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Food Waste in Retail: Pitfalls and Actions

Retailers play an important role for food waste occurrence or avoidance as the interface between the supply chain and the household. By avoiding three pitfalls and considering three actions, retail businesses can reduce food waste without conflicting with other SDGs, while improving customers' perception of companies.

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Imagine you have bought two loaves of sliced wholegrain bread for the price of one because they were on offer. You and your family eat most of it, but before you get to the second half of number two, you find it has become moldy, and you throw the remaining slices in the bin. You feel a pang of guilt considering there are people on the planet who go hungry (more than 1/5 of the world's population lives under conditions of food insecurity (UN, 2015)). You might be aware that the use of natural resources and non-renewable energy for producing the bread has now been in vain. Possibly, the truck hauling your waste out of town will burn even more gasoline, while your bread slices will be incinerated or undergo anaerobic digestion in a waste treatment plant, or decompose in the landfill, emitting the climate gas methane. Above all, you might think that it was not that much of a bargain after all. Moreover, it does not provide you with the customer value you expect – neither as a consumer nor as a citizen.

Retail customers might entertain these thoughts when they waste food. Food waste has been in the media for quite some time, in particular since a range of documentaries, books, campaigners and non-governmental organizations worldwide have focused on the issue (Bloom, 2010; Juul, 2016; Stuart, 2009). In fact, one third of food is lost or wasted in the supply chain (FAO, 2011). Food waste reduction has been ranked as the third most important solution for reducing human carbon impact. Halving food waste by 2030 is a target of the United Nations Sustainable Development Goal (SDG) 12.3 (UN, 2015). In rich industrial countries, more than half of waste occurs at the end of the chain: at retailers, in canteens, and in consumer households (Alexander, Brown, Arneth, Finnigan, Moran, & Rounsevell, 2017; Kummu, de Moel, Porkka, Siebert, Varis, & Ward 2012; Xue et al. 2017). According to the project 'Drawdown' (referring to the point in the future when levels of greenhouse gases in the atmosphere stop climbing and start to steadily decline; see Website Drawdown), reducing food waste is a 'no regrets' solution for societies on the way towards reducing climate impact, as it is a win-win activity (Hawken, 2017). Globally, there is quite a consumer trend towards considering sustainability issues during purchase (Euromonitor, 2019).

Managers in today's retail environment can expect that it matters to consumers to an increasing degree whether or not marketing causes food waste, or whether retailers engage in activities to reduce and avoid food wastage. It has therefore implications for customer behavior and company brand image. However, sustainability in general and food waste in particular are complex issues. Different SDGs might be affected positively or negatively by the same company decision. Food choices are determined by diverse customer motives (Shepherd & Raats, 2006), and the food passes through various steps in the supply chain (Porter & Reay, 2016) and in consumer households (Block et al. 2016). Thus, there are trade-offs in food waste avoidance actions. This article outlines three pitfalls to consider and argues for the value of three approaches to reduce food waste in the retail sector.

Pitfalls

Reducing Packaging Can Be Detrimental to Food Waste Avoidance

There is a lot of talk about plastics in the ocean and the size and density of, for example, the 'great pacific garbage patch', and there are reports about the tides rubbing plastic into omnipresent micro plastics. Concerned consumers want to avoid plastic in their everyday life (Euromonitor, 2019) and are skeptical of packaging or even aggressively against it (Elgaaïed-Gambier, 2016; Foodnavigator, 2019). This consumer trend is taken up by companies that reduce packaging (Carlsberg, 2018) or pledge to switch to recycled or bio-based packaging (Unilever, 2017). Supermarkets react to the consumer demand when displaying their fruits and vegetables without any packaging at all – such as the 'nude' produce wall at the South African retailer Pick'n Pay (Supermarket & Retailer, 2019).

However, packaging is not only a marketing communication vehicle or branding instrument, as consumers often think. Packaging protects food from damage and contamination, prolongs shelf-life, and conveys important information on storage and handling to customers. Packaging thus reduces food waste in the supply chain, allows for longer storage and greater flexibility in use, and is a convenient place to read up on how to use, store, or freeze the product, right at the moment when the consumer, product in hand, ponders on this question (Wikström, Williams, Trischler, & Rowe,

2019). The environmental impact of packaging is dwarfed by the environmental impact of the food itself, as studies of various foods' life cycle impact show (Williams & Wikström, 2011). As one company representative puts it, 'global warming caused by food waste will kill more turtles than plastic' (Foodnavigator, 2019).

Therefore, it is better *not* to give in to consumer dislike of packaging just like that. Changing or reducing packaging for the sake of pleasing consumers might not necessarily serve the UN SDG best. Managers do not want their actions to be picked at as mere greenwashing at some later point (Testa, Miroshnychenko, Barontini, & Frey, 2018). A careful assessment of the trade-off for the respective food category is needed. Switching to a more environmentally friendly or no-frills packaging, or smart functions or subtle nudges that allow consumers to better portion or store food, might be better than no packaging at all, or packaging types or materials that backfire with regard to food waste. Until there are sector-wide and industry-agreed re-usable and fully circular packaging systems, it may be best to stand one's ground and communicate to consumers how much the packaging actually helps avoid food waste.

Abolishing Criticized Pricing Tactics Does Not Necessarily Solve the Issue

Quite a lot of criticism has been voiced with regard to pricing tactics such as buy-one-get-one-free (BOGOF) or price gradients where supersize packaging allows more savings per unit (Stuart, 2009). The marketing action of working with pricing in order to trigger sales is under scrutiny, arguing that these tactics lead to over-purchase and the items likely going to waste in consumer households (Neff, Spiker, & Truant, 2015). Some retailers, e.g., UK's Tesco and Danish Rema1000 (Aschemann-Witzel, Hooge, & Normann, 2016; Evans, Welch, & Swaffield, 2017), made the move to abolish BOGOF with the argument that this reduces the temptation to buy more than needed.

However, consumers' over-purchase behavior in the presence of pricing tactics might not be as common as it is believed. When asking consumers about food waste, they indeed point to a problem of buying too much (Farr-Wharton, Foth, & Choi, 2014; Porpino, Wansink, & Parente, 2016). But when studying the food waste amounts, consumers who are keen on price offers and looking for good deals have in fact been found to waste less food at home (Koivupuro et al. 2012; Silvennoinen, Katajajuuri, Hartikainen, Heikkilä, & Reinikainen, 2014). When consumers are asked directly about whether they waste food bought on price promotions, few

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report that this is what happens (Parizeau, Massow, & Martin, 2015). Instead, consumers who at one point of a survey agree that they look for offers and price reductions on groceries are less likely to report that they frequently create waste across a range of food products (Aschemann-Witzel, Haagen Jensen, Hyldetoft Jensen, & Kulikovskaja, 2017a; Jörissen, Priefer, & Bräutigam, 2015).

Therefore, it is probably not the use of pricing that contributes to food waste. Rather, it is the precise design of the pricing tactic in combination with how consumers deal with the price deal that is of relevance. It should be kept in mind that some economically vulnerable consumers benefit much from the savings that deals offer. Some pricing approaches can potentially contribute to food waste avoidance, as for example the buy-one-get-one-free-later offer (BOGOFL), a pay per weight scheme for fresh produce, or reducing the price when the item nears its expiration date (Theotokis, Pramatari, & Tsiros, 2012). The UK supermarket Tesco has been using BOGOFL deals (Tesco, 2010) arguing that this enables small households to claim their free second item the following week, ensuring they do not waste any over-purchase. The Danish retailer Rema1000 has switched from unified fresh produce prices (e.g., the same price for all cabbage heads, no matter the size) to pay-per-weight (Kulikovskaja & Aschemann-Witzel, 2017). The retailer argues that consumers do not have to rummage for the biggest unit; instead, consumers can select just the right size for their needs. This reduces spoilage and waste in the store, and the retailer can now order fresh produce from suppliers in all the diversity

of sizes and shapes in which it grows, reducing loss in the field. Nearly half of consumers would appreciate BOGOFL deals or expiration date-based pricing (Neff, Spiker, & Truant, 2015), thus these actions seem to reward companies with satisfied customers as well.

There is one important observation related to marketing tactics: Many food retail professionals might focus far too much on selling more to their customers. But when it comes to food, human physiology entails that when consumers buy more food than they need, they either become overweight and obese or end up wasting the excess food. Therefore, the focus should be shifted towards convincing consumers to spend their food budget on better quality food, including local, healthier, or more sustainable foods.

Suboptimal Food Gives a Poor Image – But May Be Sold Successfully With Good Communication

Media reports on food waste often deal with the fact that 'otherwise perfectly edible' food is wasted for a number of reasons. These reasons are in essence that the food item is suboptimal in some way or other (Hooge, Oostindjer, Aschemann-Witzel, Normann, Mueller Loose, & Lengard Almli, 2017). Fruits and vegetables might appear unattractive or be oddly shaped, thus not matching standards that allow to harmonize transportation logistics or aim at unified esthetics for the consumer (Hooge, van Dulm, & van Trijp, 2018). A suboptimal state can also be that the outer packaging is damaged (Raak, Symmank, Zahn, Aschemann-Witzel, & Rohm, 2017) or the food is approaching its expiration date, which reduces the flexibility for consumers in terms of when and how to use it. Many retailers want to offer their customers a broad assortment with optimal quality, and they fear that out of stock situations or incidents of suboptimal quality have negative consequences on store image and product quality perception. That is indeed correct – consumers make inferences from what they can visually observe on what they cannot assess directly, i.e., quality (Zielke, 2014). They make assumptions about the responsible conduct of employees, and their quality perception affects brand reputation (Akdeniz, Calantone, & Voorhees, 2013; Grappi, Romani, & Bagozzi, 2013). This also holds true when it comes to seeing suboptimal food in the store (Aschemann-Witzel, Gimenez, & Ares, 2021; Cooremans & Geuens, 2019).

However, this does not mean that retailers have to stick to displaying only perfect food items to consumers and waste the suboptimal. Nor does it mean that the only option for suboptimal products is to cart them off for donations and charity. Food is better donated than wasted (Aschemann-Witzel et al. 2017b; Papargyropoulou, Lozano, Steinberger, Wright, & bin Ujang, 2014). Food banks, however, need to build yet another logistical chain and have to shift the items to a new selling point, leading to further resource use and emissions. In addition, this leads to the separation of consumers into two classes: those buying the optimal items in the original outlet versus those receiving the suboptimal ones in the alternative stores or foodbanks. This does not necessarily support the SDG of greater equality. Moreover, in the long run, little will change in terms of consumer expectations regarding perfect fruits and vegetables if consumers are kept from seeing the diversity of natural shapes.

Therefore, it might be best for sustainability outcomes if both optimal and 'suboptimal' products can be sold in the same place. Retailers can take action to sell food off before it becomes suboptimal, or reframe how they offer the suboptimal food. To avoid food becoming suboptimal, increased efficiency of logistics in the supply chain and greater precision in knowing which foods are demanded where and in which quantities can reduce food waste considerably (Porter & Reay, 2016; De Steur, Wesana, Dora, Pearce, & Gellynck, 2016). To market suboptimal food, some retailers have successfully launched campaigns to communicate and sell 'inglorious' fruits and vegetables, such as the French Intermarché (Aschemann-Witzel, Hooge, & Normann, 2016; Vimeo, 2014). It appears that such communication efforts are rela-

Management Summary

Retailers play an important role in food waste occurrence or avoidance as they provide the interface between the supply chain and the household. By avoiding three pitfalls and considering three actions, retail businesses can reduce food waste without conflicting with other SDGs while improving customers' perception of companies. Managers should avoid increasing food waste when reducing (plastic) packaging waste. Pricing tactics should not be demonized across the board but chosen wisely to reduce food waste. Suboptimal food can be sold with success even though appearance is a cue for consumers' quality and store image perceptions. Food waste should be approached from a holistic point of view that also considers corporate brand image and employee satisfaction.

tively worthwhile for fresh produce (Aschemann-Witzel, Giménez, & Ares, 2018). One explanation could be that it is much easier to instill pity and affection for the misshaped and the ugly (Cooremans & Geuens, 2019) – as humans we have sympathy for these, and we like the underestimated underdogs or imperfect heroes because we can identify with them. Admittedly, such affection appears far less likely for the odd yoghurt pot close to the expiration date, or the juice bottle with a slightly rippled paper band. There is the risk that consumers are anxious about food safety (Watson & Meah, 2012) or fear contamination (White, Lin, Dahl, & Ritchie, 2016). For sure, retailers should not slacken their efforts regarding food safety (Kasza, Szabó-Bodi, Lakner, & Izsó, 2019), for their customers' as well as their own sake. It is important, however, to convey the correct interpretation and handling of date labelling (van Boxstael, Devlieghere, Berkvens, Vermeulen, & Uyttendaele, 2014) – and this includes communicating and showing to consumers that food past the 'best before' date is 'still good after' this date. Retailers should thus reduce the products in price or donate the food. Offering suboptimal food in the supermarket, in particular when accompanied by information referring to food waste avoidance (Aschemann-Witzel, 2018; Aschemann-Witzel, Giménez, & Ares, 2018; Kulikovskaja & Aschemann-Witzel, 2017; Theotokis, Pramatari, & Tsiros, 2012), has proven very successful.

Main Propositions

1. Reduction of packaging can increase, and abolishing pricing tactics does not necessarily alleviate, food waste.
2. Pricing mechanisms can reduce food waste if chosen smartly.
3. Suboptimal food can be sold in the store without affecting quality image if re-valued, price-reduced and actively communicated.

Actions to Take

The Power of Pricing

Among the many actions retailers can take, it seems that reducing the price of food which otherwise might be wasted is the most powerful. Quite often, consumers perceive a value decline in suboptimal foods that are misshapen, outwardly damaged, or close to the expiration date. However, with a price reduction offered in return, many are willing to spend the extra time needed for peeling a misshapen carrot, crush the partly broken biscuits to use them as a cake base, or change today's meal plan because they bought food items close to the date (or – depending on the food category – take home an item donated because it was past the date but is still safe to eat). And if you had planned to buy the category that you encounter reduced anyway, you will feel lucky you made a bargain and appreciate your supermarket's offer.

Retailers can thus use price reductions that reflect the reduced value in terms of convenience or flexibility of use. This option has been shown to work splendidly: it can sell nine out of ten items throughout the same day (Kulikovskaja & Aschemann-Witzel, 2017; Politiken, 2015) and is applied by quite a number of retailers (Aschemann-Witzel et al., 2017b). Collaboratively used apps allow customers to become aware of these offers in their nearest or preferred supermarket even before they enter the store (Ciulli, Kolk, & Boe-Lillegraven, 2020). To avoid having to bin the leftovers at closing time, bakeries, supermarkets and restaurants can use apps like Too Good to Go, which allow customers willing to be flexible to buy a surprise box of items at a lower price, ordering it in advance and picking it up when the store is closing (TooGoodtoGo, 2019). In both cases, the food item is sold at the same place without additional transport needed. Moreover, there are a range of companies as well as voluntary sharing sites that redistribute such surplus food (e.g., Foodsharing, Madame Frigo, etc.).

In addition, tweaking pricing tactics with food waste avoidance in mind also uses the appeal of pricing for food waste avoidance purposes. A BOGOFL offer keeps the second item virtually in stock, and it increases store traffic when customers are coming back for it. Vegetables paid per weight instead of per unit allow each consumer to choose just the right size – and the retailer can allow the supplier to supply all kinds of sizes instead of just a uniform size that would leave the rest on the field. This also shows how the retailer can positively impact the whole supply chain, getting foods into the store which would otherwise be wasted.

When consistently applied, customers get used to these measures and incorporate them into their shopping routines (Aschemann-Witzel, 2018; Aschemann-Witzel et al., 2017a). Moreover, when they are communicated and framed as anti-food waste actions, taking part in it is not a sign of cheapness or neediness (Aschemann-Witzel et al., 2020) but adds a glow of ethical consumerism and emotion (Cooremans & Geuens, 2019) to a rational choice.

Revalue Food Inside and Outside the Store

If suboptimal foods are sold at a reduced price, the margin for the retailer is reduced as well. However, another option is to revalue these items in some way or other. Smart ways of revaluing suboptimal foods for a second chance to be sold can improve the profitability of these approaches, that is, ensuring that there is a worthwhile business case. Retailers with an in-store kitchen can make smoothies or cook simple meals such as soups to serve as healthy on-the-go food for customers. This additional offer of ready to eat food or a food service outlet has been noted to increase store traffic and allows for a more diverse assortment (Aschemann-Witzel, Hooge, & Normann, 2016). If food products become suboptimal in the distribution chain before they reach the store, they can be transformed into new products. They can be revalued in the form of fruit paper, soup, or jam (Aschemann-Witzel et al., 2017b). Quite some examples have come to the market in which new start-ups make use of fruits and vegetables otherwise discarded by the wholesaler.

Look at the Holistic Picture – With Savings in the Supply Chain and Satisfied Employees

Finally, the complexity of sustainability and food waste calls for seeing the benefit of actions in a broader perspective. Not every food waste avoidance action is directly visible at the financial bottom line. However, a more efficient and collaborative supply chain that works together to reduce food loss and waste is likely more dependable and resilient, securing the input and products that the retailer needs. One point to consider is that food production is subject to natural variation, both in quality and quantity. Retailers could help buffer this variability by more flexible contracts with their suppliers and by promoting seasonal products and any oversupply to their consumers via appropriate marketing tactics (Feedback Global, 2020). Another observation is that in a very competitive retail environment some actions – in particular those that might come with some competitive disadvantage – can only get traction if all retailers do it, and thus voluntary agreements among competitors are required in order to bring the issue of food waste avoidance forward.

Generally, with retail power comes responsibility (Devin & Richards, 2016). Retailers are at the crucial interface between the end user and the supply chain (Eriksson, Ghosh, Matson, & Ismatov, 2017). Engaging in food waste avoidance actions and talking about these to stakeholders and customers can pay off more indirectly in terms of improved brand image, consumer trust, and corporate social responsibility (CSR) prizes, as in the case of the Danish retail chain Rema1000 (Politiken, 2013). Not least, a positive side effect of CSR engagement is that it attracts new talents and leads to more satisfied employees, as surely employees are not happy about having to bin foods (Gruber, Holweg, & Teller, 2016).

The topic of food waste is here to stay, and so is the question of how to tackle the sustainable development goals through business operations. Being aware of the pitfalls in navigating the discussion on how to address food waste in retail as well as knowing the actions that can help allow retail decision-makers to work effectively towards the goal of reducing food waste while improving customer value.

Lessons Learned

1. Move towards packaging waste reduction without inadvertently increasing food waste.
2. Choose pricing mechanisms that do not trigger overpurchasing but help sell surplus food otherwise wasted in the store.
3. Communicate how selling suboptimal food contributes to waste reduction.
4. Consider the value of food waste avoidance actions for the company's image and societal responsibility.

Literature

Akdeniz, B., Calantone, R. J., & Voorhees, C. M. (2013). Effectiveness of marketing cues on consumer perceptions of quality. The moderating roles of brand reputation and third-party information. Psychology & Marketing, 30(1), 76–89.

Alexander, P., Brown, C., Arneth, A., Finnigan, J., Moran, D., & Rounsevell, M.D.A. (2017). Losses, inefficiencies and waste in the global food system. Agricultural Systems, 153, 190–200.

Aschemann-Witzel, J., Hooge, I. de, & 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., Haagen Jensen, J., Hyldetoft, Jensen, M., & Kulikovskaja, V. (2017a). Consumer behaviour towards price-reduced suboptimal foods in the supermarket and the relation to food waste in households. Appetite, 116, 246–258.

Aschemann-Witzel, J., de Hooge, I. E., Rohm, H., Normann, A., Bonzanini Bossle, M., Grønhøj, A., & Oostindjer, M. (2017b). Key characteristics and success factors of supply chain initiatives tackling consumer-related food waste – A multiple case study. Journal of Cleaner Production, 155 (2), 33–45.

Aschemann-Witzel, J. (2018). Consumer perception and preference for suboptimal food under the emerging practice of expiration date based pricing in supermarkets. Food Quality and Preference, 63, 119–128.

Aschemann-Witzel, J., Giménez, A., & Ares, G. (2018). Consumer in-store choice of suboptimal food to avoid food waste. The role of food category, communication and perception of quality dimensions. Food Quality and Preference, 68, 29–39.

Aschemann-Witzel, J., Otterbring, T., de Hooge, I. E., Normann, A., Rohm, H., Almli, V. L., & Oostindjer, M. (2020). Consumer associations about other buyers of suboptimal food – And what it means for food waste avoidance actions. Food Quality and Preference, 80, 103808.

Aschemann-Witzel, J., Gimenez, A., & Ares, G. (2021). Suboptimal food, careless store? Consumers' associations with stores selling foods with imperfections to counter food waste in the context of an emerging country. Journal of Cleaner Production, 262(11), 121252.

Block, L., Keller, P., Vallen, B., Williamnson, S., Birau, M., Grinstein, A., Haws, K., LaBarge, M., Lamberton, C., Moore, E., Moscato, E., Walker Reczek, R., & Tangari, A. (2016). The Squander Sequence: Understanding Food Waste at Each Stage of the Consumer Decision Making Process. Journal of Public Policy and Marketing, 35(2), 292–304. https://doi.org/10.1509/jppm.15.132

Bloom, J. (2010). American Wasteland – How America Throws Away Nearly Half of Its Food (And What We Can Do About It). Boston: Da Capo Lifelong Books.

Carlsberg (2018). Carlsberg launches ground-breaking innovations to reduce plastic waste. Retrieved from https://www.carlsberggroup.com/newsroom/carlsberg-launches-ground-breaking-innovations-to-reduce-plastic-waste/

Ciulli, F., Kolk, A., & Boe-Lillegraven, S. (2020). Circularity brokers. Digital platform organizations and waste recovery in food supply chains. Journal of Business Ethics, 167, 299–331.

Cooremans, K., & Geuens, M. (2019). Same but different. Using anthropomorphism in the battle against food waste. Journal of Public Policy & Marketing, 38 (2), 232–245.

De Steur, H., Wesana, J., Dora, M. K., Pearce, D., & Gellynck, X. (2016). Applying Value Stream Mapping to reduce food losses and wastes in supply chains. A systematic review. Waste Management, 58, 359–368.

Devin, B., & Richards, C. (2016). Food waste, power, and corporate social responsibility in the Australian food supply chain. Journal of Business Ethics, https://doi.org/10.1007/s10551-016-3181-z

Elgaaïed-Gambier, L. (2016). Who buys overpackaged grocery products and why? Understanding consumers' reactions to overpackaging in the food sector. Journal of Business Ethics, 135 (4), 683–698.

Eriksson, M., Ghosh, R., Mattson, L., & Ismatov, A. (2017). Take-back agreements in the perspective of food waste generation at the supplier–retailer interface. Resources, Conservation and Recycling, 122, 83–93.

Euromonitor (2019). Top 10 Global Consumer Trends 2019. Retrieved from https://www.euromonitor.com/top-10-global-consumer-trends-2019/report

Evans, D., Welch, D., & Swaffield, J. (2017). Constructing and mobilizing 'the consumer'. Responsibility, consumption and the politics of sustainability. Environment and Planning A: Economy and Space, 49(6), 1396–1412.

FAO (2011). Global food losses and food waste – Extent, causes and prevention. Study conducted for the International Congress SAVE FOOD! at Interpack 2011, Düsseldorf, Germany. Swedish Institute for Food and Biotechnology (SIK), Gothenburg, Sweden, FAO, Rome, Italy.

Farr-Wharton, G., Foth, M., & Choi, J. H.-J. (2014). Identifying factors that promote consumer behaviours causing expired domestic food waste. Journal of Consumer Behaviour, 13(6), 393–402.

Feedback Global (2020). When there's no waste, there's a way (to net zero). Policy brief. Retrieved from https://feedbackglobal.org/wp-content/uploads/2020/10/Feedback-2020-When-theres-no-waste-theres-a-way-to-net-zero-low-res.pdf

Foodnavigator (2019). Consumer attitudes to plastic 'bordering on militant' but is food waste forgotten? Retrieved from https://www.foodnavigator.com/Article/2019/07/18/Consumer-attitudes-to-plastic-bordering-on-militant-but-is-food-waste-forgotten?utm_source=newsletter_daily&utm_medium=email&utm_campaign=18-Jul-2019&c=CrXlVfzD3pM8%2F7jnB8xCKQ%3D%3D&p2=#

Grappi, S., Romani, S., & Bagozzi, R. P. (2013). Consumer response to corporate irresponsible behavior. Moral emotions and virtues. Journal of Business Research, 66(10), 1814–1821.

Gruber, V., Holweg, C., & Teller, C. (2016). What a waste! Exploring the human reality of food waste from the store manager's perspective. Journal of Public Policy & Marketing, 35(1), 3–25.

Hawken, P. (2017). Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming. New York: Penguin.

Hooge, I. E. de, van Dulm, E., & van Trijp, H. C.M. (2018). Cosmetic specifications in the food waste issue. Supply chain considerations and practices concerning suboptimal food products. Journal of Cleaner Production, 183, 698–709.

Hooge, I. E. de, Oostindjer, M., Aschemann-Witzel, J., Normann, A., Mueller Loose, S., & Lengard Almli, V. (2017). This apple is too ugly for me! Food Quality and Preference, 56, 80–92.

Juul, S. (2016). Food waste. Retrieved from http://www.huffingtonpost.com/selina-juul/

Jörissen, J., Priefer, C., & Bräutigam, K.-R. (2015): Food waste generation at household level. Results of a survey among employees of two European Research Centers in Italy and Germany. Sustainability, 7(3), 2695–2271.

Kasza, G., Szabó-Bodi, B., Lakner, Z., & Izsó, T. (2019). Balancing the desire to decrease food waste with requirements of food safety. Trends in Food Science & Technology, 84, 74–76.

Koivupuro, H.-K., Hartikainen, H., Silvennoinen, K., Katajajuuri, J. M., Heikintalo, N., Reinikainen, A., & Jalkanen, L. (2012). Influence of socio-demographical, behavioural and attitudinal factors on the amount of avoidable food waste generated in Finnish households. International Journal of Consumer Studies, 36(2), 183–191.

Kulikovskaja, V., & Aschemann-Witzel, J. (2017). Food waste avoidance actions in food retailing: The case of Denmark. Journal of International Food & Agribusiness Marketing, 24(5), 522–538.

Kummu, M., de Moel, H., Porkka, M., Siebert, S., Varis, O., & Ward, P.J. (2012). Lost food, wasted resources: global food supply chain losses and their impacts on freshwater, cropland, and fertiliser use. The Science of the Total Environment, 438, 477–489.

Neff, R. A., Spiker, M. L., & Truant, P. L. (2015). Wasted Food: U.S. Consumers' Reported Awareness, Attitudes, and Behaviors. PLoS ONE. Retrieved from https://doi.org/10.1371/journal.pone.0127881

Papargyropoulou, E., Lozano, R., Steinberger, J. K., Wright, N., & bin Ujang, Z. (2014). The food waste hierarchy as a framework for the management of food surplus and food waste. Journal of Cleaner Production, 76, 106–115.

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

Politiken (2013). Rema 1000 vinder pris for kampagne mod madspild. [Rema 1000 wins price for campaign against food waste.] Retrieved from https://politiken.dk/forbrugogliv/forbrug/tjekmad/art5469980/Rema-1000-vinder-pris-for-kampagne-mod-madspild

Politiken (2015). Supermarkedernes nedsatte madvarer går som varmt brød [Reduced food items in supermarkets sell like hot cakes.] Retrieved from https://politiken.dk/forbrugogliv/forbrug/tjekmad/art5594440/Supermarkedernes-nedsatte-madvarer-g%C3%A5r-som-varmt-br%C3%B8d

Porpino, G., Wansink, B., & Parente, J. (2016). Wasted positive intentions. The role of affection and abundance on household food waste. Journal of Food Products Marketing, 22(7), 733–751.

Porter, S. D., & Reay, D. S. (2016). Addressing food supply chain and consumption inefficiencies. Potential for climate change mitigation. Regional Environmental Change, 16(8), 2279–2290.

Raak, N., Symmank, C., Zahn, S., Aschemann-Witzel, J., & Rohm, H. (2017). Processing- and product-related causes for food waste and implications for the food supply chain. Waste Management, 61, 461–472.

Shepherd, R., & Raats, M. (2006). The Psychology of Food Choice. Wallingford.

Silvennoinen, K., Katajajuuri, J. M., Hartikainen, H., Heikkilä, L., & Reinikainen, A. (2014). Food waste volume and composition in Finnish households. British Food Journal, 116 (6), 1058–1068.

Stuart, T. (2009). Waste. Uncovering the global waste scandal. London.

Supermarket & Retailer (2019). Pick n Pay introduces a packaging-free zone with nearly 90 products & expands its nude produce wall. Retrieved from https://www.supermarket.co.za/news-article.asp?ID=8276&CatTags=8-Going green

Tesco (2010). Tesco launches 'Buy One, Get One Free Later' deals. Retrieved from https://www.retail-week.com/grocery/tesco-launches-buy-one-get-one-free-later-deals-/5009717.article?authent=1

Testa, F., Miroshnychenko, I., Barontini, R., & Frey, M. (2018). Does it pay to be a greenwasher or a brownwasher? Business Strategy and the Environment, 27(7), 1104–1116.

Theotokis, A., Pramatari, K., & Tsiros, M. (2012). Effects of expiration date-based pricing on brand image perceptions. Journal of Retailing, 88(1), 72–87.

TooGoodtoGo (2019). Meet Too Good to Go. The #1 anti-food waste app. Retrieved from https://toogoodtogo.com/en

UN (2015). Sustainable Development Goals. Retrieved from https://sustainabledevelopment.un.org/sdgs

Unilever (2017). Unilever commits to 100% recyclable plastic packaging by 2025. Retrieved from https://www.unilever.com/news/press-releases/2017/Unilever-commits-to-100-percent-recyclable-plastic.html

Van Boxstael, S., Devlieghere, F., Berkvens, D., Vermeulen, A., & Uyttendaele, M. (2014). Understanding and attitude regarding the shelf life labels and dates on pre-packed food products by Belgian consumers. Food Control, 37, 85–92.

Vimeo (2014). Intermarche – 'Inglorious Fruits and Vegetables'. Retrieved from https://vimeo.com/98441820

Watson, M., & Meah, A. (2012). Food, waste and safety. Negotiating conflicting social anxieties into the practices of domestic provisioning. The Sociological Review, 60, 2_suppl, 102–120.

White, K., Lin, L., Dahl, D. W., & Ritchie, R. J. B. (2016). When do consumers avoid imperfections? Superficial packaging damage as a contamination cue. Journal of Marketing Research, 53(1), 110–123.

Wikström, F., Williams, H., Trischler, J., & Rowe, Z. (2019). The importance of packaging functions for food waste of different products in households. Sustainability, 11(9), 2641.

Williams, H., & Wikström, F. (2011). Environmental impact of packaging and food losses in a life cycle perspective: a comparative analysis of five food items. Journal of Cleaner Production, 19(1), 43–48.

Xue, L., Liu, G., Parfitt, J., Liu, X., Van Herpen, E., Stenmarck, Å., O'Connor, C., Östergren, K., & Cheng, S. (2017). Missing food, missing data? A critical review of global food losses and food waste data. Environmental Science & Technology, 51(12), 6618–6633.

Zielke, S. (2014). Shopping in discount stores. The role of price-related attributions, emotions and value perception. Journal of Retailing and Consumer Services, 21 (3), 327–338.