

The Role of Sustainability Certification Programs in Reducing Food Waste in Tourism

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As the volume of food waste globally exceeds 30% of the world's total food supply annually, the reduction of food waste is a current priority for policy makers and researchers worldwide. Food waste is especially problematic in the tourism industry, where excessive consumption and solid waste leads to long-term negative social and environmental impacts to local communities. As food waste is 40% of the total solid waste generated by resorts, the reduction of food waste is an important component of decreasing costs in the low profit-margin tourism industry. Thus, industry and non-governmental organizations encourage social and environmentally sustainable practices, primarily through green certification programs, but such efforts have not yet resulted in significant impacts. Issues with program design and administration, lack of consumer demand, cost of program membership, and lack of program evaluative data have been cited as rational in the literature. However, the success of green certification programs in other industries, increasing consumer willingness to pay premiums for products and services using sustainable practices, and the potential for certification programs to reduce food waste shows the potential of such programs in tourism to be successful in the future. Hence, this paper provides a framework for green certification program design based upon MINDSPACE concepts from behavioral economics, where decision-making models seek to change the environment or context in which people make decisions. These contextual changes, or "nudges", lead to improved decision making, and hence, can be used to encourage firm and consumer environmental and social responsibility. Program design and certified firm specific policies which address management, employee and consumer decision making using Mindspace behavioral cues will increase the probability of future success for green certification programs in tourism.

Key words: Food waste, green certification, recycling, sustainability, tourism

Introduction

Food Waste and Tourism

The US Department of Agriculture (USDA) estimates food waste in the United States (US) at 35% of the total food supply and in 2010, 133 billion pounds of food was wasted, at a value of \$161 billion USD (Buzby *et al.*, 2014). In 2008, \$47 billion USD of food at grocery stores was discarded and the amount of uneaten food in households and restaurants was valued at \$390 USD per resident (Buzby and Hyman, 2012). The international situation paints a similar picture, in

which food waste is 30% of the total food supply annually and 1.3 billion tons of food was wasted in 2011 (FAO, 2011).

The economic, natural resource, and environmental impacts of food waste globally are immense (FAO, 2013), and thus, the USDA and the Environmental Protection Agency (EPA) have joined forces to establish the U.S. Food Waste Challenge which seeks to reduce food waste by 50% by 2030. Additionally, the Food Waste Reduction Alliance, a cross-industry effort by restaurateurs, supermarkets, grocery stores, and grocery manufacturers was started to define oppor-

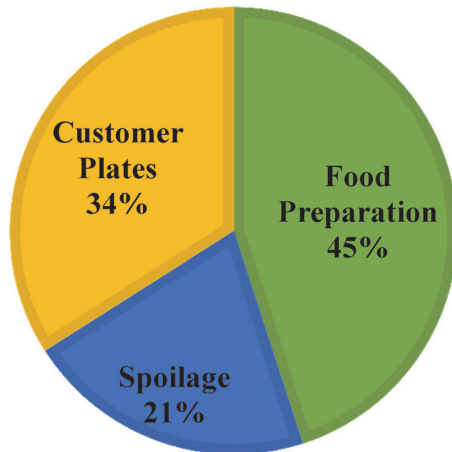


Fig. 1. Hospitality food waste sources.
Source: Adapted from Green Hotelier (2014)

tunities to reduce food waste and lobby for policies aimed at reducing waste and rewarding waste reduction.

Food waste is also a primary concern for the tourism and hospitality industry, where decreasing costs in a low profit-margin business is necessary for financial sustainability. The cost of food waste in the UK hotel sector is £318 million a year or \$0.85 per meal (Green Hotelier, 2014). As shown in Figure 1, food waste in the hospitality industry is generated primarily during the food preparation process (45%) and food discarded by patrons (34%), while a smaller amount is attributed to spoilage (21%) (Green Hotelier, 2014). As a result industry and third-party organizations have begun to address the issue of reducing food waste, including third-party organizations such as The International Ecotourism Society and Green Key Global. These programs provide eco-ratings and “green” certifications for the hospitality and tourism industry, many of which address food waste management and reduction.

Unfortunately, hospitality and tourism is known for overuse and abuse of local resources as 75% of all environmental impacts from resorts and tourism operations are a result of excessive consumption and emission of pollutants (Bohdanowicz, 2006). In fact, eco-tourism has been cited as an oxymoron in the media, which documents the long-term negative economic, social and environmental impacts of resorts on local communities (Rose, 2013; Wilcox, 2015). While the negative impacts are numerous, the primary impacts stem from the enormous amount of waste generated by resorts which leads to costly waste man-

agement schemes, increased pests, and endangerment to wildlife (Sealey and Smith, 2014; Kasim, 2006). For example, one single resort in the Bahamas contributes 36% of the total waste generated on the island (Sealey and Smith, 2014).

Consumer demand for environmentally sustainable and eco-friendly products and services continues to grow. The literature provides numerous examples of the price premiums consumers are willing to pay for green/eco-labeled products and certified services (Campbell *et al.*, 2015; Jensen *et al.*, 2004, Font and Epler Wood, 2007). While the tourism and hospitality industry has struggled to implement sustainable practices (Kasim, 2006), there are examples of success. In the mid-2000s, the Las Vegas hospitality industry implemented a comprehensive multi-resort recycling program with intensive sorting procedures. This program saves resorts thousands of dollars monthly through reclaimed silverware, plates, linens and such which were inadvertently tossed in the trash, as well as reduced waste hauling fees. As close to 40% of the waste generated in Las Vegas resorts is food, food waste is sorted and is then taken to local farms where it is used for animal feed (Miller, 2011). The feasibility of using food waste as animal feed has drawn attention in the literature, focusing on animal health and economic efficiency (Cheng and Lo, 2015; San Martin *et al.*, 2016). One example includes a study of food waste recycling programs in Japan (Takata *et al.*, 2012), which found that using food waste as animal feed was more economically efficient and had less environmental impact than waste incineration options.

Main Body

Current Sustainable Tourism Certification Program Issues

There are numerous sustainable or green certification programs available to tourism operations globally, more than 100 as of 2002 (Medina, 2005). Some of the more well-known programs include Earth Check, Green Key Global, and Eco Crown Hospitality. However, there are also country and region specific programs. For example, the UK had more than 20 green certification programs as of 2008 (Robbins, 2008). While, the hospitality industry feels current programs address the needs and concerns of the environmentally concerned traveler (Green Hotelier, 2014), the literature shows otherwise. Criticisms regarding current green certification programs include the existence of

too many programs using differing standards and confusing messages (Font, 2002; Jarvis *et al.*, 2010). Lack of consumer program awareness, especially in regards to local or country specific programs, the complexity of standards and access to necessary information, as well as program inability to properly inform and market the program to consumers, are additional issues (Wink, 2005). Further, a study by Blackman and Rivera (2010) found that in only six of 37 case studies did certification lead to actual environmental or socioeconomic benefits. Of the three case studies which focused on tourism, only one generated significant economic benefits as a result of premium pricing at resort facilities.

In theory, third-party certification programs provide consumers the opportunity to differentiate among goods /services with regards to the social, environmental, and other attributes of concern. The resulting price premiums consumers are willing to pay for the products/services exhibiting desired attributes, create the financial incentives required for firms to meet certification standards, assuming the premiums are high enough to offset the costs of certification. However, certification programs must set stringent enough standards, monitor and enforce standards, and inform consumers regarding certified firms and performance history (Blackman and Rivera, 2010). Unfortunately, this is not always the case. In the two of the tourism case studies examined by Rivera *et al.* (2006), certification actually decreased environmental performance at two ski resorts in the US because the certification programs used did not have specific standards, third-party oversight, or sanctions for poor performance. Similarly, Font (2002) finds that certification programs have allowed firms to use the program logo without certification, and many programs tend to certify environmental improvement rather than performance.

Another issue regarding the ability of certification programs to incite environmental, economic or social change includes selection effects (Blackman and Rivera, 2010). Meaning, firms, which are already meeting certification standards have strong incentives to enter the program, not to improve their performance, but to promote their existing practices (Font, 2010). Programs that attract such firms will have limited effects on firm behavior with few impacts. Unfortunately, at this time, few studies have examined the actual impacts of certification programs, and in the available

studies, selection effects are rarely corrected for in the analysis (Font, 2010; Blackman and Rivera, 2010).

Recipe for Program Success

Despite the current lack of evidence of the ability of sustainability certification programs in tourism to affect social and environmental change (Font, 2010; Jarvis *et al.*, 2010), there is reason to believe that these programs could be successful in the future. In the highly unregulated tourism industry, the need for voluntary programs, which encourage companies to operate at high environmental and social standards, is well documented in the literature (Kasim, 2006; Font, 2002; Jarvis *et al.*, 2010). This is especially important given the global nature of the tourism industry, making governmental regulation extremely difficult beyond country or jurisdictional borders.

First, certification programs and their associated labels are effective at transmitting information to consumers. The success of third-party certification programs for organic, free-trade, and locally-grown products has primed consumers to look for certification labels on products and promotional materials. Additionally, third-party information is often perceived as more reliable due to consumer distrust in government and first-party (brand) claims (Ortega *et al.*, 2011; Tronstad *et al.*, 2005).

Second, there is increasing evidence in the literature regarding consumer demand and willingness to pay premiums for certified products and services which exhibit desired attributes (Campbell *et al.*, 2015). While many of the studies conducted prior to 2010 in the tourism industry found that travelers often left their values behind in the face of lower priced, more convenient, or higher quality options (Miller *et al.*, 2010; Jarvis *et al.*, 2010), more recent studies find that consumer attitudes and values do in fact affect their behavior while traveling (Slocum and Curtis, 2016; Green Hotelier, 2013).

Finally, even if program participation were to only impact solid waste management, that alone could reduce the social and environmental impacts of tourism firms on local communities, especially in developing nations (Sealey and Smith, 2014). As 46% of the solid waste generated by tourism firms is food, there is a huge opportunity to reduce waste through food recycling programs (Bohdanowicz, 2006). For example, resorts in Las Vegas have been able to reduce between 33.2 and 55.2% of their solid waste as a result of their

food recycling program (Miller, 2011).

However, if sustainability certification programs are to be successful, they must be designed such that tourism firms benefit from participation and target consumers choose certified firms over other options (Bohdanowicz, 2006). Behavioral economics provides a framework for program design, in which decision-making models seek to change the environment or context in which people make decisions. These contextual changes, or “nudges”, lead to improved decision making in many circumstances due to the high degree of decisions made “unconsciously” (automatic, uncontrolled, fast, effortless) (Thaler and Sunstein, 2008). Unconscious or contextual decisions often lead to seemingly irrational behavior or obvious non-utility maximizing choices, such as smoking, diet, and exercise. Dolan *et al.* (2012) use “nudge” concepts to formulate a set of effects on behavior they call MINDSPACE cues. Table 1 describes each of the nine cues and the impact they have on behavior. The following discussion describes how these cues can be used to design sustainability certification programs for tourism, which influence firm and consumer behavior, and hence, improve the potential for program success.

Program Specific

The need for salient and easily understandable information will require certification programs to be globally, or at least regionally, recognized, such that program details can be easily obtained by both consumers, program members (certified firms) and potential members. Fewer, large, global or regional cer-

tification programs will increase consumer awareness and allow for streamlining of messages or consistency in protocols and definitions across programs. While specific program objectives and standards will need to be consistent across firms, the practices certified and processes for achieving certification standards could be customized to local customs, values, and social norms (Font, 2010).

Past performance and success of various certification programs (organic, free trade, etc.) and tourism related performance studies provide insight in to the program elements required for a successful certification program (Blackman and Rivera, 2010; Tronstad *et al.*, 2005; Starobin and Weinthal, 2010). Such program elements include:

- Specific certification objectives and their impacts (economic/social/environmental)
- Clearly defined program benefits (for firms and consumers)
- Measurable indicators of achievement or minimum certification standards
- Comprehensive promotion/communications plan and platform (website, etc.)
- Easily recognizable program label
- Detailed directory of all certified firms
- Transparent member evaluation/monitoring plan and process
- Specific penalties/sanctions for non-compliance
- Recertification process with metrics and timeline
- Consumer research and results dissemination plan
- Program evaluation plan and implementation budget

Table 1. Behavioral Impacts of MINDSPACE Cues

Cue	Behavioural Impact
Messenger	We are heavily influenced by the communicator/souce of information (expertise, trustworthiness, personality)
Incentives	We are motivated by the timing and magnituden of incentives (gifts, coupons, completion certificates, loss of money)
Norms	We are strongly influenced by the actions of others (friends, family, those we respect)
Defaults	We commonly use pre-set options (opting in or out is less likely)
Salience	Our attention is drawn to what is relevant (easy to understand, see, or find)
Priming	Our acts are often influenced by sub-conscious cues (words, pictures, sounds, smells)
Affect	Our emotional associations can powerfully shape our actions (words, images, events)
Commitments	We seek to be consistent with our public promises and reciprocate acts
Ego	We act in ways that create a positive self image

Source: Adapted from Dolan *et al.* (2012), pg. 266.

All of these elements include a number of the behavioral cues for both customers and firms, such as salience, incentives, norms, priming, commitments, ego, and affect.

Firm Specific

Certification programs can be costly, especially with regards to record keeping, labor, and promotion. In order for firms to participate, the financial benefits in terms of reduced costs, increased revenues or a combination of both, need to offset costs (incentive cue). While reducing environmental and social impacts or moral/ethical responsibility (ego cue) may rank high with firms, the financial and marketing (image, brand, market share) benefits to certification are usually ranked at the top (Jarvis *et al.*, 2010). Hence, strong financial and market incentives must be provided and verified by the certification program. Access to other legal and economic incentives, such as tax breaks, aid, grants, etc. as a result of program certification would also be beneficial.

When a firm's competitors or other firms they strive to emulate participate in the program, the firm is also more likely to participate (norms cue). When firms sign a contract to enter the certification program they are making a public commitment to improving their sustainable activities and meeting program standards. These are priming and commitment cues which will increase the likelihood of success. Additionally, programs must penalize firms for non-compliance with program standards, as loss aversion or negative incentives have shown to be highly effective (Dolan *et al.*, 2012).

Firms may encourage employees to complete the activities or actions required to meet program standards by providing the following:

1. Training which clearly addresses the sustainability goals of the program, as well as benefits to the local community (priming, ego, affect)
2. Easily understandable procedures and evaluation methods (salient)
3. Employee incentives (bonuses, recognition, etc.) to achieve or go beyond minimum standards (incentives)
4. Posted pictures or words which remind employees of proper procedures (salient, priming)
5. Written contract of commitment to the firms' sustainability objectives (commitment, priming)

Customer Specific

Consumers who value environmentally sustainable practices will be motivated to select certified firms because their friends, who hold similar values, would also choose certified firms, or at least consider these firms as the more appropriate choice for others. People are strongly influenced by friends and those they respect, the norms cue. Additionally, selecting these firms will make such consumers feel good about themselves, as well as respected in their social circle (ego cue). When researching firms, consumers may be more likely to trust information gained from non-governmental organizations (NGOs) or third-party certification programs (Tronstad *et al.*, 2005). The messenger cue, or information source, can affect how consumers view the information and how quickly they act upon it (Dolan *et al.*, 2012). Lack of trust or dislike of a messengers will discredit the validity of the information, or influence consumers to completely ignore it.

When informing consumers, the salience and priming behavioral cues would suggest that the certification program's logo be easily identifiable on all firm promotional materials, websites, table cards, menus, etc. Additionally, firms should clearly outline the types of activities they are undertaking to meet program standards and the social, environmental, and economic impacts to the local and global community (ego and affect cues).

Onsite, firms may encourage consumers to assist them in achieving the programs' sustainability objectives through the following:

1. Provide a commitment card for customers to sign upon check-in, which outlines the potential green activities in which they may participate (commitment and priming)
2. Provide incentives for completing green activities or opting out of services which waste resources (incentives)
3. Make green activities the default option, such that consumer have to opt out if they wish to do otherwise (default)
4. Post pictures of green activities in appropriate locations as a reminder (priming and salience)
5. Note the percentage of firm customers who normally complete the green activity (norms)

Conclusion

As food waste globally exceeds 30% of the world's total food supply, the reduction of food waste is

currently a high priority for policy makers and researchers alike. Food waste is especially problematic in the tourism industry, where excessive consumption and solid waste often leads to long-term negative social and environmental impacts to local communities. As food waste is more than one-third of the total solid waste generated by resorts, the reduction of food waste is an important component of decreasing costs in the low-margin tourism industry. Governmental, industry and non-governmental organizations are now encouraging social and environmentally sustainable practices among tourism operations. Additionally, numerous green certifications programs are now available to firms such as Green Key Global and Earth Check, but such efforts have not yet resulted in measureable economic, social, or environmental impacts. Issues with program design and administration, lack of consumer demand, cost of program membership, and lack of program evaluative data have been given as reasons for program ineffectiveness. However, the success of green certification programs in other industries, increasing consumer willingness to pay premiums for products and services using sustainable practices, and the potential for food waste reduction through recycling provides reason to believe such programs in tourism could be successful in the future.

This paper provided a framework for green certification program design based upon concepts in behavioral economics, in which decision-making models seek to change the environment or context in which people make decisions. These contextual changes lead to improved decision making, and hence, can be used to encourage firm and consumer environmental and social responsibility. Suggestions for program design and member firm specific policies which address management, employee and consumer decision making using MINDSPACE behavioral cues were provided. Green certification programs in tourism and member firms which make use of these cues will have an increased probability of future success.

The need for additional research with regards to current consumer demand and acceptable pricing for green certified tourism operations, awareness of green certification programs, logos, and practices certified is paramount to the continuing discussion. Available consumer demand information specific to tourism in the literature is outdated or provided by industry sources, which may be unreliable. Additionally, rigorous certification program evaluation data and studies

are needed to truly understand if these programs are enhancing the green performance of their members, resulting in positive social, economic, or environmental impacts.

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