

Hotel management should launch an awareness campaign among employees to affirm that wasting food is an immoral behavior. It is critical to promote moral responsibility among hotel employees to save food and make them understand the negative results of food waste like the number of hungry people in the entire world, its contribution to greenhouse gas emissions, depletion of resources, and food insecurity (Ding, 2022).

Conducting training and communication programs about food waste prevention can assist hotel employees in developing their skills, green values, and knowledge about how

**Table 4** Hypotheses testing results

| # | Hypotheses | Results | Decision |
|---|---|---|---|
| H1: | Moral norms have a positive and significant effect on intention not to waste food | (+ **effect.** median employee)<br>(**No effect**. wasteful employee) | Partially supported |
| H2: | Injunctive norms have a positive and significant effect on intention not to waste food | (+ **effect.** median employee)<br>(+ **effect.** wasteful employee) | Supported |
| H3: | Environmental concern positively moderates the association between moral norms and intention not to waste food | Effect of concern on intention (+ median employee)<br>Concern **x** moral (**No moderation**. median employee)<br>Concern **x** moral (**No moderation**. wasteful employee) | Not supported |
| H4: | Environmental concern positively moderates the association between injunctive norms and intention not to waste food | Effect of concern on intention (+ wasteful employee)<br>Concern **x** injunctive (**No moderation**. median employee)<br>Concern **x** injunctive (+ **Moderation effect**. very wasteful employee) | Partially supported |

to decrease food waste (Luu, 2020; Wang et al., 2023). Posters, newsletters, workshops, presentations, and social media could be used (Lockyer & Cook, 2018; Luu, 2021).

Hotel management should concentrate on injunctive norms if its aim is to increase the intention of food and beverage employees not to waste food. Hotels must understand that injunctive norms positively determine the intention to reduce food waste (Goh et al., 2022) even if the people are not religious (Filimonau et al., 2023). Hotel employees need to be trained on reusing leftovers, recycling the food waste generated, and not loading the environment with food waste (Elkhwesky, 2022; Stancu et al., 2016; Vizzoto et al., 2021). Hotels could provide employees with training to address environmental and social problems, such as creating healthy and sustainable cuisine to prevent food waste (ACCOR, 2019).

Environmental concern is significantly linked to zero waste behavior (Ertz et al., 2021). Environmental concern is linked to people core values and beliefs about environmental issues (Schultz et al., 2013) that can change normal behaviors of people into pro-environmental behaviors (Richardson, 2013). Hotel management could enhance environmental concern of food and beverage employees in hotels to increase their intention not to waste food. Training employees must focus on indicating if things continue on their present course, we will soon experience a major ecological catastrophe, humans are severely abusing the environment, the balance of nature is very delicate and easily upset, and ultimately humans are prone to serious risks if they upset the laws of nature (Chang et al., 2015; Kim & Choi, 2005).

Providing employees with recognition, bonuses, or rewards when they avoid or reduce food waste is critical for their encouragement (Ehler, 2016; Rettie et al., 2012; Wansink & van Ittersum, 2013). Hotels could help their employees to reduce food waste by reevaluating their operational strategies with regard to service and menu design, recipe cards, and food preparation methods (Bharucha, 2018; Juvan et al., 2018).

It is crucial to implement focused interventions for employees who have a strong tendency to engage in wasteful behavior (with a propensity score below 0.50). Considering the lack of effectiveness of moral norms, interventions should prioritize strengthening injunctive norms and incorporating environmental concern. Customized communication, discreet behavioral prompts, and active employee participation can improve the efficacy of efforts targeting the reduction of food waste in this specific group of individuals.

Well-defined instructions that are in line with established rules, tailored messages related to the environment, and strategic methods to influence behavior can improve the effectiveness of initiatives to reduce food waste. By incorporating strong feedback systems and inclusive employee engagement strategies that are linked to established norms, hotels can create opportunities for ongoing improvement and shared accountability.

Our study subtly emphasizes that although customers are key contributors to food waste in hotels, the influence of employees on customer behaviors and decisions remains a crucial factor in managing waste. Employees, through targeted training, can effectively guide customers toward optimal portion sizes using menu descriptions and verbal suggestions. Additionally, they can advocate for the utilization of doggy bags by transparently offering this option and ensuring easy access to containers. Importantly, employees shape social norms through their interactions; by demonstrating practices like encouraging customers to take leftovers or segregating waste, they reinforce positive waste management behaviors. Their influence extends beyond direct actions; fostering strong moral and injunctive norms against waste among employees can inspire them to educate and model these values to customers. This approach not only aligns with waste reduction strategies but also supports the hotel's financial

and sustainability objectives, underscoring the potential of leveraging employee roles in diminishing customer-induced waste in hotel operations.

Employees have the ability to shape customer behavior by advocating for reduced portion sizes, presenting sharing alternatives, and imparting knowledge about sustainable options. By adhering to moral and injunctive norms, employees have the ability to establish a culture that places importance on minimizing food waste and cultivating a sense of responsibility among customers. Enforcing staff training on waste reduction strengthens these standards and promotes proactive actions. Through exemplifying behavior and fostering transparent communication, employees play a pivotal role in influencing customer attitudes towards reducing food waste in hotel environments. This research highlights the crucial importance of employees in promoting positive behavioral change and cultivating a sustainable dining environment. The provided recommendations specifically target the findings of the study, presenting a more detailed approach to minimizing food waste in the workplace.

## Limitations and future research

Given that the current research was performed with food and beverage employees in Egyptian hotels and using a non-probability sampling approach, generalizability cannot be ascertained. Therefore, we recommend that upcoming scholars test this model in diverse contexts worldwide. Our findings revealed that moral norms have no effect on the intention not to waste food in the case of wasteful employees (who are more reluctant to adopt behaviors that avoid food waste ($q < 0.50$)) in the Egyptian context, but such impacts might be found elsewhere.

By focusing primarily on moral and injunctive norms and intention not to waste food, we only partially tested Ajzen's theory of planned behavior. Examining how employees' attitudes towards food waste also influence their intention not to waste food could provide a more comprehensive test of the theory. In addition, we treated environmental concern as a moderator in this study. Future work may consider environmental concern as a direct predictor to employees' intention not to waste food and attitudes towards food waste to gain additional insights. Broadening the scope to include attitudes and examining different relationships among variables could help create a more holistic picture of the psychological factors driving pro-environmental behaviors like reducing food waste in the workplace. Finally, the current study could be replicated by surveying hotel employees with considering different hotel categories or classifications.

# Annex 1

**Table 5** Individual, composite reliability, and average variance extracted

| Variable | Item | Standardized coefficient (std.all) | Composite reliability (omega) | Variance extracted (avevar) |
|---|---|---|---|---|
| Moral norms | When I waste food, I feel guilty about people who do not have enough food | 0.917 | | |
| | When I waste food, I feel guilty about the environment | 0.949 | | |
| | Wasting food gives me a bad conscience | 0.912 | 0.947 | 0.856 |
| Injunctive norms | One should reuse leftovers | 0.873 | | |
| | One should recycle the food waste generated | 0.902 | | |
| | One should not load the environment with food waste | 0.886 | 0.917 | 0.787 |
| Environmental concern | If things continue on their present course, we will soon experience a major ecological catastrophe | 0.887 | | |
| | Humans are severely abusing the environment | 0.941 | | |
| | The balance of nature is very delicate and easily upset | 0.934 | | |
| | Humans are prone to serious risks if they upset the laws of nature | 0.902 | 0.954 | 0.837 |
| Intention not to waste food | I intend not to throw food away in food and beverage department in the near future (e.g. next one/two weeks) | 0.902 | | |
| | My goal is not to throw food away in food and beverage department in the near future (e.g. next one/two weeks) | 0.946 | | |
| | I will try not to throw food away in food and beverage department in the near future (e.g. next one/two weeks) | 0.896 | 0.938 | 0.835 |

# Annex 2

**Table 6** Estimation of the model without control variables

| Coefficients | Value | Std.Error | T-value | Pr (>\|t\|) |
|---|---|---|---|---|
| (Intercept) | 5.455 | 0.019 | 288.475 | 0.000 |
| MORAL | 0.134 | 0.043 | 3.114 | 0.002 |
| INJUNCTIVE | 0.171 | 0.057 | 2.979 | 0.003 |
| CONCERN | 0.686 | 0.045 | 15.284 | 0.000 |
| CONCERNxMORAL | -0.039 | 0.029 | -1.317 | 0.188 |
| CONCERNxINJUNCTIVE | 0.039 | 0.030 | 1.286 | 0.199 |

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**Data availability** The data that support the findings of this study are available in Supplementary Material 1.

## Declarations

**Declarations of interest** The authors have no relevant financial or non-financial interests to disclose.

**Ethical considerations** Before collecting data, the questionnaire began with a brief introduction indicating the aim of the research and ensuring confidentiality. Additionally, the participants were not requested to declare their identities. All respondents signed the informed consent, affirming that they are hotel employees working in the food and beverage department, and they voluntarily agreed to be a part of the current study.
This study was approved by the University of Pharos Research Ethics Committee (Code of Faculty 05; Serial 148), Alexandria, Egypt.



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