

**Reduce, reuse, rebrand?: the role of marketing in sustainable consumer engagement with
food waste and food insecurity**

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On my honor as a University Student, I have neither given nor received unauthorized aid on this
assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

The challenge with food loss and waste (FLW) and insecurity is optimization. The EPA estimates that 31% of the national food supply, 133 billion pounds at an estimated value of \$161.6 billion, went uneaten in 2010 while the United States Department of Agriculture (USDA) Economic Research Service reported that approximately one in ten Americans is food insecure (US EPA, 2016; *USDA ERS - Key Statistics & Graphics*, n.d.). The climate and global public health crises, Covid-19, encouraged businesses to innovate more creatively as supply chain shutdowns, unionized strikes, and poor agricultural production disrupted the global food system. Released in 2015, the United Nations 2030 Agenda for Sustainable Development sets seventeen goals for combating the climate crisis, improving health and education, reducing inequalities, and promoting economic growth by 2030 (United Nations, n.d.). United Nations Sustainable Development Goals (SDGs) Zero Hunger (2), Sustainable Cities and Communities (11), and Responsible Consumption and Production (12) are the most relevant goals for managing sustainable food waste systems. Sustainability, for the purposes of this paper, is defined as the ability of a system or environment to be maintained for the use and benefit of future generations. The SDGs challenge businesses to advance the global agenda through a commitment to innovating sustainably.

Another challenge with FLW and optimization is the potential discontinuity in marketing strategies that influence and are influenced by consumer behavior and actual business practices. This tactic is commonly referred to as “greenwashing.” Greenwashing specifically relates to the mismarketing of products or services to make a business appear more environmentally friendly when it is not. Food industry related groups adopted strategies to promote sustainability either through public relations (PR) mechanisms or adjustments in practice.

Complexities in FLW management and insecurity are often treated as mutually exclusive concerns. *In the turn of the century U.S., how have interest groups competed to influence the life-cycle management of perishable food products?* Interest groups include grocers, 501c3 organizations dedicated to food redistribution, regulatory agencies, and trade associations. This paper will first review three selected publications that discuss the successes of sociotechnical solutions to the problem of FLW and insecurity and will be followed by an argument discussing these points: first, the influence of media on consumer behavior in a history of solid waste management (SWM); then, the adaptation of interest groups to consumer desires as those desires are altered by global concerns; and, finally, general mismarketing through the use of sustainability semiotics and the potential uses of choice architecture. *The divergence between interest groups' appearances and reality of sustainable materials management and marketing alter consumerism of perishable food products.*

Literature Review

Researchers have investigated the connection between food insecurity and waste management, but it is important to note the distinction between food loss and food waste. Food loss refers to the loss in quality or quantity of food based on the decisions and actions in the food supply chain, excluding retail, food service providers, and consumers (*The State of Food and Agriculture 2021 | FAO | Food and Agriculture Organization of the United Nations, n.d.*). Much of what this paper discusses relates to food waste – the loss in quality and quantity of food based on decisions and actions of retailers, food services, and consumers. This paper expands on the impact of retail and food service marketing as both contributing to and influenced by consumerism. Studies on behavioral consumerism have proven vital in determining optimal food distribution and disposal, supporting the idea of a circular economy (CE). The CE is described in

the scope of this paper as a “systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution” by disrupting the relationship between finite resources and consumption (*Circular Economy Introduction*, n.d.). Though the CE describes a framework for optimization, the global economy still operates primarily linearly. The literature reviewed in this paper discuss successful strategies for optimizing FLW and insecurity.

The Food and Agriculture Organization of the United Nations (FAO) estimated that approximately a third of the amount of food produced for human consumption was wasted in 2007 according to Munesue et al (2014). The United States Environmental Protection Agency (EPA) also indicates that food waste makes up the largest category of landfilled municipal solid waste in the United States (US EPA, n.d.). Munesue et al (2014) found that reductions of food losses in developing regions reduced the amount of undernourished people and environmental impacts from agricultural practices. Through developing a food trade model that tracks food losses and waste on global food security, natural resources, and greenhouse gas (GHG) emissions using data from 2007, researchers found that alternative postharvest handling and storage, processing and packaging, distribution, and consumption could reduce food loss by 50%. Limiting food waste also limits the water usage and electric generation required to produce food.

Though not through the development of a food trade model, Lee et al (2017) found a mechanism - improvement of the gleaning schedule in agricultural production - that addresses both food loss and insecurity. The gleaning process consists of collecting any leftover produce or grains following the initial harvest. Once considered to be the equivalent of agricultural dumpster diving, gleaning is now a mechanized system which has proven successful in feeding more members of an immediate agrarian community as well as larger scale produce generation.

Though this method proves successful at addressing food insecurity and loss, it is still not popular due to its stigma. There is no known PR or marketing tactic that glamorizes improving gleaning schedules or related methods of produce life-cycle management. If the technology exists to solve optimization problems such as this, how can these strategies be marketed to influence producer/consumer behavior?

One study that examines the impact of PR strategy on food production and waste is that of Tsiros and Heilman. Tsiros and Heilman (2005) examined the role of consumer behavior regarding perishable food expiration dates and found that effective promotional strategies by grocers can reduce food waste. Grocers gain nothing from failing to sell expired perishable food products. In fact, the expiration dates are more of a hindrance to grocers as the majority of the dates are relatively arbitrary and only shorten the perceived shelf-life of the product. It is in their interest to improve sales of nearly expired or no longer “best by:” products. Rather than using only conservative dating techniques to spur consumers into a spending frenzy, grocers would rather alter the treatment of goods during the course of their shelf lives to improve food preservation as well as use alternate promotional strategies to boost sales and reduce food waste.

These studies technologically address the challenge of optimizing FLW and food insecurity rather than prioritizing the capital gains of suppliers which may exist as a limitation. The studies support that technology exists as a potential solution to FLW management. Less empirical data may exist to better represent the marketing strategy success and/or social influences for various interest groups which engage with FLW and insecurity. Investigation of these studies does not presume to select a solution to FLW management or food insecurity.

Argument

The Waste Problem - A History of Waste in Media

A push for “green” living has been made by individual and commercial entities alike that magnify slogans like “growing the green economy for people and planet” (*Green Living | Green America*, n.d.). Sustainability follows the “green” principle that the least impact to the environment is the best strategy for achieving sustainable goals. Society largely supports the “green” principle based on the climate crisis, with a 2022 Pew Research Study indicating that three-quarters of U.S. adults support U.S. participation in international climate change efforts (Spencer & Funk, n.d.) A long history of media influence over consumer behaviors exists in the solid waste industry and is briefly chronicled in this section to highlight the role of media in FLW and food insecurity.

Solid waste PR management strategies often rely on the three main “Rs” as a method to limit the amount of solid waste that reaches the landfill prematurely or inappropriately. This conveys to consumers what individual actions can be taken to help the planet and one another. These strategies do not often come from large scale producers and rather come from environmental interest groups or the solid waste industry at large that are promoting a shift to a more circular economy (US EPA, 2019). Technological strategies, such as the study conducted by Munesue et al. that aim to promote the food trade model to groups interested in improving their sustainability efforts, could benefit from social marketing techniques support.

More commonly known to the general U.S. American public by the slogan “Reduce, Reuse, Recycle,” the three Rs are followed by more Rs posed as strategies for “green” waste management by educators, climate activists, and businesses (“Waste Management,” 2021). Some of those Rs are “Recover,” “Rethink,” “Renovate,” and, arguably the most important R,

“Regulate.” Legislation like the 1899 Rivers and Harbors Act, which prevented the dumping of refuse into navigable waters, set the precedent for environmental regulation in the United States (*Rivers and Harbors Act* | *InPort*, n.d.). Were it not for the Conservationist Movement and subsequent push for legislation, ocean dumping may still be permissible. New regulations politicized SWM and prompted the creation of a business model for solid waste. To increase the sales of new curbside pickup or at-home waste management practices, companies were driven to improve their marketing strategies by making SWM appealing for the consumer and the environment.

Wartime USA in the 1940s created a need for a new system of production as the gendered labor roles changed and encouraged consumers to practice the three Rs to prioritize the production of wartime materials rather than municipal materials. Recycling was at an all-time high. Paper recycling was such a successful program that the paper producers were overwhelmed with the number of recycled materials being returned to their production centers in 1942 (Louis, G. E., 2013, 315). The War Production Board was abolished in 1945 and along with it the publicized need for recycled scrap materials. Recycling was deemphasized in the media and was thereby deprioritized by commercial and individual entities. Industrialization and the popularity of plastic extended many benefits to society and technological progress but also made clear that space to dispose of all this new single-use material was finite. Recycling became less popular until the passing of the Resource Recovery Act in 1970 that subsidized federal recycling programs and the Resource Conservation and Recovery Act (RCRA) which arose to combat the growing waste problem in the United States (US EPA, 2015).

The unsettling media coverage of the “Gar-barge” in 1987 further prompted Americans to consider waste as a personal problem. The Mobro 4000 barge left New York carrying nearly

three thousand tons of refuse and traveled along the coast of both North and South America looking for a place to dispose of the waste. This approximately six month long journey gained press and illuminated the problem with excess waste (Miller C., 2007). As depicted in the Google Books N-gram Viewer screenshot below, the frequency of the word “recycling” was first notably recorded around the 1940s with the push for recycling and materials recovery, steadily increased at a low rate until the creation of the EPA and greater environmental awareness in the 1970s, and spiked again in the late 1980s around the time of the coverage of the “Gar-barge,” indicating that the media coverage of these three events may have impacted consumers’ awareness and engagement with the act of recycling (Figure 1).

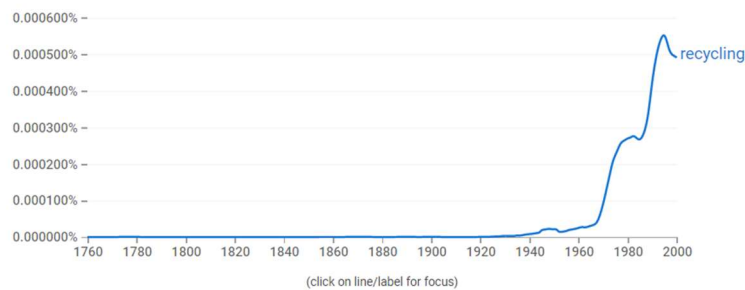


Fig. 1 Google N-gram viewer for the percentage frequency of the word “recycling” in Google Books

Recycling campaigns and legislation have been influential in SWM. Marketing and media coverage proved useful in altering consumer behavior and interest in alternative waste disposal measures such as recycling. Similar to the research conducted by Tsiros and Heilman presented in the *Literature Review*, effective promotional studies and media can be used to sway consumer behavior. These promotional tactics and increased legislation influence consumers’ engagement with SWM and can be applied to standardizing food labels with proposed legislation like the *Food Date Labeling Act*, consumer education campaigns, and easier food donation systems through proposed legislation like the *Food Donation Improvement Act* (Blumenthal &

Toomey Introduce Legislation to Increase Food Donations & Promote Food Security | U.S. Senator Richard Blumenthal of Connecticut, n.d.; Text of H.R. 6167, n.d.).

Impact of Covid-19 Pandemic and Pleasing Patrons

Understanding consumer behavior is paramount to a successful business model or even this investigated system which seeks to reduce FLW and insecurity. Businesses must tailor their marketing and practices to the consumer or respond to external challenges. Pieroni et al studied business model innovation (BMI) for the CE and found that the CE can be used as a waste reduction strategy but is more desirable for its economic gains (Pieroni et al., 2019). The claim that businesses are interested in shifting from a linear economy to a circular economy based on market sector niches geared toward greater sustainability is supported by a study conducted by Bocken et al that researched product design and model strategies for a CE (Bocken et al., 2016).

Whether in response to consumer trends or in response to external challenges, interest groups emerged to either turn a profit and/or foster community. Groups like the FarmLink Project, a 501c3 rescue food group staffed entirely by volunteers with an average age of 21, arose in response to the challenges posed by Covid-19 to minimize the agricultural waste and food insecurity through reallocation of resources (Dvonch, 2021). Motivated to respond to the community's needs, the FarmLink Project's PR methods exist to make the problem *visible* and consist of inspiring articles, humble requests for generous donors, and an uplifting "green" interface. Funded by generous donors or partnerships with organizations such as Chipotle, JW Crouch Foundation, Kroger Co. Zero Hunger Zero Waste Foundation, and the Purple Carrot, the FarmLink Project has raised more than 6.5 million dollars toward feeding communities in need while reducing the global waste footprint. Though the pandemic did not *create* the threat to food sustainability, it exposed concerns about the life-cycle management of food and packaging

waste. The FarmLink Project's response emphasizes action over reactive performative marketing to successfully reduce waste and food insecurity. Though they may be influenced by their donors, it is uncertain to what degree those donors would react to the PR strategy over the "boots on the ground" actions.

Regulatory bodies like the USDA and the EPA have joined forces to infiltrate communities, organizations, and businesses to reduce FLW by 50% over the next 15 years. Representing American producers and consumers alike, the USDA and EPA have taken an active role in identifying private sector businesses actually committed to reduction of FLW as "U.S. Food Loss and Waste 2030 Champions" (*Food Loss and Waste 2030 Champions*, n.d.). Recognition on this list may inspire companies who have limited their sustainability efforts to some PR to take a more active role in environmental sustainability as a "free" promotional tactic to recruit eco-minded consumers.

Grocers like Whole Foods Market must also be participants in food and packaging waste reduction to address the concerns of their eco-minded patrons (Whole Foods Market, n.d.). Amazon, the owner of Whole Foods Market, partners with over thirty organizations to reach business-wide and SDG goals (Amazon, n.d.). These partnerships may contribute to Whole Foods Market comprising multiple participant groups or different participant groups than another retail grocery chain like Kroger. Competing retail grocery chains like Harris Teeter, Kroger, and Food 4 Less, while all owned by Kroger Co., may demonstrate variable commitments to food systems sustainability to cater to customers with different needs and are thereby supported by a broad range of trade associations per their 2020 Political Spending Report. Kroger Co. must ensure the status of their "egalitarian brand" by offering a variety of goods and services to many customer demographics and therefore states that they "do not always share the same perspectives

on legislation and regulatory matters as do [their] trade associations” (Kroger Co., 2021). The trade association FMI: The Food Industry Association represents Kroger Co. along with other retail and wholesale grocers (FMI, 2021). Grocers, their parent companies, and interest groups may diverge to demonstrate varying commitment to waste management.

The onslaught of the Covid-19 pandemic increased the global poverty rate and forced more families into food insecurity. Total Food Service is a news resource that chronicles and influences food service industry practices related to plastic waste and food consumption. The news resource recognizes the lasting impact of the pandemic on the way that consumers view food systems and the importance businesses must place on appearing sustainable by stating, “Sustainability is no longer just a passing trend. It is a way of doing business that consumers expect” (Total Food Service, 2020). This statement is supported by a study conducted by the Pew Research Center which found that 83% of U.S. adults say they make at least some effort to live in ways that help protect the environment (Anderson, n.d.). If consumers expect sustainability, is that what they are guaranteed to receive? What is the food equivalent of “greenwashing?”

Sustainability Semiotics and Mismarketing

Greenwashing is made possible by the use of sustainability semiotics. Sustainability semiotics in the context of this paper is a term used to discuss the social signifiers of environmental sustainability in product and service marketing media. Whether consumers are aware of the practices of food suppliers or just the PR slogan, the PR slogan and recognizable signs of environmental sustainability are usually enough to convince consumers that a business is operating sustainably. Analogously, consumers associate visual signifiers with sustainability such as the color green or neutral tones, images of nature, and emphasis of sustainability “buzz

words” like “environmental impact,” “sustainably sourced,” and any term beginning with “eco” - some of which are demonstrated by fast-fashion giant, SHEIN. SHEIN’s 2021 Sustainability and Social Impact report includes photos of models in nature and several pages of vague claims on ESG sustainability efforts as a strategy to impart on consumers a commitment to sustainability when in reality it is a staged, superficial rendering in order to attract a larger consumer audience (*2021 Sustainability and Social Impact Report | SHEIN USA*, (n.d.).

Another example of greenwashing is a television commercial aired by the Competitive Enterprise Institute in response to Al Gore’s release of *An Inconvenient Truth* in 2006. The commercial uses visual signifiers like images of nature and rhetoric about “life,” “freedom”, and “creativity” to promote the consumption of petroleum products and restore its political standing against the global understanding of climate change which challenged fossil fuels (Competitive Enterprise Institute, 2006). Though the video conveys a sense of serenity and connection with nature, fossil fuel combustion contributes approximately 74% of all GHG emissions which is, arguably, not sustainable (*Where Greenhouse Gases Come from - U.S. Energy Information Administration (EIA)*, n.d.). It presents a disconnect between what consumers are viewing and what the industry is actually doing. Does the difference really matter to consumers?

Knowledge and exposure of greenwashing in retail has widened a niche market of eco-minded consumers who seek sustainable lifestyles. The Ellen MacArthur Foundation is a charity organization whose mission is to create a CE by researching and reporting on the impacts of a CE for the benefit of policymakers, teachers, students, and businesses (*About Us*, n.d.). Their resources feature CE food organizations that encourage more environmental and social sustainability through their company policies and practices using a choice architecture framework. Examples include the following: an alternative meat technology company called

Planetarians which introduces more plant-based meat alternatives to the market, making it easier and more attractive for consumers to choose plant-based meat; and programs like Connect the Dots which support regenerative farmers like those from São Paulo, increasing the availability of more sustainably sourced food products which contribute to the CE (*Planetarians*, n.d.; *Regenerative Agriculture around São Paulo*, n.d.).

Alternative to traditional forms of media which mismarket goods and services to consumers, choice architecture may be used as a solution to teach consumers how to dispose of waste without the consumer even knowing. Choice architecture is designing a system to influence the choices of a decision maker, either by increasing the availability of a sustainable product in the market or by systems like colocation of waste disposal bins in a cafeteria. This technique may then encourage consumers to purchase sustainable goods and properly dispose of their waste because they are given options that are easy to understand and accessible. Grocers or boutique sustainable vendors like the Dogwood Refillery in Charlottesville, Virginia may have refillable jars available on site to encourage patrons to reduce consumption of single-use or plastic food/home care packaging or provide easily accessible resources for food donation to organizations like Meals on Wheels or websites that make it easy to find a food pantry to donate to (“Donate Food,” n.d.; *The Issue | Meals on Wheels America*, n.d.; Refillery, n.d.).

Crafting the system so that it influences the choices of the consumer can be a helpful tool in promoting safer and cleaner SWM practices and greater diversion of perishable food products either to compost if necessary or a food reclamation program if possible, with programs like the Farmlink Project.

Conclusion

Sustainable consumption as it relates to FLW and insecurity can be manipulated by marketing techniques that “greenwash,” often playing-up or blatantly misaligning with a commercial entity’s sustainable practices. As noted by Total Food Service, consumers expect sustainable products and services. Different participant groups use marketing techniques to change the public view of their business, whether that aligns with their practices or not – sometimes to entice a niche market sector and other times to influence public perception or legislation. Organizations devoted to the practice of sustainability, like the Farmlink Project, may spend less time convincing others that they are behaving sustainably, as their reported data shows the progress of their efforts. Conversely, their marketing may be used as a tool for visibility rather than marketing products. Ultimately, different interest groups use marketing as a tool for advancing their agendas in the context of FLW and insecurity.

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