A Conceptual Framework: A Social Cognitive Theory to Determine Malaysian Consumer of Food Waste Behavioural Intention in the Hospitality and Food Service Sector

Nadzirah Maripat*

Faculty of Tourism and Hospitality, i-CATS University College, Malaysia
nadzirah.maripat@icats.edu.my

Abstract

The study on food waste behaviour is lacking in social theories. Since food waste prevention and management is a manifestation of behavioural change and pro-environmental behaviour change, this field may be proposed by the other's implementation of behavioural theories and frameworks. Although Malaysians have a high awareness of the cause and effect of food waste, they lack action to reduce food waste. In the hospitality and food service sector, the issue of food waste management has a major impact and will affect the profit and cost of the industry. Consumer's attitude and behaviour to reduce food waste is an effective way of promoting sustainable practice. The consumer can play a significant role in monitoring and suggesting the best strategies to deal with food waste. This article proposes a conceptual framework adopted from social cognitive theory that may be used to understand the strategies to find out an individual's food waste behavioural intention in the hospitality and food services sector. Based on the framework, self-efficacy acts as a mediator factor known as a personal factor that can affect the consumer's behaviour, which is the feeling of guilt towards food waste and subsequently leads to positive behavioural intention towards food waste. The article is survey-based research that uses an online survey questionnaire to Malaysian consumers who have eaten in restaurants. The finding predicts to provide knowledge in the hospitality and food services sector by investigating the variables that lead to the food waste behavioural intention among Malaysian consumers.

1   Introduction

Food waste is a global issue, including in Malaysia (Phooi et al., 2022). These issues have negative effects such as increasing food production, affecting human health, and

causing environmental degradation. Malaysia generally produces more plant-based food waste compared to animal-based food waste.

Although Malaysians have a high awareness of the cause and effect of food waste, they lack action to reduce food waste (Chun T'ing et al., 2021). According to a report by SWCorp Malaysia, the Movement Control order (MCO) period in Malaysia saw a decrease in the amount of food waste generated daily in Kuala Lumpur, from average of 2.1 tonnes in March to 1.7 tonnes in April, reflecting a 0.3 tonnes reduction in food waste daily (Bernama, 2020). This decrease was attributed to most restaurants catering to takeaways and home deliveries and their shorter operating hours, as well as the cancellation of all wedding functions and other events and gatherings. However, when the MCO went into the conditional and recovery phases, food waste figures in Kuala Lumpur started creeping up again to an average of 2.2 to 2.3 tonnes a day in Jun and July when movement restrictions were eased, and most economic sectors reopened. It is important to investigate consumer attitudes towards their food waste behaviour and to find strategies to reduce food waste.

In the hospitality and food service sector, the issue of food waste management is a major impact and will affect the profit and cost of the industry (Dhir et al., 2020). Wastage in restaurants occurs during food preparation, which embraces all operational processes and procedures attributed to food transportation, handling storage, and cooking and it further arises from consumers' plates (FAO, 2019). Hence, consumers are one of the factors contributing towards food waste in the hospitality and food services sector (Filimonau et al., 2020). Consumer's attitude and behaviour to reduce food waste is an effective way of promoting sustainable practice. The consumer can play a significant role in monitoring and suggesting the best strategies to deal with food waste.

Food waste management is holistic in nature and decisions are influenced by the activities involved at different levels, therefore, there is also a need for organizational, individual and policy-level intervention from countries that propose to conduct the study (Munir, 2022). The study on food waste behaviour is lacking in social theories. Several theories have been assigned to consumer behaviour to understand pro-environmental behaviour patterns including the theory of Planned behaviour (TPB), (Filimonau et al., 2020) and Social Practice Theory (SPT), (Hennchen, 2019). Since food waste prevention and management is a manifestation of behavioural change and pro-environmental behaviour change, this field may be proposed by the other's implementation of behavioural theories and frameworks.

Therefore, this article proposes a conceptual framework adopted from social cognitive that may be used to understand the strategies to find out an individual's food waste behavioural intention. Based on the framework, self-efficacy acts as a mediator factor known as a personal factor that can affect the consumer's behaviour, which is the feeling of guilt towards food waste and subsequently leads to positive behavioural intention towards food waste.

2 Literature Review

2.1 Food Waste in the Hospitality and Food Service (HaFS)

The hospitality and food services sector includes all outlets that serve food and/or drinks for immediate intake in an out-of-home setting (WRAP, 2013). It includes several key sub-domains, such as restaurants, hotels, health care, education, and staff catering (Dhir et al., 2020). Reducing food waste in the hospitality and food service sector can have several benefits such as reducing greenhouse gas emissions, conserving natural resources such as water and energy, saving money by reducing the amount of food that is thrown away, and addressing food insecurity by making more food available for those in need (FAO, 2019).

The hospitality and food service sector is a significant contributor to food waste (Papargyropoulou et al., 2019). The study investigated the pattern and cause of food waste generation in the HaFS sector in Malaysia and identified the suitable food waste prevention measures. The study found that nearly a third of all food was wasted in the case studies presented, and almost half of it was avoidable. Preparation waste was the large fraction, followed by buffet leftover and then customer plate waste. Food waste represented an economic loss equal to 23% of the value of food purchased.

Another finding show that food waste in the hospitality industry is a serious socio-economic issue (Filimonau & Delysia, 2019). Teller et al. (2018) stated that the importance of involving the consumer side when it comes to preventing and reducing food waste is at the stores level. Food waste is the outcome of customer purchase decisions as well as retailer and food service provider decisions that influence consumer behaviour (FAO, 2019).

In the HaFS sector, food waste can occur at various stages such as procurement, storage, preparation, service, and consumption (Papargyropoulou et al., 2019). Food waste is generated throughout the food chain which is about food surpluses (Filimonau & Delysia, 2019). The use of food intended for human consumption for non-human reasons, the diversion of food to feed animals, or the disposal of edible food are all examples of food waste. Limited shelf life, the necessity for food goods to match aesthetic standard in terms of colour, shape, size, and demand variability are the factors that contribute to food waste at the retail level. At various levels of the food supply chain, several determinants of food waste are identified. Simultaneously, several initiatives to reduce food waste are recommended. Both determinants and strategies are broad terms that pertain to two key domains: technological and behavioural. Acting both sides is likely to be a practical option of reducing excessive food waste (Morone et al., 2019).

Therefore, food waste prevention strategies should be twofold, tackling both the way the hospitality and food service sector outlets operate and organize themselves, and the customers' social practices related to food consumption.

2.2   Food Waste Behavioural Intention

Food waste behavioural intention refers to the willingness of individuals or households to reduce, reuse, and recycle food waste (Chengqin et al., 2022). Due to the growing global concern over food waste and its effects on several factor, this concept has come to gain attention from researchers. The increased intention to separate food waste will result from a positive attitude, which will then convert into action. Most of the studies used the theory of planned behaviour (TPB) to better understand the behavioural intention of individuals towards reducing food waste. The TPB suggests that an individual's attitude, perceived behavioural control, and personal norms have a significance on their behavioural intention to reduce food waste (Chun T'ing et al., 2021).

Another study aims to understand the gap between intention and behaviour in relation to food waste reduction among young consumers. It combines variables from different theories, such as the theory of planned behaviour, social practice theory and value-belief-norm theory to explain the gap (Fraj-Andrés et al., 2023). The findings imply that the intention-behaviour gap can be bridged by raising knowledge of the negative effect of food waste. Differences between intention and behaviour can be explained by certain household routines, leftover management and planning techniques, personal emotions, marketing activities and the applicability of best-before and expiration date on the food.

The study investigates the determinant of household behavioural intention towards reducing, reusing, and recycling food waste management (Chengqin et al., 2022). In this study, the motivation to participate, ability to participate, and perceived benefits are important factors that significantly influence household attitudes. Household attitudes have a significant effect on household behavioural intention. In addition, household behavioural intention has a significant effect on household reduction, reuse, and recycling behaviour.

2.3   Social Cognitive Theory

Social Cognitive theory is one of the social theories developed by Stanford psychologist Albert Bandura and emphasizes the learning that occurs within a social context. This theory is an extension of social learning theory that includes the effects of the cognitive process on an individual's behaviour and on the environment that influences them. SCT is a learning theory that explains how people learn and behave in a social context. In this view, humans are active agents who can both influence and are influenced by their environment.

In social cognitive theory, triadic reciprocal causation is a model composed of three factors that influence behaviour: the individual, their environment, and the behaviour itself. This model also known as reciprocal determinism. According to this theory, human behaviour is shaped by the interaction between personal factors (such as cognitive and affective factors), environmental influences, and behavioural patterns. The three factors are interdependent and interact with each other bidirectionally.

Aktas et al., (2018) identified three elements of social cognitive theory that are related to food waste behaviour, self-efficacy and consumer behaviour. By understanding these elements of social cognitive theory, the researchers can develop strategies to help individuals change their food waste behaviour by increasing their self-regulation skills, self-efficacy beliefs, and positive outcome expectations.

Social cognitive theory emphasizes the idea that much of human learning and study takes place in a social setting. By interacting with others, people learn knowledge, skills, strategies, beliefs, rules, and attitudes (Schunk & Usher, 2012). Through their observations and interactions with others, people also learn about the appropriateness, usefulness, and consequences of behaviour.

SCT also emphasizes the idea that people have capabilities that distinguish them as human beings and motivate them to strive for a sense of agency. Among the most important of these capacities are the vicarious, symbolic, and self-regulatory processes. The ability to learn vicariously enables individuals to acquire beliefs, cognitions, affects, skills, strategies, and behaviours. This ability also allows individuals to regularly shape their lives as they select the environmental features (e.g., individual materials) to which they wish to pay attention.

Social Cognitive theory can be applied to reduce food waste behaviour (Attiq et al., 2021). SCT address the central role of cognitive, vicarious, self-reflective, and self-regulatory (Bandura, 1986) capabilities on the interdependency of personal, environmental, and behavioural attributes.

2.4 Consumer Feeling Guilt Towards Food Waste

In increasing the focus on food waste and sustainability research, researchers have related attitudes with food waste as they consider that a pro-environmental attitude and the possession of a sense of civic duty towards society will lead consumers to reduce food waste (Hossain & Haque, 2022).

Consumers feel guilty when food is wasted, is one sort of attitude used in food studies (Aydin & Yildirim, 2021). The finding implies that moral attitudes stand out as a crucial factor in predicting behaviour related to food waste. Food waste is effectively decreased when consumers can determine that wasting food violates their moral principles and has serious negative effects on other people and the environment (Chang, 2021). The guilty is implicated in a variety of wasteful behaviour (Parizeau et al., 2015). This guilt is in line with the prevalent concept of food waste reduction as mainly an individual issue. Strongly opposed to food waste, consumers who intuitively think that wasting food is immoral would waste less, modify their eating and purchasing habits, and take greater initiative to learn about food conservation.

Customers are more willing to engage to achieve an objective if they believe they can perform it. Customers' moral norms will strongly influence their decision to reduce food waste if they believe they can act in the ways required to minimise food waste (Kim et al. 2020). Customers are more likely to intend to finish everything on their plates or take it home when they feel guilty or uncomfortable about leaving the food behind.

Feeling guilty plays an influential role in food consumption and wastage (Soorani & Ahmadvand, 2019). The result from previous study suggests that emotional (anticipated guilt) was positively associated with food waste reduction behaviour (Attiq et al., 2021). Negative emotions like guilt and regret were observed to be a significant predictor of behavioural intention (Soscia et al., 2019). The hypothesis is propose below:

H1: Consumer feeling guilty is positively associated with waste behavioural intention.

From another context, self-efficacy can be affected by behavioural factors and by the outcomes of actions. Self-efficacy concentrates on the cognitive aspects of mastery and effectiveness rather than more emotional dimensions like needs, intention, values, and efficacy feelings (Bandura, 1977). Jang & Lee, (2022) found that the awareness of the food waste problem positively affected self-efficacy. Therefore, the hypothesis will are based on the previous argument:

H2: Consumer feeling guilty is positively associated with self-efficacy towards food waste behaviour.

2.5 Self-efficacy

Self-efficacy is one of the roles of personal cognitive factors in the triadic reciprocity model in Social Cognitive Theory (Bandura, 1977). Self-efficacy describes the individual's beliefs in their ability to conduct a sequence of actions to effectively reduce food waste. The decision to engage in a particular behaviour depends on their level of self-efficacy. The potential of reducing food waste increases with high self-efficacy.

The individual will develop positive attitudes towards engaging in their behaviour that their belief produces desirable outcomes. Self-efficacy will have a positive impact on behaviour intention to reduce food waste (Wang et al., 2022). In the context of food waste behavioural intention, self-efficacy can play a crucial role. Self-efficacy is an important determinant of household food waste behavioural intention among Malaysian households. By increasing individuals' self-regulation skills, self-efficacy beliefs and positive outcome expectation, strategies can be developed to help reduce food wate. As a result, the study developed the following hypothesis:

H3: Self-efficacy is positively associated with food waste behavioural intention.

Self-efficacy is also a key motivational process in social cognitive theory (Schunk DiBenedetto, 2021). Individuals get information about their self-efficacy from four main sources: mastery experiences (interpretation of actual performances), vicarious (modelled) experiences, social persuasion, and physiological markers.

Ding, (2022) found that restaurant customers' self-efficacy toward food waste reduction positively influenced their food waste reduction intentions. The study also found that self-efficacy played a mediating role in the relationship between perceived collective efficacy and food waste reduction. Hence, Social cognitive theory can explain how self-efficacy can influence Malaysian consumer behaviour in reducing food waste.

It is also crucial to imply that, when it comes to addressing the issues of food waste behaviour, not only study on individual behaviour, but this study also suggests that the cognitive function which is self-efficacy is predicted as a motivator that could influence positive food waste behavioural intention. Hence, the study proposes the hypothesis below:

H4: Self-efficacy mediates the relationships between consumer feeling guilty and food waste behavioural intention.

In this framework, consumers feeling guilty can influence self-efficacy, which in turn will influence the behavioural intention of food waste. When consumers feel guilty about contributing to food waste, they may be motivated to act by developing strategies to reduce waste. Their belief in their own ability to change through self-efficacy further strengthens their intention to engage in behaviours to minimise food waste. The conceptual model is shown in Figure 1.
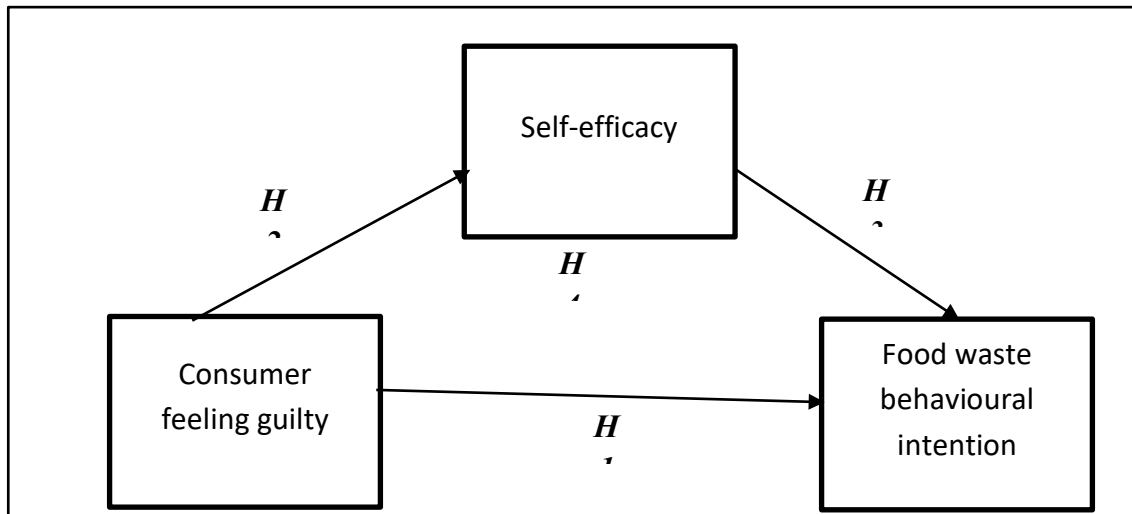

Figure 1: A proposed conceptual framework.

3   Methodology

The research methodology section explains the study setting, sampling, data collection and survey instrument and Data analysis.

3.1   Study Setting

The study setting will be conducted in Malaysia and will focus on restaurant consumers. Based on the data population in Malaysian 2022, the working age between 15 and 64 years old is 22.7 million which is equivalent to 69.5%. This age group includes a wide range of life stages, from teenagers to adults, each with different food habits and waste behaviours. People in this group also tend to have the decision-making power in their households when it comes to food purchase and preparation, which directly impacts food waste.

3.2 Sampling, Data Collection and Survey Instrument

The target population is restaurant customers in Malaysia. The study uses convenience sampling, and the data will be collected online through Google Forms. A screening question at the beginning of the survey would be terminated if the participant had no recent eating-out activity. Krejcie & Morgan (1970) argue that a minimum of 384 responses is an appropriate sample size to statistically represent a population of 75,000 to 1, 000,000. The population of Millennials in Malaysia exceeds 1,000,000, so 384 sample sizes are required in this study.

A set of questionnaires about food waste behaviour that focuses on consumer feeling guilty and their concern about food waste, self-efficacy and food waste behavioural intention. Based on previous research, the items in the questionnaire are in English. Therefore, it will be translated into Bahasa Malaysia before being used for the actual survey. The procedure of translation will be using a back translation method (Brislin, 1970) which is the forward and backward translation process of the original English language version of a questionnaire by professional linguistic translators. The study is using a quantitative method, and an online survey questionnaire will be administered with the measurement using 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

3.3 Data Analysis

Once data is collected, data will be analysed. There are two stages in data collection. The first stage is the pilot study involving a minimum of 30 respondents. The second stage of data collection is fieldwork. Tabachnick et al. (2007) recommends using the confidence interval as a formula to calculate the sample size of the study. The confirmatory factor analysis (CFA) will be used to validate the measurement model using the data from this stage. Following the validation of the measurement model, the model will be changed to a structural model for hypothesis testing using structural equation modelling (SEM) because it is appropriate for a complex structural model with several constructs and relationships (Hair et al. 2019).

4 Contribution and Conclusion

This paper suggests a research proposal related to the dimensions of consumer feeling guilty, self-efficacy, and food waste behavioural intention to determine consumer behaviour intentions towards food waste in hospitality and food services. Consumers feeling guilty towards food waste behavioural intention will be driven by self-efficacy as a mediator to further explain the results of this study.

This study will contribute to three aspects. The first contribution is the development of a new research model. The finding will bridge the knowledge gap by identifying behavioural factors that are both, directly and indirectly, present among Malaysian consumers and that influence food waste behaviour intention. This study will integrate three constructs simultaneously in one model, namely consumer feeling guilty, self-efficacy, and food waste behavioural intention. As a result, four hypotheses are

proposed in the research model which is considered an important contribution to the existing literature.

The second contribution is the selection of the study population. This study will focus on the study of consumer behaviour intention among Malaysian consumers towards food waste. Malaysian consumers should be responsible for their emotion which is their feeling guilt towards food waste. Consuming food responsibly has a significant influence on consumer behaviour. Assessing the population is important to provide valuable input to stakeholders in the food and beverage industry to formulate food waste management strategies.

The third contribution is to highlight the practical implications of the study. The finding of this study will benefit the private sector, particularly food and food materials merchants including grocery stores, restaurants, cafes, and hotels by training their employees in effective and efficient methods for managing food during the purchasing, preparation, and sale of food materials. Restaurant managers can use insights from consumer behaviour studies to plan menus that reduce food waste. This might include offering smaller proportion sizes or dishes that use commonly wasted ingredients. By understanding numerous methods and information concerning the management of food purchasing, food preparation and food waste minimization, consumers will also profit from the study. The study will also give direction to the consumer to build awareness and motivate them on the issue of food waste behaviour. Identifying consumer attitudes towards their feelings will affect their behaviour to reduce food waste in hospitality and food service.

 The study has a limitation on a sample study of only Malaysian consumers who have eaten in the restaurant. In future research, the suggestion is to study consumer behaviour when using online food delivery and consumers who take away food.

Understanding of food waste behavioural intention is another component of achieving the United Nations Sustainable Development Goals, specifically, SDG Target 12.3 aims to halve per capita food waste at the retail and consumer level by 2030. By reducing food waste, it can improve sustainability by changing the consumer attitude towards food waste behaviour. Therefore, knowing the nature of consumers feeling guilty towards food waste behavioural intention with support by internal factors which is self-efficacy will help the industry understand consumer behaviour and formulate strategies to manage food more effectively.

5   About the author

Nadzirah binti Maripat is a PhD candidate at Universiti Teknologi MARA, Puncak Alam. Her research interests include consumer behaviour, food and beverage management, and sustainability of the hospitality and tourism industry.

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