



## The impact of eco-friendly practices on green image and customer attitudes: An investigation in a café setting



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### ABSTRACT

Do restaurant green practices, such as using recyclable take-out containers, really affect customers' perceptions of the restaurants' green image and their attitudes toward the restaurant? If so, does it matter whether these customers are ecologically conscious or not? The present study attempted to examine the relationships among three constructs—customers' perceived green practices, perceived green image of a restaurant brand, and attitudes toward a restaurant brand, in a study of Starbucks' customers and identifies the key green practices that influence customers' perceptions of a restaurant's green image. First, the results suggest that the perception of green practices affects customers' perceived green image of a restaurant which in turn influences customers' attitudes toward a restaurant. Second, the study identifies recyclable take-out containers, recycling waste, and energy-efficient lighting as the key green practices that contribute to the formation of customers' perceptions of a restaurant's green image, but only across ecologically conscious customers. Finally, the paper includes a theoretical model that helps explain customers' formation of a green image and attitudes toward a restaurant company and offers practical guidelines for effective green marketing management in restaurant operations.

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### 1. Introduction

As customers become more environmentally conscious and their demands for eco-friendly products and services increase, many industry professionals have engaged in developing and promoting ecologically sustainable products and services while striving to strengthen their business commitment to sustainability (Earthshare, 2012). Green practices enable companies to save on long-term operational costs while gaining a competitive advantage by developing or enhancing a positive image and reputation (Chen, 2008). According to a survey conducted by BDO Seidman, LLP, two thirds of CFOs at the top 100 retail companies indicated that their greatest motive for pursuing eco-friendly practices was to improve the company's image (Environmental Leader, 2007), which enables companies to establish and maintain relationships with customers

(Andreassen and Lindestad, 1998; Robertson, 1993). However, some researchers have highlighted the disadvantages for companies that go green. For example, the initial cost of implementing green attributes is expensive, and the cost savings acquired from implementing green attributes are not always sufficient to compensate for the initial green conversion investment (Joseph, 2012). Despite these potential disadvantages, many companies believe that green practices are beneficial and, thus, consistently pursue environmentally friendly practices.

Given the intangible characteristics of the restaurant industry, the critical linkage among green practices, company image, and customer behavior has an even greater impact on the restaurant business. Customers may depend significantly on the image of a restaurant when making dining decisions. Presumably, they are more likely to choose a restaurant with a stronger positive image (Namkung and Jang, 2013). Yet despite restaurant industry professionals' and scholars' clear recognition of the impact and benefits of a company's green image, which is generated by the execution of green practices, little has been done to examine the substantive impact of green practices and green image on customers' dining decision-making processes in the context of restaurant management. Do green practices significantly influence a restaurant's image and customers' attitudes?

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Unlike consumers of green retail products (e.g., hybrid cars), for restaurant customers the linkage between their purchasing action (dining at a green restaurant) and the perceived benefit (direct or indirect) is not substantively recognizable. Green attributes in restaurants (considering only environmentally focused green practices) rarely act as core functions with direct (or tangible) benefits to restaurant customers. Due to these substantively unrecognizable benefits when customers are dining at green restaurants, it is difficult to practically observe a significant relationship between a restaurant's green practices and customers' dining decisions at the restaurant. However, previous research has indicated that green practices might provide intangible benefits, such as satisfying a customer's psychological and emotional needs for self-esteem, which might in turn influence the customer's overall attitude toward a restaurant (Manaktola and Jauhari, 2007). In addition, considering the growing social value of protecting the environment, green practices may influence customers' overall attitudes. Therefore, the current study attempted to find evidence that green restaurant attributes could have some direct influence on customers' overall evaluations of a restaurant.

In a study of restaurant management, Namkung and Jang (2013) recently indicated that green practices significantly influence customers' perceptions of a brand's green image and green behavioral intentions. Namkung and Jang (2013) examined the influence of green behavioral intentions by asking about customers' revisiting intentions based on green attributes that a restaurant offers (e.g. "I would like to continue to visit this restaurant because of its eco-friendly practices"), which measured the sub-scope of all revisiting intentions generated by the additional green value. Even though understanding this sub-scope of revisiting intentions (green behavioral intentions) is important, it is critical to comprehend the actual impact on customers' overall attitudes toward a restaurant, a construct which helps predict customer behavioral intentions, considering the practical implications of this study.

When conducting research in a green context it is important to consider customers' values and beliefs associated with green behaviors. Customers' values toward engaging in being green and their beliefs regarding whether green behaviors can positively influence environmental issues are formed by intrinsic care about the well-being of the planet and are the mainsprings of customers associated with green behaviors. Because these altruistic motives, values, and beliefs substantively affect the formation of customers' attitudes toward restaurants pursuing green practices, the study measured customers' overall attitudes toward restaurants to better explain the impact of green practices on customers' responses toward eco-friendly practices.

Examining different customer segments' green behaviors is also important in conducting green research. Environmentally conscious customers (i.e., green customers) who tend to have strong altruistic motives toward the environment would have stronger green values. Therefore, the magnitude of their perception of green restaurant practices might be greater than those of less green customers. Consequently, for green customers the impact of green practices on green image formation and overall attitude toward a restaurant might be stronger than that of less green customers. In order to extract more effective green marketing strategies for restaurant management this study examined different customer segments' green behaviors.

To select a sample restaurant for this study, the researcher considered two main characteristics. First, the sample restaurant should use green practices in its establishment and be recognized or certified as a 'green' restaurant by a designated green organization or some news media or publication. Newsweek (2009), the second largest weekly news magazine in the U.S., published an exclusive environmental ranking of America's 500 largest corporations. Starbucks ranked first in its industry sector, right above McDonald's.

Green practices executed in Starbucks establishments, such as the use of recyclable take-out containers, use of energy-efficient lighting in seating areas, and the use of water efficiency equipment, are common practices used within restaurant business. Therefore, it is reasonable to use Starbucks as the study's sample. Additionally, considering the scale of Starbucks' business, the contributions of this study could potentially be influential. For these reasons, Starbucks was selected as the study sample.

In addition, to capture restaurant customers' attitudes toward a restaurant brand driven purely by their altruistic motives toward environmental concerns, food-focused attributes that are closely related to direct health benefits (i.e., organic food ingredients) and freshness (i.e., locally grown produce) were excluded from the current study. Including these food-focused attributes might make it difficult to conclude whether customers' positive attitudes toward a restaurant are actually based on environmental concerns, which might be derived from altruistic motives, or instead from the benefits they would receive.

By examining whether green practices can be a substantive factor that influences customers' overall attitudes toward a restaurant, this study suggests directions for effective green marketing design in restaurant management. By assessing customers' overall attitudes toward restaurants this study develops a theoretical model that can explain restaurant customers' green behaviors in a more suitable manner. Furthermore, by identifying key green practices influencing perceived green image and attitudes, this study provides specific and practical implications for effective green marketing management in restaurant operations. Therefore, the specific objectives of this study are: (1) to examine whether customers' perceptions of green practices significantly influence their perceptions of a restaurant's green image and their overall attitudes, (2) to investigate whether customers' perceptions of green image significantly influence their overall attitudes toward a restaurant, (3) to identify the key green practices that influence customers' perceptions of a restaurant's green image, and (4) to determine whether the effects of green practices differ based on different green customer segments.

## 2. Related literature and proposed hypotheses

### 2.1. Green restaurant studies

According to Pacific Gas & Electric's Food Service Technology Center, restaurants consume the largest amount of energy in the world compared to other types of commercial buildings. In addition, restaurants generate a greater amount of garbage daily than most other retail businesses (Horovitz, 2008). As the seriousness of environmental concerns increases, restaurant industry professionals have established green organizations to protect the environment, notify restaurateurs about how restaurant operations can negatively impact the environment, and provide guidelines on being green.

The Green Restaurant Association (GRA, 2012), an industry-renowned green organization, is a non-profit organization that has helped revolutionize the restaurant industry by implementing sustainable practices, including educating restaurant employers and employees and encouraging customers to dine in green restaurants. GRA emphasizes seven environmental categories for being a green restaurant operation: energy efficiency and conservation, water efficiency and conservation, recycling and composting, sustainable food, recycled and biodegradable products, non-toxic cleaning and chemical products, and green buildings and construction. Meanwhile, the National Restaurant Association (NRA) promotes sustainable businesses in the restaurant industry by providing a valuable online resource, "Conserve," which encourages

foodservice professionals to engage in green practices. Conserve focuses on four areas: water use, construction, energy efficiency, and recycling (Conserve, 2010). However, the focus of each organization's ecological friendliness differs. GRA emphasizes food- and environmentally focused green practices whereas NRA's Conserve program emphasizes environmentally focused green practices. The emphasis can also vary according to how a group defines green practices in the restaurant industry.

As attention to green management has increased, several green studies have been conducted in the field of restaurant management. Choi and Parsa (2007) examined managers' attitudes toward engaging in green practices and investigated the relationship between restaurant managers' psychological attributes (attitude, preference, and involvement in green practices) and their willingness to charge a premium for green practices. The results suggested that willingness to charge higher prices for performing socially responsible practices was significantly influenced by a manager's preference toward and involvement in such practices. This study provided a unique point of view—green pricing decisions can be partially explained by the manager's psychological factors. By proposing an integrated model that combines the theory of planned behavior and innovation adoption theory, Chou et al. (2012) recently investigated attitudinal and behavioral decision making factors for adopting green practices in restaurants in Taiwan. The study results indicated that the attitudes and perceived behavioral control of restaurant managers positively influence their behavioral intentions toward adopting green practices. However, social influence did not have a significant effect on behavioral intentions.

Investigating customers' attitudes and behaviors toward green practices has received more attention in the field of restaurant management. Dutta et al. (2008) examined customers' green orientation in India and the United States by investigating psychological factors. The results showed that customers in the United States had a higher degree of involvement in environmentally and socially responsible practices in restaurants, which had the most significant effect on customers' willingness to pay 10% more or higher for green practices. In contrast, Indian consumers had a higher degree of involvement in health, which led them to pay 10% more or greater. This study provides practical and managerial implications for restaurant managers. In addition, to maximize profits cultural aspects should be considered when restaurant managers adopt green practices. Hu et al. (2010) examined the dynamics of green restaurant patronage and found that customers' knowledge of sustainable restaurant practices and environmental concerns were significant determinants of their intention to patronize green restaurants. Furthermore, the study demonstrated that restaurant customers who are older, have higher income levels, and have more education tend to be patrons.

Recently, Namkung and Jang (2013) examined the effect of green practices in restaurants. They postulated that green practices in the restaurant industry can be divided into two categories—food focused and environmentally focused. The researchers tested the effects of green restaurant practices in the context of green brand equity formation. The results indicated that customers' perceptions of green practices, both food and environmentally focused, have a positive influence on a restaurant's green brand image and customers' green behavioral intentions. Furthermore, their study estimated the proposed effect of green practices in different types of restaurants. The results indicated that for upscale casual dining restaurants food-focused green practices were more effective in enhancing a green brand image and customers' behavioral intentions than were environmentally focused green practices. However, for casual dining customers environmentally focused green practices were more effective in improving customers' perceptions of a restaurant's green brand image. Namkung and Jang (2013) also

examined the impact of green practices and image on customers' "green behavioral intentions," behavioral intentions generated by a restaurant's perceived green practices and image. Based on these results, it is difficult to determine whether green practices have a substantive and genuine positive impact on customers' overall purchasing behaviors toward a restaurant.

## 2.2. Green studies in other areas

As social interest in going green grows, research interest regarding "green" contexts is also growing and many scholars in various disciplines have studied consumers' green attitudes or green product purchasing intentions. It is important to know about green studies in other fields because it opens up a broader understanding of the topic and reveals how green studies differ in various fields by exploring the distinctiveness of the fields. Finally, it may help provide directions for future studies in the context of hospitality management.

Consumers' green attitudes and behavior regarding retail products have been actively studied. Recently, Chang (2011) focused on studying ambivalent aspects of brand attitude toward green products and purchasing intentions in the context of green product advertising. Chang (2011) pointed out that some consumers would like to purchase green products due to their altruistic motives to protect the environment and might enjoy the emotional benefits of green purchasing. However, other consumer may have doubts about buying green products due to their suspicions that green products are inferior in terms of quality. Based on this notion, Chang (2011) tested the moderating effect of ambivalent attitudes on various consumer responses (e.g. ad believability and brand attitude) toward green advertising. The results showed that high-effort claims provoke greater levels of discomfort among ambivalent consumers, which in turn encourages the consumers to engage in motivated processing in which they discount the believability of the advertisement. More recently, Raska and Shaw (2012) studied consumer brand attitudes and behavioral intentions in the context of green skepticism. Their results confirmed that when consumers perceive a company's green initiative they use a skeptical approach and these responses vary across the perceived level of brand commitment. This study result provided a practical guideline to develop an effective way to positively promote a company's environmental initiatives.

An ambivalent attitude toward a green product might make more sense in terms of retail product consumption, where green attributes are directly embedded within the product (in other words, consumers immediately consider the positive or negative sides of green attributes while they purchase or consume the product). Within restaurants that strive to adopt green practices, customers may also demonstrate ambivalence toward green restaurant attributes. For example, customers might be suspicious about the inferior quality of a restaurant's interior lighting when energy-saving lights are implemented in a dining room. However, most green attributes in restaurants (considering only environmentally focused green practices) serve non-core functions, which may not directly influence the products or services that restaurant customers would expect from service providers (Manaktola and Jauhari, 2007; Namkung and Jang, 2013). As aforementioned in the introduction of this study, unlike consumers of green retail products, for restaurant customers the link between their purchasing action (dining at a green restaurant) and the perceived benefit (direct or indirect) of the green attribute is not substantively recognizable. Due to this unique characteristic of restaurants' green attributes, examining ambivalent attitudes toward a restaurant might not be a serious issue to be considered within the study of green attributes in the context of restaurants.

Along the same lines, although incorporating the idea of consumer skepticism toward green practices into the current study could be truly meaningful and contribute to restaurant management, it might be difficult to integrate the idea of consumer skepticism into a study of restaurant green practices (again, considering only environmentally focused green practices) at the current stage, due to the unique characteristics of restaurants' green attributes as described above. Understanding customers' perceptions of green practices should be done in the setting of restaurant management first while examining whether this perception of green practices affects the restaurant's green image and customers' overall attitudes toward the restaurant. Once industry professionals clearly understand customers' perceptions of green practices and green brand image in a restaurant setting, further extensions of the conceptual scope of this study (e.g. skepticism) can be executed.

### 2.3. Restaurant green image

In research on corporate social responsibility, company image is often described as a mental image or perception of an organization that the public holds (Nguyen and Leblanc, 2001). It is associated with a company's physical and behavioral attributes, such as name, products or services, and ideology, as well as the quality of communication between a company's service personnel and clients (Nguyen and Leblanc, 2001). A company's image is critical because it reflects the manner in which one organization is differentiated from another. Further, having a positive company image helps to establish and maintain loyal relationships with customers, shareholders, and the public (Andreassen and Lindestad, 1998; Chen, 2008; Nguyen and Leblanc, 2001; Robertson, 1993).

Marketing and corporate social responsibility studies have made it evident that green practices have long been considered an essential component of corporate reputation and a core element of corporate image (Miles and Covin, 2000; Schwaiger, 2004). Such practices also significantly affect the evaluation of a company's image, reputation, and even customer loyalty (Dutta et al., 2008). Chen (2010) defined green image in the context of brand equity management as "a set of perceptions of a brand in a consumer's mind that is linked to environmental commitments and environmental concerns." Likewise, a restaurant's green image can be described as diners' mental definitions (perceptions) of a particular restaurant that are linked to environmental commitments and concerns.

In an early study of store image in marketing, Martineau (1958) found that image is "the way in which the store is defined in the shoppers' mind, partly by its functional attributes and partly by an aura of psychological factors" (p. 47). However, in a later study of store image, researchers focused more on the functional and physical attributes associated with how customers perceived a store's image. Assael (1987) claimed that a store's image is a perception of the store attributes. Similar to Assael's definition of image, Bloemer and de Ruyter (1998) later defined store image as a consumer's perception of a store based on particularly noticeable attributes. Bloemer and de Ruyter (1998) further indicated that image is expressed as a function of the salient attributes of a particular store that are evaluated and weighted against each other.

Based on customers' perceptions of store image, the formation of a restaurant's green image can be derived. A restaurant's green image can be expressed as a function of the salient green attributes of a particular restaurant (Bloemer and de Ruyter, 1998). Likewise, customers' perceptions of the green image of a restaurant can be measured by the function of green practices that are important for the evaluation of the greenness of the restaurant (Bloemer and de Ruyter, 1998).

### 2.4. Customers' attitudes toward restaurants

In psychology-related research, an attitude is viewed as "a stable disposition to respond in a consistently favorable or unfavorable manner to a psychological object" (Ajzen and Fishbein, 2000). Ajzen and Fishbein (2000) argued that an attitude can be referred to as the "evaluation" of an object, concept, or behavior along a dimension of favor or disfavor, good or bad, like or dislike. It is also considered a strong criterion construct for understanding one's evaluation of an object and behavioral intentions (Ajzen and Fishbein, 2000; Fishbein and Ajzen, 1975; Kwun, 2011).

In expectancy–value theory, people's attitudes toward an object are determined by accessible beliefs about the object, where a belief is defined as the subjective probability that the object has a certain attribute (Fishbein and Ajzen, 1975). In addition, attitudes are formed as subjective values of certain attributes linked to an object (Ajzen and Fishbein, 2000).

Using Ajzen and Fishbein's (2000) findings, customers' overall attitudes toward a restaurant can be referred to as customers' evaluations of a particular restaurant in general, expressed as a dimension of favor or disfavor (good or bad). Such attitudes are determined by customers' subjective values or beliefs regarding a restaurant. Subjective values and beliefs regarding a restaurant are structured by a restaurant's core attributes, such as food, service, and atmosphere, and supplementary attributes, such as environmental practices (Ajzen and Fishbein, 2000; Fishbein and Ajzen, 1975; Manaktola and Jauhari, 2007). Although environmental practices are considered to be secondary attributes in the restaurant industry, considering the current social climate in which customers have ecological concerns and demand products and services designed to be less harmful to the environment, green attributes could have a significant effect in structuring customers' values and beliefs (overall attitude) toward a restaurant.

### 2.5. Restaurant green practices, green image and customer attitudes

#### 2.5.1. Relationship between green practices and green image

Miles and Russell (1997) provided excellent evidence supporting the positive relationship between green practices and improving a company's image. Their study examined the relationship among companies' reputations formed by green practices, environmental performance, and financial performance. Their results strongly indicated that demonstrating environmental stewardship helps create a reputational advantage that leads to enhanced marketing and financial performance. Chen (2008) also clearly showed a positive relationship between green practices and green image. The researcher examined the effect of companies' green core competences on green innovation performance and green image. The results indicated that green innovation performance, which would be similar to the performance of green practices, positively affected a company's green image. In a later study, Chen (2010) showed that consumers' perceptions of green brand image can significantly affect a company's green brand image. More recently, Namkung and Jang (2013) examined the effects of restaurants' green practices in the context of green brand equity formation. The results indicated that customers' perceptions of green practices, in terms of both food and environmental focuses, have a positive influence on restaurants' green brand image and customers' green behavioral intentions. Based on the findings of these studies, this study proposed the following hypothesis:

**H1.** Customers' perceptions of green practices significantly influence their perceptions of the green image of a restaurant.

### 2.5.2. Effects of green practices and green image on customers' attitudes toward restaurants

Based on Ajzen and Fishbein's (2000) expected-value model of attitude, customers' attitudes toward restaurants are determined by their subjective values and beliefs about the restaurant or evaluations of the restaurant's attributes. Among such restaurant attributes, ecological attributes (green practices) might have a considerable impact on customers' subjective values and beliefs about a restaurant. Manaktola and Jauhari (2007) indicated that although environmental practices are not considered core functional services, green attributes might be perceived as ancillary services that provide intangible benefits, such as fulfilling guests' psychological and emotional needs. People are also presumed to engage in conservation primarily because, at some level, they intrinsically care about the well-being of the planet and its inhabitants (Fransson and Gärling, 1999; Griskevicius et al., 2010; Stern and Dietz, 1994; Stern et al., 1993). Based on customers' genuine altruism toward the environment—the act of doing something good for the environment without expecting anything in return—their perception of a restaurant that undertakes green practices and their belief that the restaurant is involved in eco-friendly practices would form a positive attitude toward the restaurant in the customer's mind.

Oliver (1997) indicated that consumers often develop an attitude based on information about a product or company even before they have an actual consumption experience. This implies that perceived image—a consumer's psychological representation of objective reality—is critical in forming consumers' attitudes toward a product or a company, even if that image is distorted (Chen, 2010; Myers, 1968). From this point of view, customers' perceptions of a restaurant linked to environmental commitments and concerns can significantly influence their attitudes toward restaurants executing green practices (Chen, 2010; Myers, 1968). Customers' recognition of the seriousness of ecological problems leads them to become more environmentally conscious. Due to immense changes in social climate, customers' recognition of a restaurant's efforts to execute eco-friendly practices could form an even stronger perception of the restaurant's greenness. In turn, this could directly help generate positive impressions toward the overall restaurant and further help customers form a positive attitude toward the restaurant. Based on the above rationale, this study proposed the following hypotheses:

**H2.** Customers' perceptions of green practices significantly influence their attitudes toward a restaurant.

**H3.** Customers' perceptions of a restaurant's green image significantly influence their attitudes toward the restaurant.

### 2.6. Green customers

In green studies, many researchers have sought to identify who green consumers are in terms of demographics, psychographics, and behavioral aspects (Ryan, 2006; Schwartz and Miller, 1991; Zimmer et al., 1994). According to the International Institute for Sustainable Development, green customers are people who are committed to green lifestyles, are serious about their own green practices and their impact on the planet, and support companies that incorporate green practices (Ryan, 2006). Previous green studies have demonstrated that level of education is positively correlated with environmental concerns and behaviors, and age is negatively correlated with participation in environmental issues (Howell and Laska, 1992; Grunert and Kristensen, 1992; Barber et al., 2010). Several studies have indicated that millennial cohorts are the greenest generation (Barber et al., 2010; Martin and Tulgan, 2001). According to Martin and Tulgan (2001), Millennial cohorts are known as strong advocates of social responsibility and care about the world and environmental issues in general. They are the

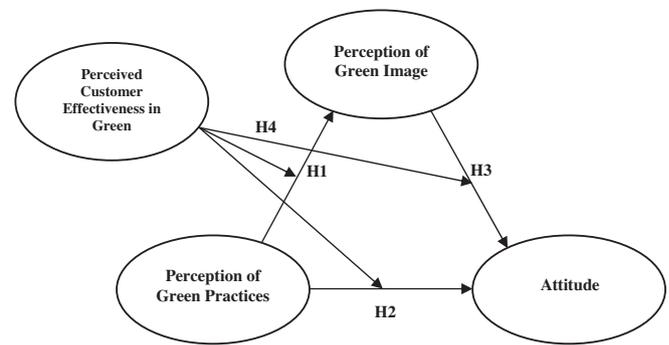


Fig. 1. Conceptual framework of the study.

most environmentally educated generation and have grown up in a media-saturated, brand conscious world (Fernandez-Cruz, 2003).

Straughan and Roberts (1999) studied environmental segmentation and emphasized the importance of psychographic measures to identify green customers. The researchers mentioned that psychographic variables provide a stronger and more useful profile of green consumption than do demographic variables. They found that perceived customer effectiveness (PCE) toward solving environmental problems was most importantly correlated with ecologically conscious customer behaviors. PCE refers to consumers' attitudes or beliefs regarding whether "individuals can positively influence the outcome to such problems" (Straughan and Roberts, 1999, p. 562). It further measures the degree to which a customer believes he or she can positively affect the environment. PCE is generally accepted as an important factor in predicting green customers' behavioral intentions. In many green studies, customers who indicated a high level of PCE also showed greater levels of green purchases (Chan and Lau, 2000; do Paco et al., 2009; Gilg et al., 2005; Gustin and Weaver, 1996; Straughan and Roberts, 1999). Extant research results indicate that PCE is the most important predictor for identifying green customers. Thus, this study measured customers' PCE levels and used them as a gauge to identify different green customer segments. Therefore, this study proposed the following hypothesis (Fig. 1):

**H4.** For green restaurant customers, customers with a high degree of perceived customer effectiveness regarding ecological matters, the relationships among the perception of restaurant green practices, the perception of green image and attitudes toward a restaurant are stronger than those relationships for restaurant customers who are less green (customers with a lower degree of perceived customer effectiveness regarding ecological matters).

## 3. Methodology

### 3.1. Study sample

#### 3.1.1. Research instrument

A self-administered survey questionnaire was developed based on the above literature review. The survey included four sections that covered (1) perceived customer effectiveness (PCE), (2) perception of green practices, (3) perception of green image, and (4) consumer attitudes toward a restaurant. For PCE, respondents were asked about beliefs that could positively influence their behavioral outcomes toward ecological problems. Based on the study conducted by Straughan and Roberts (1999), four survey questions were employed to measure PCE using a 7-point Likert-scale (1 = strongly disagree, 7 = strongly agree). For perceptions of green practices, respondents were asked to evaluate the performance of green practices based on their experiences at the surveyed restaurant using a 7-point Likert-scale (1 = poor, 7 = excellent). Four green

practice items currently executed by the surveyed restaurant were evaluated in the survey. In the third section, respondents were asked to indicate their perception of the green image of the restaurant using a 7-point Likert-scale (1 = strongly disagree, 7 = strongly agree). Using the work of LeBlanc and Nguyen (1996) and Schwaiger (2004), four items were developed to measure customers' perceptions of green image. In the fourth section, respondents were asked to rate their overall attitudes toward the restaurant in the survey. The seven semantic differential items used to measure attitude were adopted from Bennett and Rundle-Thiele (2002).

### 3.2. Data collection and analyses

Data was collected from a café located on a Midwestern University campus in the United States. A self-administered questionnaire was distributed to randomly selected customers who were waiting in line for their orders or dining onsite. A total of 361 responses were collected. Due to a high percentage of incomplete responses, 12 responses were excluded from the analysis. Anderson and Gerbing's (1988) two-step approach was employed to analyze the data. The first step included a confirmatory factor analysis (CFA) to estimate the reliability and validity of the measurement models. The second step used structural equation modeling (SEM) with a maximum likelihood method to examine the relationship among the three constructs proposed in this study: perception of green practices, perception of the green image of the restaurant, and customers' attitudes toward the restaurant. To estimate the validity of the measurement and structural models a goodness-of-fit index,  $\chi^2$  test, was used. In addition, a root mean square error of approximation (RMSEA) was employed, and the absolute fit indexes and normed fit index (NFI), Tucker–Lewis index (TLI), and comparative fit index (CFI) were used as incremental fit indices. To investigate the moderating effect of customer groups with different degrees of perceived customer effectiveness toward ecological matters multiple group analyses were performed. Finally, a multiple regression was executed to identify key green practices that influence customers' perceived green image and attitudes.

## 4. Results

### 4.1. Sample profile

Descriptive information of the study sample is presented in Table 1. As Table 1 suggests, more than 70% of the respondents were between 20 to 29 years old, and nearly 60% of the respondents were females. The majority of the respondents (85.5%) attended college/university or had a bachelor's degree or higher. 93.4% of them were students. Approximately 20% of the respondents reported annual household incomes of more than \$75,000.

The majority of the respondents were in the age category of 18–29 years old and the level of education was relatively higher than other social studies that have been done outside of universities. As indicated in the literature review, level of education is positively correlated and age (or generation) is negatively correlated with environmental concerns and behaviors. It is important to highlight the respondents' unique characteristics (they have relatively high levels of education and fall into older-millennial age categories) in order to better understand the study results presented below.

### 4.2. Confirmatory factor analysis

The reliability of the measurement items was assessed using Cronbach's  $\alpha$ . The level of internal consistency (alpha value) for the three constructs ranged from .815 to .901, which exceeded the minimum requirement of .60 for an exploratory study (Hair et al.,

**Table 1**  
Descriptive profile of the respondents.

Characteristics	n	%
<b>Age</b>		
18–19 years	69	19.8%
20–29 years	249	71.3%
30–39 years	20	5.7%
40–49 years	6	1.7%
50–59 years	4	1.1%
Older than age 60 years	1	.3%
<b>Sex</b>		
Male	147	42.1%
Female	202	57.9%
<b>Education</b>		
Less than high school	2	.6%
High school/GED	49	14.0%
Some college/University	188	53.9%
Bachelor's degree	60	17.2%
Master's degree	40	11.5%
Doctoral degree	10	2.9%
<b>Occupation</b>		
Student	326	93.4%
Management, professional and related occupation	11	3.2%
Service occupation	3	.9%
Farming, fishing and forestry	1	.3%
Construction, extraction and maintenance	1	.3%
Others	7	2.0%
<b>Annual household income</b>		
Under \$10,000	76	21.8%
\$10,000–19,999	46	13.2%
\$20,000–29,999	22	6.3%
\$30,000–39,999	7	2.0%
\$40,000–49,999	9	2.6%
\$50,000–74,999	15	4.3%
\$75,000–99,999	24	6.9%
\$100,000–149,999	23	6.6%
\$150,000–199,999	6	1.7%
Over \$200,000	17	4.9%
Would rather not say	104	29.8%

1998). To assess convergent validity, standardized factor loadings for all measurement items and average variance extracted (AVE) were estimated. All measurement items had standardized loading estimates of .5 or higher (ranged from .615 to .876) and were all significant at an alpha level of .001. In addition, the AVE of the three constructs ranged from .503 to .693, which exceeded the minimum hurdle of .5. To assess the discriminant validity of each construct, the squared correlations between the constructs were compared with the AVE. Each construct's squared correlation between pairs of constructs was less than the AVE (Fornell and Larcker, 1981). Table 1 details the results of the CFA.

### 4.3. Structural model and relationship testing

The proposed model was estimated to investigate the relationship among the three proposed constructs—namely, perceived green practices, perceived green image, and attitude. The goodness-of-fit statistics for the proposed model indicated that the model reasonably fit the data ( $\chi^2=179.938$  ( $p=.000$ ),  $\chi^2/df=2.068$ , NFI = .934, TLI = .951, CFI = .964, IFI = .965, RMSEA = .055 Fig. 2 is a graphic representation of the results, while Table 2 summarizes the structural results of the proposed model.

The results of the study indicated that customers' perceptions of a restaurant's green practices significantly influenced their perceptions of the restaurant's green image ( $\beta=.542$ ,  $P=.000$ ). Further, the perceived green image of the restaurant significantly affected customers' attitudes toward the restaurant ( $\beta=.499$ ,  $P=.000$ ). However, customers' perceptions of the restaurant's green

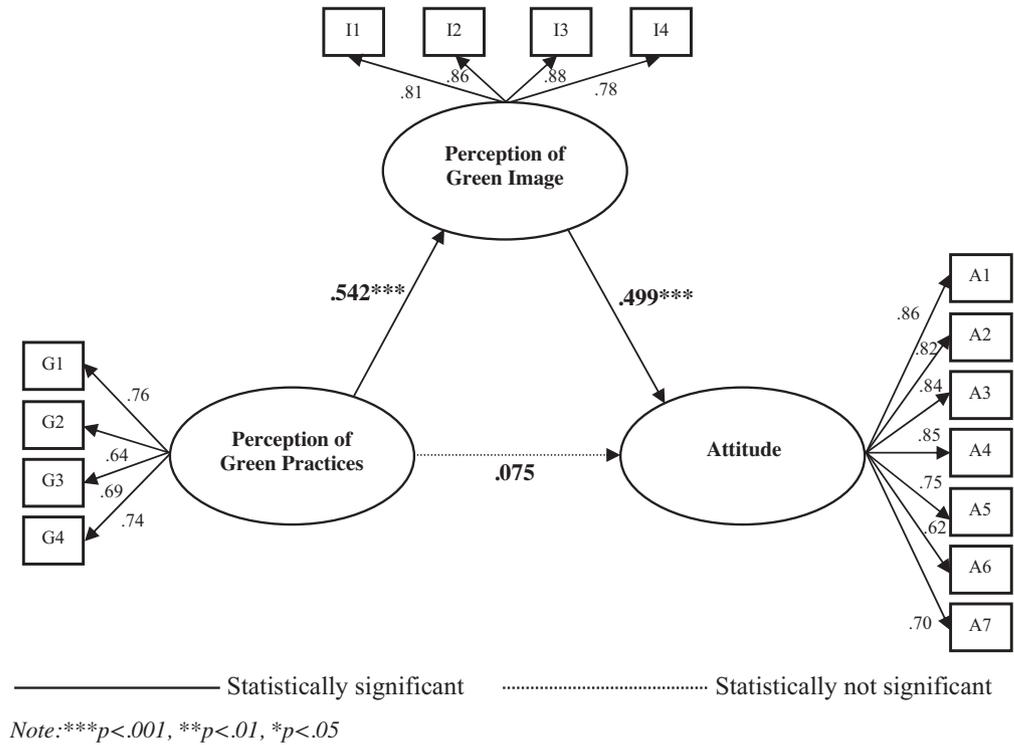


Fig. 2. Result of structural model of the study. Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

practices did not significantly influence their attitudes toward the restaurant ( $\beta = .75, P = .333$ )

This insignificant statistical relationship between customers' perceptions of green practices and their attitudes toward the restaurant implies that even if a restaurant has superior green practices compared with competitors, directly influencing customers' positive attitudes toward a restaurant through green attributes seems to be a long shot. Despite the insignificant impact of the perception of green practices, green performance should be maintained or improved. It is a statistically significant determinant in shaping a restaurant's green image, which has a significant direct influence on customers' positive attitudes toward the restaurant. The statistically significant relationship between perceived green

image and attitude, as well as the mediating role of perceived green image in the relationship between the perception of green practices and attitudes, indicates the imperative role green image plays in explaining customers' green behaviors. Further, the path coefficient between customers' perceived green practices and perceived green image revealed another salient finding. Although customers' perceptions of green restaurant practices are a statistically significant determinant for structuring customers' mental images of a restaurant's greenness, the path coefficient was .542. In other words, approximately 29% of the variance of the green image construct can be explained by green practices. This result clearly shows that more than half of the variance of green image might be explained by other green image determinants. This indicates that there may be

Table 2  
Results of confirmatory factor analysis for measurement model.

Variables	Standardized loading	t-Statistic	P-value	Cronbach's $\alpha$	AVE
<b>Perception of green practices</b>				.815	.503
Recyclable take-out containers	.737				
Recycling waste	.692	8.726	.001		
Water-efficient equipment	.640	8.786	.001		
Energy-efficient equipment	.762	9.381	.001		
<b>Perception of green image</b>				.897	.693
Starbucks behaves in a socially conscious way.	.813				
I have the impression that Starbucks in very responsive to environment issue.	.863	18.321	.001		
Starbucks is concerned about the preservation of the environment.	.876	18.640	.001		
I have the feeling that Starbucks in not only concerned about the profit but also concerned about the environment and other consumers.	.775	15.871	.001		
<b>Attitude</b>				.901	.593
Bad-Good	.798				
Unpleasant-Pleasant	.815	16.553	.001		
Unfavorable-Favorable	.841	17.227	.001		
Negative-Positive	.845	17.380	.001		
Undesirable-Desirable	.754	14.951	.001		
Unwise-Wise	.615	11.647	.001		
Unlikely-Likely	.697	13.540	.001		

**Table 3**  
Structural parameter estimates and fit indices.

Path	Standardized estimate	t-Statistic	P-value	Relationship
Green practices → green image	.542	7.222	.001***	Significant
Green image → attitude	.499	6.748	.001***	Significant
Green practices → attitude	.075	.967	.333	Not significant
Goodness-of-fits statistics	Structural model		Cut-off value	
	Chi-square = 179.938		N/A	
	Normed Chi-square = 2.068		1.0–5.0	
	NFI = .934		>.90	
	TLI = .951		>.90	
	CFI = .964		>.90	
	IFI = .965		>.90	
	RMSEA = .055		.05–.08: Mediocre fit	
			>.05: Good fit	

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

other important determinants beyond the perception of green practices that influences customers' perceptions of a restaurant's green image. Therefore, stimulating customers' mental image of green restaurants using other factors, such as advertising highlighting green performance, might help induce positive attitudes toward the restaurant (Table 3).

#### 4.4. The Moderating effect of green versus less green customers

A multiple group analysis was performed to investigate the moderating effect of customer groups with different degrees of perceived customer effectiveness toward ecological matters. To reflect each group's distinctive disposition toward ecological matters, the 100 respondents with the highest PCE scores—the green group ( $N = 100$ , average score on PCE = 6.39)—and the 100 respondents with the lowest PCE scores—the less green group ( $N = 100$ , average score on PCE = 4.22)—were used for group analysis. The chi-square difference between the unconstrained and constrained models was estimated to examine whether a statistical difference exists between these two groups. The result of the  $F$ -test indicated that the difference in  $\chi^2$  was not significant, suggesting that there is no difference in the relationship of the proposed model for the green and less green groups. Although the result did not support a statistical difference between the two groups, the varied structural relationships among the three constructs between the green and less green groups provided a substantive clue that, in reality, the ecological behaviors between the two groups might differ.

Fig. 3 illustrates the results of the structural model for the two groups. For the green group, two paths indicated that the relationship between customers' perceptions of green practices and perceived green image and the relationship between perceived green image and attitudes were statistically significant at an alpha level of .001. The remaining path, which explains the relationship between perceived green practices and perceived green image, was not statistically significant. However, for the less green group only the path coefficient that indicated the relationship between perceived green image and attitude was statistically significant at an alpha level of .001. The other two remaining paths, which explain the relationship between perceived green practices and perceived green image and the relationship between perceived green practices and attitude, were not statistically significant.

For the green group, the indirect influence of perceived green practices on customers' positive feelings toward a restaurant was .246 ( $= .544 \times .453$ ), which was calculated by multiplying the two indirect path coefficients. However, for the less green group the perceived green practices had no statistically significant influence on either customers' perceived green image or overall attitudes.

A comparison of the structural models' path coefficients and statistical significance indicated the differences in explaining the relationship of the three constructs between the two groups.

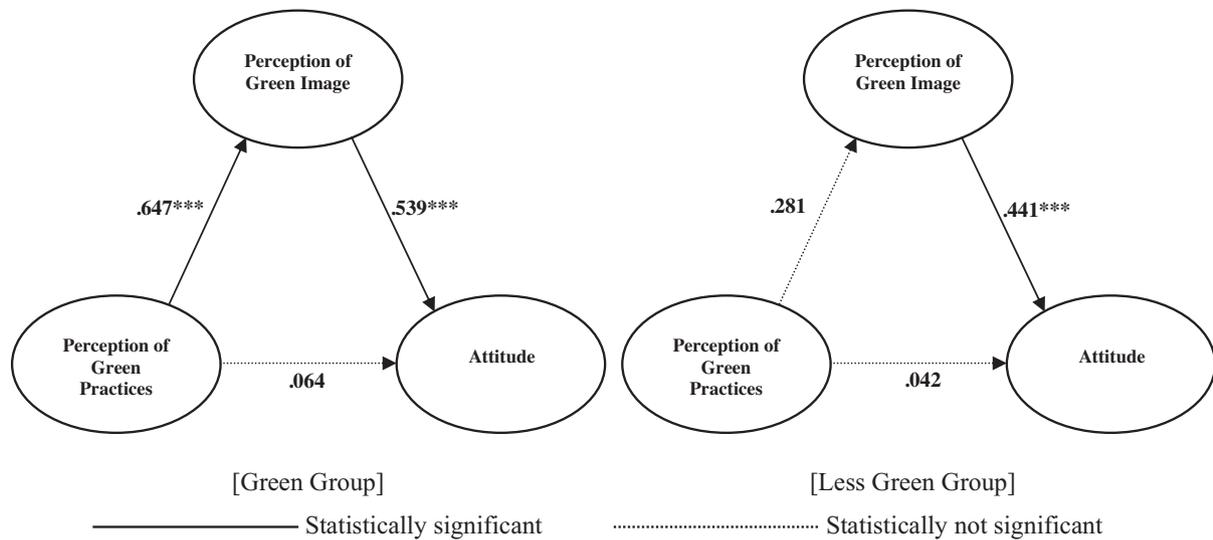
Although the results indicated that the groups are not significantly different from one another, this should be interpreted with caution. Implicitly, for less green customers perceptions of green practices may have no influence on the perception of green image or attitude. In other words, for the less green group the performance of restaurant green practices would not be involved in constructing a green image of the restaurant or eliciting a positive attitude toward the overall restaurant. From a managerial perspective, this indicates that it might be important to identify other ways to enhance a restaurant's green image, which critically encourages positive attitudes toward a restaurant for less green customers (Table 4).

#### 4.5. Restaurant green practices influencing perceived green image

As previously presented, the study results regarding the moderating effect of restaurant green image indicate that within the green group customers' perceptions of a restaurant's green practices could positively influence their perceptions of the restaurant's green image. Therefore, in order to determine which green practices influence customers' perceptions of a restaurant's green image, a multiple regression analysis was performed on the green group. Table 3 shows that three of the four green practices (i.e., using recyclable take-out containers, waste recycling and energy-efficient lighting) played a significant role in customers forming a green image. Based on the magnitude of the parameter estimates, using recyclable take-out containers was identified as the most important green practice to enhance customers' perceptions of a restaurant's green image. Energy-efficient lighting and waste recycling were ranked second and third, respectively. This result indicates that a restaurant's green practices, which might be closely connected with product consumption, would influence the construction of a restaurant's green image. Considering that a café was used as the setting of this study, using recyclable take-out cups was one of the most recognizable green attributes as most of the core products (i.e., beverages) were served in take-out cups.

**Table 4**  
Result of moderating effect (green group vs. less green group).

Unconstrained model	Constrained model
$\chi^2 = 311.164$	$\chi^2 = 313.173$
df = 174	df = 177
Normed $\chi^2 = 1.788$	Normed $\chi^2 = 1.769$
$\Delta \chi^2 2.01(p < .05) < \chi^2_{.05}(3) = 7.815$	
Not significant = no moderating effect was found statistically.	



Note: \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

Fig. 3. Result of structural model for green group vs. less green group. Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Table 5**  
Green practices influencing perception of green image.

Variables	Unstandardized coefficients	SE	Standardized coefficients	t	P-value
Recyclable take-out containers	.251	.087	.331	2.895**	.004
Recycling the waste	.173	.084	.204	2.064*	.039
Water-efficient equipment	.018	.083	.024	.220	.826
Energy-efficient lighting	.178	.080	.243	2.229*	.026

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Using water-efficient equipment showed no significant impact on perceived green image. Compared to the other three green practices, water-efficient equipment might be difficult for customers to observe when they purchase or consume a product. Even if customers notice that the restaurant has water-efficient equipment on site (e.g., restrooms), they might not recognize that the main reason for the installation of the equipment is to intentionally be green. In other words, green practices that are closely related to the core product are more easily recognizable for customers and seem to be the key practices that influence green image formation (Table 5).

**5. Conclusions**

This study was conducted to identify the impact of green restaurant practices from the perspective of customers. The results indicated that customers' perceptions of green practices positively influence a restaurant's green image, which also positively influences customers' attitudes toward the restaurants. However, customers' perceptions of green practices did not have a direct influence on customers' attitudes toward the restaurant. By implementing green attributes, restaurants can inspire customers to structure a mental image of a particular restaurant's greenness. Furthermore, this constructed green image can assist customers in developing a positive attitude toward the restaurant, which would ultimately affect customers' dining decisions. However, while customers' perceptions of green practices were not identified as a major driver when choosing a restaurant, as customers become more environmentally conscious the value of being green might also increase. As previously discussed, given the unrecognizable direct benefits of a restaurant's green attributes, green

practices may not currently be as substantive a factor as other major restaurant service factors (e.g., food quality, service quality, and atmosphere) in influencing customers' dining decisions.

The second part of the study revealed that there were no statistically significant differences in green behaviors between customers who were environmentally conscious and those who were not. However, the difference in the path relationships among the three constructs between the two groups should not be overlooked. Even in the green group, which yielded the highest degree of perceived effectiveness in terms of ecological matters, there was no evidence that green practices influence customers' positive attitudes toward a green restaurant in this study. Although customers were highly conscious about ecological matters, the main reason they had an overall positive attitude toward a restaurant, which would lead them to make a purchasing decision, was not determined by green attributes. As discussed earlier, environmental practices could be perceived as secondary or supplementary services, even to environmentally conscious customers. This perception of green practices as non-core function attributes might not be strong enough to directly influence customers' attitudes toward a restaurant.

For customers who are less conscious about environmental issues, perceived green practices might not influence either perceived green image or their overall attitudes toward a restaurant. However, their perception of a restaurant's green image significantly affects their attitude toward the restaurant. The significant relationship between green image and attitude implies that there must be other important determinants that help form those customers' perceptions of a restaurant's green image, which significantly influences their attitude toward the restaurant. For such customers, a restaurant's excellent performance of green practices would not have much of an impact on constructing their

perceptions of the restaurant's green image or their overall attitude toward the restaurant. These insignificant relationships can be explained by the fact that less green customers are indifferent toward restaurants' green attributes, which might be due to their lack of concern about environmental issues. Less green customers are also more likely to have insufficient knowledge of restaurants' green practices, which might in turn have an insignificant impact on green image formation and attitudes toward various restaurants (Hu et al., 2010).

Finally, the study results indicate that for the environmentally conscious group of customers green practices that influence green image are visible to customers. Based on a study of a store's image, customers' perceptions of a restaurant's green image are developed based on noticeable attributes that signal "going green" and are expressed as a function of the salient value of "doing green" (Bloemer and de Ruyter, 1998). Among the four green practices tested in this study, the three green practices that have a significant influence on the formation of a green image in green customers' minds were recyclable take-out containers, recycling waste, and energy-efficient lighting. These practices are particularly conspicuous green attributes in a café setting since customers were mainly served plastic or paper cups that were clearly indicated as being recyclable. This sends a straightforward message to customers that the restaurant is "doing green." The one green practice that did not have a statistically significant influence on a restaurant's green image formation was water-efficient equipment, which might not be as evident as other three green practices.

This study makes a contribution to the academic literature in restaurant management. By considering customers' attitudes toward a restaurant with the notion that attitude is an important construct for understanding one's behavioral intentions (Ajzen and Fishbein, 2000; Fishbein and Ajzen, 1975; Kwun, 2011), this study developed a suitable conceptual model that might be able to explain restaurant customers' potential green behaviors. In addition, this model reasonably reflects the characteristics of green attributes in the restaurant industry and the current stage of restaurant customers' understanding of green restaurant attributes and their benefits. Many restaurant products and process activities that include green attributes take place at the back of the house. Therefore, many of the attributes are unseen by customers (Namkung and Jang, 2013; Kassinis and Soteriou, 2003). Further, since restaurant customers gain substantively unrecognizable benefits when they dine at a green restaurant, theoretically, it might be difficult to find evidence of a significant direct relationship between a restaurant's green practices and customers' behavioral intentions to patronize the restaurant. Thus, assessing customers' overall attitudes toward a restaurant may be an appropriate initial measure to begin to understand restaurant customers' green behaviors.

This study also makes practical contributions by suggesting eliciting customers' positive attitudes toward the restaurant industry by focusing on green image enhancement. Specifically, for customers who are more environmentally conscious implementing and maintaining noticeable green practices might help them structure a green restaurant image. This can be achieved by adopting visible and observable green restaurant practices. For example, in a café setting disposable cups, napkins, or cup sleeves are the most accessible instruments or utensils in the consumption process. Indicating that disposable cups, napkins, or cup sleeves are recyclable in a way that appeals to customers would help improve the image of the restaurant.

The results of this study also suggest that customers' perceptions of the green image of a restaurant might be largely affected by other sources, such as advertisements related to being green, rather than customers' direct perceptions of green practices in the restaurant. As the results revealed, the variance of the green image construct, which is explained by green practices, was approximately .29 and

more than half of the variance in green image might be explained by other substantial determinant factors. Other potential sources of influence might affect customers' perceptions of a restaurant's green image, such as a company's name, products, services, or ideology, as well as the quality of communication between a company and its clients including advertisements. In other words, even though the company performs green practices well, customers, especially less green customers, may under-perceive the green image of the restaurant. Through green advertising or other visual signage describing that they are 'doing green,' such as green certifications, restaurant managers may construct a green image in customers' minds. Further research should be conducted to verify which determinants have a significant influence on forming customers' perceptions of a green image in restaurants.

Restaurant owners and managers, however, should carefully execute green advertising campaigns because customer reactions to green-washing, intentionally or unintentionally making false claims regarding a company's products or services, could be unfavorable. Companies must insure that they are accurately presenting eco-friendly products or services to customers so that their reputation remains credible (Joseph, 2012).

Despite these contributions, this study has some limitations as well. Data was collected from a Starbucks café, which is known for its pro-active eco-friendly behavior. Therefore, the study results may not be applicable to restaurants that are less pro-active in terms of eco-friendly practices. Also, this coffee shop experience cannot fully represent the experience across different restaurant segments, such as casual or fine-dining restaurants. Thus, generalization of the study findings is not warranted. To attain more generalizable results regarding how customers perceive green restaurant practices and how those perceptions affect green image and overall attitudes toward a restaurant, this study should be replicated with data from various types of restaurants.

In addition, considering customers' existing levels of loyalty or commitment might be important. In order to purely capture the proposed effects (the path relationship among the three constructs), assessing customers' existing levels of loyalty toward a restaurant brand and using it as a control variable might be helpful. Future studies should take this point into account.

As indicated in the results section, the majority of the study respondents were in the older-Millennial age category. As aforementioned in the literature review, Millennial cohorts are known as strong advocates of social responsibility and care about the world and environmental issues in general (Martin and Tulgan, 2001). It is possible that the results of the current study might be influenced by this generational effect. Therefore, generalization of the study findings is not warranted in this aspect. For future studies, it might be interesting to examine the moderating effect of age (or generation) in green consumption to establish market segmentation strategies for green restaurant management.

As both academic and practical research in other fields has shown, there are heightened levels of skepticism and greenwashing in the United States. Thus, assessing restaurant or hotel customers' brand attitudes or behavioral intentions in the context of green skepticism might be another important research direction, which would fill knowledge gaps in the study of hospitality management. The current study used Starbucks as an example, but considering the reputation of Starbucks among its customers, they might be less likely to be skeptical about Starbucks than other brands such as Dunkin' Donuts or McDonald's. Therefore, future research should take this brand effect into account before they explore studies regarding skepticism.

One of the items used to measure restaurant green image, is a double-barreled statement. ("Starbucks is not only concerned about profit but also concerned about the environment and other consumers.") The statement might have been hard

for respondents to clearly understand, which might hinder capturing the data we intended. Therefore, future research should take this issue into account when adopting measurement items. Finally, the researchers were focused on examining green image determinants—namely, customers' perceptions of green practices—to measure perceptions of a restaurant's green image. As the study results and literature on corporate image indicate, other tangible cues such as brand name, advertisements, and even green certification can be determinants in forming a restaurant's green image. Therefore, future studies should carefully examine additional green image determinants and investigate which ones have a strong impact on customers' green image structuring. In addition, this study only estimated the effect of environmentally focused green practices in a restaurant setting. Thus, future studies should attempt to estimate the effects of both environmental and food-focused green practices on customers' perceptions of green image and attitudes toward a restaurant. It might also be interesting to see the differences between these two green practice categories. Such future research would help restaurateurs develop effective strategies to draw on customers' green behaviors.

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