International Marketing Trends Conference

Responsibility in food waste behaviours: an interpretive framework

Chiara Scrimieri, Maria Colurcio, Alberto Pastore

To cite this paper:

C. Scrimieri, M. Colurcio, A. Pastore (2023), " Responsibility in food waste behaviours: an interpretive framework", Proceedings of 22th International Marketing Trends Conference 2023, Paris, ed. Alberto Pastore, Julien Schmitt, Julio Jimenez, Klaus-Peter Wiedmann, Paris-Venice Marketing Trends Association

 ISBN 978-2-490372-16-4

Responsibility in food waste behaviours: an interpretive framework

Authors

- Chiara Scrimieri, Ph.D. Student in Management, Banking & Commodity Sciences, Department of Management, Sapienza University of Rome, Via del Castro Laurenziano, 9 - 00161 Rome, Italy, chiara.scrimieri@uniroma1.it.
- Maria Colurcio, Full Professor of Marketing, Department of Legal, Historical, Economic and Social Sciences, University of Catanzaro "Magna Græcia", Viale Europa - 88100 Catanzaro, Italy, mariacolurcio@unicz.it.
- Alberto Pastore, Full Professor of Management, Department of Management, Sapienza University of Rome, Via del Castro Laurenziano, 9 00161 Roma – Italy, alberto.pastore@uniroma1.it.

Abstract

Food waste is one of the most sensitive issues in the world today. Decision-makers and policy-makers addressing the causes and consequences of this phenomenon have found solutions that involve changing consumer behaviour in both the domestic/private and public/hospitality contexts of consumption. The growing trend of eating out has indeed contributed to an increase in food waste and poses major challenges for restaurants. The literature on this topic has grown exponentially over the last decade. However, little has been said about the consequences of and related to repeated behaviour. The aim of this paper is to define an interpretive framework to improve understanding of the consequences of food waste behaviour and prevent repeated behaviour by applying the perspective of attribution theory.

1. Introduction

Food waste is one of the most sensitive issues in the world today, identified by the United Nations as one of the Sustainable Development Goals (SDGs) to be achieved by 2030.

According to the FAO, one-third (approximately 90 million tonnes) of all food produced on Earth is lost or wasted every year. As a result, 253 km3 of drinking water is wasted (FAO, 2021). Furthermore, food waste going to landfills alone is responsible for 3% of total climate change gases (European Commission, 2021), with 6% of global greenhouse gas emissions linked to food waste.

Decision-makers and policy-makers who are investigating the causes and consequences of this phenomenon have found solutions involving changing consumer behaviour in both domestic/private and public/restaurant contexts of consumption (Stöckli et al., 2018). The increasing trend of eating out has indeed contributed to an increase in food wastage behaviour and food waste-related challenges for restaurants (Thyberg & Tonjes, 2016).

The literature on this topic has grown exponentially over the last decade. Various causes of food waste have been identified (Graham-Rowe et al., 2015; Visscheret al., 2016; Hebrok, Heidenstrøm, 2019), comprehensive frameworks have been developed to systematise different variables (Boulet et al., 2021; Principato et al., 2021), and the factors identified impact all stages of consumer food management (Principato et al., 2021).

However, despite the numerous contributions exloring the causes that lead individuals to waste food, little has been said about the consequences of food wastage behaviour in terms of behaviour repetition.

One factor that, to our knowledge, seems to be underresearched is the perception of responsibility associated with wasteful behaviour. Since the perception of responsibility in relation to a completed action is the strongest form of personal control (Bandura, 1997), understanding the consumer's cognitive process after performing a behaviour's FW helps to understand the likelihood that the behaviour is desirable.

This theoretical perspective, called attribution theory, is widely used in social psychology and consumer behaviour studies, and we believe it can make an important contribution to understanding and interpreting consumer behaviour in relation to food waste.

The aim of this paper is to develop a model for interpreting motivations and perceptions of responsibility in relation to food waste, with particular reference to consumer behaviour in restaurants.

As some studies have shown that restaurants define and drive social norms that promote anti-consumer food waste behaviour (e.g., asking people to take away leftovers) (Templeton et al., 2016), a better understanding of consumer behaviour in restaurants in relation to food wastage can provide useful insights for defining clear strategies and actions to address anti-consumer food wastage behaviour.

The study aims to define a model for understanding the reasons and causes of food wastage in restaurants to establish guidelines for reducing wastage and promoting virtuous behaviour on the part of both customers and the restaurant. By applying the interpretive lens of attribution theory, the study aims to explore how the mechanism of attributing responsibility works for consumers when they waste food in restaurants (whether they see the responsibility on the restaurateur or on themselves).

The study contributes to the theory by expanding knowledge of interpretive models of food-wastage behaviour and offering a new perspective. Such a model provides insights and guidelines to identify the key aspects that need to be emphasised to trigger virtuous supply and consumption behaviour to tackle the issue of food waste.

The paper is structured as follows. In the second section, a literature review on food waste and consumer behaviour is given, and in the third section, the issue of food waste in restaurants is outlined. The fourth section presents the proposal for a conceptual framework. The fifth section draws the main conclusions, highlighting the main implications and the need for further research.

2. Theoretical background

Attention to food wastage and consumer behaviours has steadily increased over the last decade (Schanes et al. 2018; Boulet et al., 2021; Principato et al., 2021). To date, the causes of family and nonhousehold food waste behaviours have been studied by different disciplines (Quested et al., 2013) using different methodologies (Boulet et al., 2021) and from different perspectives (Principato, 2018).

Several factors have been identified as determinants of food waste behaviour: psychological, social, situational, demographic and socioeconomic factors (Principato et al., 2021). These factors influence food waste behaviour at all stages of the food waste journey (Principato, 2018), both at home and in restaurants. In particular, it shows how all these factors and others (factors outside the individual, such as technological and regulatory factors) influence all stages of consumer food management: “planning, stockpiling, storage, preparation, consumption, disposal and the buyers' decision-making process: planning, preacquisition, acquisition, preparation, consumption, and disposal” (Principato et al., 2021).

Although it is a multidisciplinary field of research, the studies of FW are mostly sociological and psychological in nature (Roodhuyzen et al., 2017; Schanes et al., 2018). The most commonly used theories are Social Practise Theory and the Theory of Planned Behaviour (TPB), the latter being widely used due to its adaptability to analyse different concepts not included in the original model (Collins and Mullan 2011).

Table 1.1 summarises the main findings related to the main theoretical approaches that have been used to identify the factors that influence food waste behaviour.

2.1 Food waste in restaurants

The issue of food waste has increasingly becoming a challenge for hospitality and restaurant operators, a trend confirmed by both practice and theory.

In terms of practice, organisations and companies in the food and restaurant supply chain are working hard to reduce resource use in the industry and to raise consumer awareness of more conscious food behaviours. Many organisations and agreements are emerging around the world with the aim of combating food waste and loss in the food industry (e.g., The Courtauld Commitment 2030; WRAP; The Australian Food Pact). UNEP, the UN Environment 2021 programme, produced the annual Waste Index Report to support the goals of SDG 12.3 by providing countries with a methodology to measure food waste (at household, foodservice and retail levels) to track the nations' path towards meeting the SDG goal. The recent campaign "Guardians of Grub - RISE UP AGAINST FOOD WASTE", launched by WRAP - Waste and Resources Action Programme (https://guardiansofgrub.com), expresses a strong commitment to food waste prevention and involves different actors as "guardians" (catering, pubs, universities, etc.). The campaign aims

to raise awareness of actors of the hospitality and food service industry with respect to the issue of food waste and to link virtuous behaviour with the creation of value (economic, environmental and social) for stakeholders and all their interest groups. In addition, many small, medium and large restaurants offer a service that promotes the disposal of food waste. However, food waste in the service sector depends on various causes, such as excessive preparation, excessive portions, and difficulty in predicting the number, preferences and diet of customers (Sakaguchi et al., 2017), so campaigns to promote customer awareness are a possible and necessary strategy.

Tab: 1.1 – The main theoretical approaches to food waste behaviour.

Factors that influence food waste behaviours	Theoretical approach	Authors
Attitudes. "F.W. is negatively associated with attitudes about the value of food and food waste, and is positively associated with concerns about food safety and desires to eat healthily and 'fresh'." (Boulet et al., 2021)	Theory of Planned Behaviour (TPB); Self-affirmation theory	Graham-Rowe, Jessop, Sparks 2015; 2019; Visschers et al. 2016; Aschemann-Witzel, Hooge, Almli, Oostindjer 2018;
Perceived norms. The value of food and the need to reduce food waste are generally associated with lower levels of food waste.	Social norms; TBP	Parizeau et al. 2015; Aschemann-Witzel et al. 2015; Stancu et al. 2016; Nikolaus et al. 2018; Principato 2018;
Personal values and identity. "An individual's moral standpoint towards waste, their broader ideologies and their particular self-identity. The relationship of these factors to FW is usually described generally, with no direction of association shown" (Boulet et al.,2021).	Value theory; TPB	Secondi, Principato, Laureti 2015; Graham-Rowe et al. 2015; Hebrok, Boks 2017;
Awareness. An individual's awareness and knowledge of FW as an issue, together with its environmental and social consequences. Greater levels of awareness are generally associated with less FW.	Theory of Cognitive Dissonance	Neff, Spiker, Truant 2015; Principato 2018; Giordano, Alboni, Falasconi 2019;
Perceived control. Lower perceived control about food is usually associated with higher amounts of FW.	TPB	Russell et al. 2017
Intention. Higher intentions to reduce FW are usually associated with lower food waste amounts.	TPB	Stefan et al. 2013; Toma, Costa Font, Thompson 2017
Habits and emotions. "While generally understudied, evidence suggests that food related behaviours of an individual have a significant habitual and emotional component". (Boulet et al., 2021)	Extended TPB; Social practice theory	Watson, Meah 2012; Russell et al. 2017; Hebrok, Heidenstrøm 2019; Revilla, Salet 2018;
Skills and knowledge. Knowledge, skills and confidence in food storage, preservation, cooking, date-labels and meal planning (shopping list) are associated with lower levels of FW.	Not specific theory	Barr 2007; Falcon, Grey, Virtue 2008; Quested, Ingle 2013; Parry, LeRoux, Quested, Parfitt 2014; Boulet 2018;
Demographics. (gender, age, educational, income levels). F.W is positively associated with income level, and negatively associated with educational level and age. Associations with gender are contradictory across studies and less well evidenced for other demographic factors.	TPB	Thyberg, Tonjes 2016; Hebrok, Boks 2017;
Marketing. Marketing, advertising and sales strategies, package sizes, food pricing and promotion of particular cosmetic and freshness standards are related with FW	Not specific theory	Williams, Wikstr¨om, Otte-rbring, L¨ofgren, Gustafsson 2012; Aschemann-Witzel et al. 2016;

Source: Authors

On the theoretical side, a search of the Web of Science (October 2022) for the keywords food-waste and restaurant (*) yielded 315 articles in English starting significantly with the year 2006 (5 articles were counted in the years before). In the last five years, the number of publications on food waste has increased, as well as the interest of management scholars; in fact, the journals classified as management journals (Journal of Cleaner production, Journal of Hospitality Management, British Food Journal, Journal of Food Products marketing, Journal of Sustainable Tourism, Sustainability) contain a large part of the publications.

Most articles focus on food waste management in restaurants (Filimonau et al., 2020; Filimonau et al., 2019; Principato et al., 2018) and the factors that determine consumer behaviour (Huang & Tseng, 2020; Coskun & Yetkin Ozbuk, 2020), as well as commitment to consumer-friendly food waste behaviour in restaurants (Filimonau et al., 2020).

This evidence shows that there is a need for research to deepen the awareness-raising process that forms the basis of virtuous behaviour with respect to food waste in restaurants. The application of the lens of attribution theory will help to explore the antecedents of consumer behaviour in restaurants.

3. The interpretative framework

In this study, we propose to investigate the causes of FW behaviour by means of the explanation given by the consumer himself before a food wasting behaviour performed by him or another person, as well as the relationship between the attribution of responsibility for the behaviour and future behaviour.

To do this, we use attribution theory, which is widely used in studies of consumer behaviour but which no one has yet used to explain food wasting behaviour and the intention to repeat it.

Attribution theory is "a theory that describes the cognitive processes people use to determine the causes of behaviour and events in their world" (Mullen & Johnson, 2013, p. 174). Heider (1958) first coined the term "attribution theory" in his book *Psychology of Interpersonal Life*.

The theory found its way into social psychological studies, beginning with Harold Kelley's 1967 analysis *of attribution theory in social psychology* and Eduard Jones et al.'s (1971) attribution: perceiving the causes of behaviour. Today, it is used in consumer behaviour studies, especially to explain postpurchase behaviour and brand evaluation.

Weiner's (1980) widely used attribution model, adapted to consumer behaviour studies (Weiner, 2000), conceptualises three causal dimensions of attribution that lead to an overall judgement of responsibility or culpability: (1) the locus of the behaviour (cause), which can be internal or external to the actor; (2) the stability of the behaviour, which can be unchanging or temporary; and (3) the controllability of the behaviour, which can be internal or external to the actor's control. When the environment is internal and the behaviour is stable and controllable, observers tend to attribute responsibility to the actor who performed the action, and the resulting emotions such as guilt or anger are directed against the actor. In contrast, when the environment is external and the behaviour is temporary and uncontrollable, blame tends to be attributed to external factors (Folkes, 1984).

In the case of consumer behaviour, the consumer always tries to find a causal attribution for what happens, especially when a negative effect has already occurred or may occur later. Indeed, the consumer asks himself why this result was achieved and not another, whether the purchase he's about to make or has already made will turn out to be positive or not. The answers he receives on his way of exegesis of the facts influence the choice of his future behaviour.

The process that leads to the identification of a product is partly linked to the expected satisfaction that may result from its consumption. Assignment thus has preconditions related to expected satisfaction, namely, ethical values, emotions, and prior beliefs. For example, one may choose a certain restaurant because it is recommended in a magazine, because one has heard a lot about it from a friend, because one is convinced by reviews on certain platforms (e.g., Tripadvisor, The Fork, etc.) and for many other reasons. After the experience, especially if it is not satisfactory, the consumer will try to understand the reason for this dissatisfaction. In fact, attributions play a role in the decision-making process after the first outcome and before the next choice (behavioural repetition).

Based on these premises, we have identified the consumer's attribution process as a key antecedent to interpret the behaviour of FW and to address further behaviours.

Our research topic is therefore as follows:

Analysing the consumer's attribution process prior to FW restaurant behaviour is critical to understanding which behaviours will be implemented in the future or whether wasteful behaviour will be repeated or 'corrected'.

We believe that the consumer who engages in wasteful behaviour in a restaurant will be tempted to repeat the same behaviour if he or she holds the restaurateur responsible for it and if this behaviour is seen as stable and controllable by the restaurateur; otherwise, he or she will be tempted to "correct" this

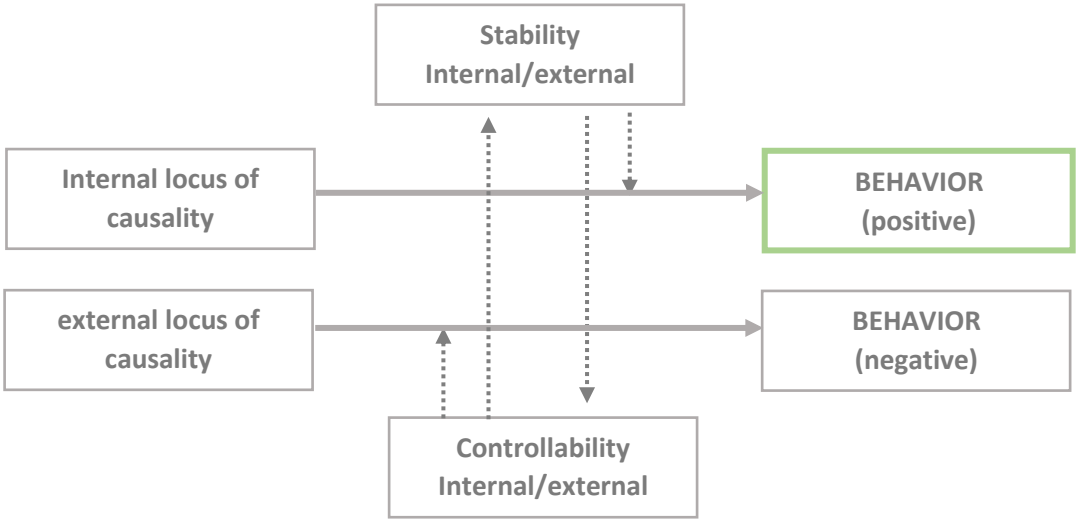
behaviour if he or she is held directly responsible for it, which is supported by the instability and uncontrollability of the behaviour itself.

Thus, following the proposed framework (Process of Causal Attribution - Behaviour of FW. Figure 1), if the consumer attributes responsibility to himself (internal locus of causality), he must show a positive reaction towards food waste (low probability of repeating the behaviour) and towards the restaurateur (e.g., positive word of mouth, repurchase intention). These behaviours are moderated by the variables stability and controllability in their two modes (internal or external).

If, on the other hand, responsibility is external (external locus of causality) and attributed to the restaurateur, the behavioural response is negative both for the intention to waste and towards the restaurateur (e.g., negative word of mouth, intention to complain).

All factors cited in the literature as determinants of food waste behaviour are considered antecedents. This study aims to analyse the cognitive process that follows the behaviour of FW. To our knowledge, no study has yet focused on what happens after FW behaviour.

Figure 1: The conceptual framework



Source: Authors

4. Implications and further research

"In recent years, out-of-home food waste has grown exponentially and therefore represents an important focus of attention" (Principato et. at 2021). The food industry produces 10.5 million tons of food waste (equivalent to 21 kg per person) each year in Europe.

The food service sector contributes 12%-14% of the total food waste in the EU (FUSIONS, 2016; ADEME, 2013; Waste Watcher Report, 2015; Ministerio de Agricoltura, Alimentacion y Medio Ambiente, 2013). According to a study conducted in the UK (WRAP, 2013), food waste in restaurants occurs during the preparation phase (45%), during food deterioration (21%) or due to client leftovers (34%). Other studies have shown that the main source of food waste in restaurants is the leftovers of customers (Stenmarck et al. 2016).

Our endeavour in this paper has been to define an interpretive framework to enhance the understanding of the determinants of consumer behaviour in food waste by applying the perspective of attribution theory.

The emerging framework is the result of an ongoing investigation, including a series of experiments on consumers in different types of restaurants. We chose to test our theory with experiments to address the limitation of surveys: the difference between what people do and what they say they do (Ganglbauer et al., 2013; Jerolmack & Khan, 2014; Kusenbach, 2003). We also chose restaurants rather than private homes for our studies because there are fewer variables to control for (e.g., cooking skills, packaging).

Although our findings are still preliminary, the paper provides some insights for future research.

First, the study highlights the need for better research on the determinants of awareness and conscientiousness of consumer behaviour to achieve the 12.3 UN goal of the 2030 Agenda. Second, further

studies should test the framework through empirical research with both consumers and restaurants. Third, further studies could explore the validity of the framework for different cultural and geographical contexts.

The study highlights some interesting implications for the development of food waste strategies and food waste management in the hospitality industry. As behaviour is the result of a complex process that is influenced and moderated by external and internal variables, the need for a systematic strategy for food waste management in restaurants emerges. Previous studies have already highlighted the normative role of restaurants in raising awareness and encouraging customers to adopt positive behaviours (e.g., taking away food waste) (Stoeckli et al. 2018), but the Process of Causal Attribution - Behaviour interpretive framework (FW) emphasises the complexity of the process and the need to act on multiple fronts to address wasteful behaviour. It is clear that a waste manager in a restaurant needs to have marketing and logistics skills as well as gastronomic and culinary knowledge to plan the menu and manage the difficult task of predicting the number of customers and their food preferences.

The main limitation of the paper is its conceptual nature and unfinished stage: the food waste phenomenon is empirical, and the framework needs to be tested and tried in practice. In addition, the formulation of behaviour may be influenced by contextual factors and vary from one restaurant to another, as well as depend on the degree of normative prompting about FW that an individual restaurant practises.

References

Aschemann-Witzel, J., de Hooge, I., Amani, P., Bech-Larsen, T., & Oostindjer, M. (2015). Consumer-related food waste: Causes and potential for action. *Sustainability,* 7(6), 6457–6477.

Aschemann-Witzel, J., de Hooge, I. D., & Normann, A. (2016). Consumer-related food waste: Role of food marketing and retailers and potential for action. *Journal of International Food & Agribusiness Marketing*, 28(3), 271–285.

Aschemann-Witzel, J., de Hooge, I. E., Almli, V. L., & Oostindjer, M. (2018). Fine-tuning the fight against food waste. *Journal of Macromarketing*, 38(2), 168–184.

Boulet, M, Hoek, A.C., Raven, R. (2021). Towards a multi-level framework of household food waste and consumer behaviour: Untangling spaghetti soup. *Appetite,* 156.

Boulet, M. (2018). *Love food hate waste: Literature and practice review* (Retrieved from Melbourne).

Ganglbauer, E., Fitzpatrick, G., Comber, R. (2013). Negotiating food waste: Using a practice lens to inform design. *ACM Transactions on Computer-Human Interaction*, 20 (2), 1–25.

Graham-Rowe, E., Jessop, D. C., & Sparks, P. (2015). Predicting household food waste reduction using an extended theory of planned behaviour. *Resources, Conservation and Recycling*, 101, 194–202.

Graham-Rowe, E., Jessop, D. C., & Sparks, P. (2019). Self-affirmation theory and pro-environmental behaviour: Promoting a reduction in household food waste*. Journal of Environmental Psychology*, 62, 124–132.

Giordano, C., Alboni, F., & Falasconi, L. (2019). Quantities, Determinants, and Awareness of Households' Food Waste in Italy: A Comparison between Diary and Questionnaires Quantities'. *Sustainability,* 11(12), 3381.

Hebrok, M., Boks, C. (2017). Household food waste: Drivers and potential intervention points for design – an extensive review. *Journal of Cleaner Production*, 151 (Supplement C), 380–392.

Hebrok, M., Heidenstrøm, N. (2018). Contextualising food waste prevention - Decisive moments within everyday practices. *Journal of Cleaner Production*. 210.

Jerolmack, C., Khan, S. (2014). Talk is cheap: Ethnography and the attitudinal fallacy. *Sociological Methods & Research*, 43(2), 178–209.

Kusenbach, M. (2003). Street phenomenology: The go-along as ethnographic research tool. *Ethnography*, 4(3), 455–485.

McAdams, B., von Massow, M., Gallant, M., & Hayhoe, M. A. (2019). A cross industry evaluation of food waste in restaurants. *Journal of Foodservice Business Research*, *22*(5), 449-466.

Nikolaus, C. J., Nickols-Richardson, S. M., & Ellison, B. (2018). Wasted food: A qualitative study of U.S. young adults' perceptions, beliefs and behaviors. *Appetite*, 130, 70–78.

Parizeau, K., von Massow, M., & Martin, R. (2015). Household-level dynamics of food waste production and related beliefs, attitudes, and behaviours in Guelph, Ontario. *Waste Management*, 35, 207–217.

Principato, L. (2018). *Food waste at the consumer level: A comprehensive review*. Cham: Springer International Publishing.

Principato, L., Mattia, G., Di Leo, A., Pratesi, C.A. (2021), "The household wasteful behaviour framework: a systematic review of consumer food waste", *Industrial Marketing Management*, Vol. 93, pp. 641-649.

Quested, T., & Ingle, R. (2013). *West London food waste prevention campaign evaluation report*. Retrieved from United Kingdom.

Russell, S. V., Young, C. W., Unsworth, K. L., & Robinson, C. (2017). Bringing habits and emotions into food waste behaviour. *Resources, Conservation and Recycling,* 125, 107–114.

Sakaguchi, L., Pak, N., & Potts, M. D. (2018). Tackling the issue of food waste in restaurants: Options for measurement method, reduction and behavioral change. *Journal of Cleaner Production*, *180*, 430-436.

Secondi, L., Principato, L., & Laureti, T. (2015). Household food waste behaviour in EU-27 countries: A multilevel analysis. *Food Policy*, 56, 25–40.

Stancu, V., Haugaard, P., & Lähteenmäki, L. (2016). Determinants of consumer food waste behaviour: Two routes to food waste. *Appetite,* 96, 7–17.

Stenmarck, A., Jensen, C., Quested, T., Moates, G. (2016). Reducing food waste through social innovation. Estimates of European food waste levels. ISBN 978-91-88319-01-2.

Thyberg, K. L., & Tonjes, D. J. (2016). Drivers of food waste and their implications for sustainable policy development. *Resources, Conservation and Recycling*, 106, 110–123.

Toma, L., Costa Font, M., & Thompson, B. (2017). Impact of consumers' understanding of date labelling on food waste behaviour. *Operational Research*, 1–18.

Visschers, V. H. M., Wickli, N., & Siegrist, M. (2016). Sorting out food waste behaviour: A survey on the motivators and barriers of self-reported amounts of food waste in households. *Journal of Environmental Psychology,* 45, 66–78.

Weiner, B. (2000). Attributional thoughts about consumer behavior. *Journal of Consumer Research* 27 (3), pp. 382-387.

Williams, H., Wikström, F., Otterbring, T., Löfgren, M., & Gustafsson, A. (2012). Reasons for household food waste with special attention to packaging. *Journal of Cleaner Production,* 24, 141–148.