GREEN ATTRIBUTES FOR RESTAURANT:
WHAT REALLY MATTERS TO CONSUMERS?

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PROJECT: GREEN ATTRIBUTES FOR RESTAURANTS: WHAT REALLY MATTERS TO CUSTOMERS?

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ABSTRACT

This study was designed to identify restaurants’ green attributes that consumers deem most important, exploring why consumers perceived certain green attributes more important than others and measuring the impact from consumers’ demographic backgrounds on their preferences among various green attributes for restaurants. A quantitative-focus embedded design of mixed methods approach was adopted to collect both quantitative and qualitative data with one instrument. A total of 382 useful surveys, which only focus on consumers who are currently living in United States, were collected through Qualtrics. The quantitative data were analyzed with descriptive analysis, repeated measures ANOVA, post hoc comparisons, and multiple regressions. The qualitative data were examined using the content analysis method. The quantitative findings suggest: (a) consumers in general value environment-focused attributes more than food-focused and administration-focused green attributes, (b) female consumers rate more important in all three categories of green attributes than male, (c) younger consumers value food-focused attributes more than older consumers, and (d) consumers’ educational and income levels do not affect their preferences on various green attributes for restaurants. The qualitative data reveals that “personal knowledge and belief regarding green practices” is the most cited reason by respondents as to why they rate certain green attributes more important than others, followed by the reasons of “environment benefit” and “easy to implement.” Drawing from the results, restaurant managers will be able to allocate their efforts on the green initiatives wisely according to the preferences of their target customers.

Keywords: Consumers, Green, Restaurant, Sustainability, Mixed-Methods
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CHAPTER 1

INTRODUCTION

Unprecedented natural disaster and global warming have caused an increasing trend in consumers’ environmental awareness. The public is progressively informed about the negative impacts of global warming and environmental pollution, which pushes consumers to become more ecologically conscious than before. The demand for environmentally friendly products by consumers has grown rapidly over the past decades (Jang, Kim, & Bonn, 2011). There are an increasing number of consumers who will consider the impact on the natural environments before they make a purchasing decision (Mohr & Webb, 2005; Tilikidou, 2007). Many consumers not only favor eco-friendly products and businesses that are serious about environmental practices (Hu, Parsa & Self, 2010), but they are also willing to pay more for green products that are less harmful to the environments (DiPietro, Cao, & Partlow, 2013A; Laroche, Bergeron, & Barbaro-Forleo, 2001; Coddington & Florain, 1993; Ottman, 1992). A study by Vieregge, Scanlon, and Huss (2007) demonstrated that more than 67% participants preferred restaurants that offer locally grown food, and were willing to pay 10% more for the local products. Within the hospitality and tourism industry, 75 percent of travelers had classified themselves as environmentally minded consumers, of whom 54 percent would choose to stay in environmental friendly hotels over other lodging options (Watkins, 1994). In addition, 80 percent of Americans consider themselves as environmentally concerned patrons to restaurants --- when they dine out, they want to feel as if they have done
something good for the environments rather than just having a nice meal (Parker, 2011). It is reported that 79 percent of consumers prefer to dine at a certified green restaurant (Dewald, Bruin, and Jang, 2014).

Consumers’ increasing demand for eco-friendly travel and hospitality products has brought numerous changes to the restaurant industry. Restaurants have to put more effort in being green in order to better satisfy their customers. For example, because health-conscious and environment-conscious consumers believe that using natural and organic food is an important attribute for green restaurants (Jang, Kim, & Bonn, 2011), many restaurants now emphasize they are using locally grown and organic ingredients. Statistics show that 87 percent fine dining restaurants, 63 percent casual dining restaurants, and 59 percent family restaurants have included locally grown ingredients on the menu (National Restaurant Association, 2011). In fact, a restaurant’s green practices can bring in more benefits than just attracting consumers’ utmost attention to the business (Schubert et al., 2010). Current literature also shows green practices can provide many other positive impacts to the businesses and the society.

Firstly, green practices by restaurants are found positively affected the sustainability of the natural environments. For example, Dutta, Umashankar, Choi, and Parsa (2008) findings on consumers’ green practice orientation in India and United States suggested that the restaurant industry was tending to slowly implement green practices that are beneficial for environment that can reduce business’s carbon footprint. Tzschentke, Kirk, and Lynch (2004) claimed that green practices are the actions to reduce environmental harm, and the green products are produced in an environmentally friendly ways. Implementing green practices and using green products are efficient way to protect
the sustainability of environment. As discussed in Elan (2009) study, Restaurant Associates developed a program named “Green Dining Best Practices” with Environmental Defense Fund and the Green Restaurant Association in 2011. The program was focused on decreasing business’ carbon footprint by reducing energy usage, and the results indicated that Restaurant Association would save more than $85,000, reduce 275 tons of carbon footprint and cut 60 tons of waste each year by implementing the program.

Secondly, green practices by restaurants can help them reduce operational costs. Graciand and Dodds (2008) reported in their study about hotels in Canada that implementing of green practices could help hotels to reduce 20%-40% utility costs. Elan (2009) suggested that the Subway Restaurant chain was able to help improve the health of the planet by devoting the organization to environmental and social responsibility. Subway opened the first LEED certified green restaurant in November 2007. The green design of a restaurant will help to reduce carbon pollution, energy consumption, water consumption and waste and of significant benefit for the restaurant is the opportunity to reduce the costs. According to the franchise manager, Subway Restaurants saved 60 percent on utility bills.

Thirdly, green practices by restaurants can help to improve the restaurants’ corporate image. In their discussion on the dynamics of green restaurant patrons, Hu, Parsa, and Self (2010) concluded that green practices could help a restaurant to gain the competitive advantage, build consumers’ loyalty, and increase brand image.

Lastly, green practices by restaurants can help to increase consumers’ purchasing intentions. According to Choi, Parsa, Sigala and Putrevu (2006), participants showed a
positive attitude and behavior intentions for the businesses that implement environmentally friendly practices and market socially responsible practices. Manaktola and Jauhari’s (2007) study on customers’ attitude and behavior towards green practices in the lodging industry in India reported that 55 percent of respondents considered environmental issues when choosing a hotel. The findings implied that the organizations’ visible environmental partnership will influence consumers’ decision in staying in an environmentally friendly hotel, and the green practices might help the organizations to gain a competitive advantage.

“Going green” has become a broadly used slogan in the restaurant business and the positive impacts of green practices on restaurant operations has been credited in helping restaurants to survive in the highly competitive marketing world by gaining a competitive advantage (Dipietro, Cao, & Partlow, 2013a; Morh & Webb, 2005). Green products are emerging as a market opportunity that encourages companies to participate in ways that are more environmental friendly. While the prominence of different green practices and their positive effects have already been well documented in hospitality and tourism literature, not many studies were administrated to compare the relative importance of various green attributes perceived by restaurant customers or provide the explanations of why consumers perceived certain green attributes as more important than others. In addition, current literature reports inconsistent findings on how consumers’ different demographic backgrounds influence their preferences among various green attributes for restaurants, which indicates that more in-depth analyses are needed. For example, will certain customers favor some green attributes for restaurants over others as compared to other demographic groups? This study was designed to assess the perceived
importance among consumers about various green attributes for restaurants and to measure the influences of consumers’ demographic backgrounds on their preferences. The following research questions will be addressed:

RQ1 What are the green attributes for restaurants that consumers deem most important?

RQ2 What are the similarities and/or differences among different demographic groups of consumers (i.e., gender, age, income, and educational levels) in regards to their preferences of restaurants’ green attributes?

RQ3 Why did consumers perceive certain attributes as more important than others?

The research findings of this study are expected to assist restaurateurs in making informed business decisions about a restaurant’s green practices. Restaurant owners and managers would then be able to allocate their time and company resources wisely by focusing on those green initiatives that are deemed most important by their targeted customers.
CHAPTER 2
LITERATURE REVIEW

The purpose of this study was to compare consumers’ perceived importance of the green attributes for restaurants and explore the reason behind consumers’ preferences that have been discussed in previous research. In addition, this research will also assess the influence from consumers’ demographic backgrounds on their perceptions among various green attributes for restaurants. Accordingly, this review of literature section will outline the important green attributes for restaurants, followed by a discussion on the influence of consumers’ demographic backgrounds (variables) and the possible influential factors that could make consumers view various green attributes differently. Hypotheses were then advanced from the discussion for empirical testing, and an open-ended question was also raised to collect qualitative data.

2.1 Green Attributes

There is an increase in consumers’ demand for green practices in restaurant businesses. Going green means “being environmentally responsible and utilizing practices that minimize the damage done to the environment” (DiPietro & Gregory, 2012, p.2), and green practices are activities that organizations can do to minimize their carbon footprint and reduce their negative impacts on the environment, such as overuse of resources, use of non-recyclable products, ineffective recycle processes, use of harmful chemical products (DiPietro, Gregory, and Jackson, 2013b; Schubert et al., 2010).
The Green Restaurant Association (2014) defined green practices in restaurants as offering sustainable food products and implementing environmentally friendly practices. In green restaurants, green food and green practices of restaurant operations are the important factors that influence customers’ selection (Hu, Parsa, & Self, 2010). Jang, Kim and Bonn (2011) defined a green restaurant as a restaurant that implements some green practices, such as the recycling and composting, water and energy efficiency and waste management, as well as a restaurant that offers an option of green food menu, which use locally grown food or organic food. Generally, green practices that can be widely observed in restaurant businesses include: employing energy efficiency and water efficiency equipment, using local food and organic food, offering healthy menu, forbidding disposable cups or to-go container, offering biodynamic and sustainable wines, training employees to adopt green practices, recycling and disposing cooking oil, conserving energy, and reducing pollution (First, 2008; Going Green, 2008; Green Restaurant Association, n.d; Dutta et al., 2008). Based on a review of relevant literature, green attributes for restaurants can been classified into three categories: food-focused, environment-focused, and administration-focused attributes.

2.1.1 Food-focused Green Attributes

Food is a way to vitalize and deliver green practices to consumers in the foodservice sector. Organic, locally grown, and sustainable food can be considered as “green food” (LaVecchia, 2008). According to Roddy, Cowanm, and Hutchinson (1994), organic food is produced in farms that are considerably limited in the use of fertilizers and pesticides, which may have detrimental effects on the environment and result in
residues in agricultural products. Toxic synthetic pesticides, fertilizers, irradiation, sewage sludge, and genetic engineering are forbidden to practice in the organic farming (Green Restaurant Association, n.d.). Locally grown food is defined as a kind of food produced and consumed in a specific geographical area (Jones, Comfort, & Hillier, 2004), while it reduces the use of fossil fuels for shipping and transportation, thereby decreasing air pollution (Green Restaurant Association, n.d.)

Research evidence has generally suggested that food-focused green attributes, such as organic or locally grown food ingredients, may appeal to customers, particularly those who are health conscious (e.g., Hu, Parsa, & Self, 2010; Jang, Kim, & Bonn, 2011). Based on the analysis in Hu, Parsa, and Self (2010), people who cares more about their health showed a positive relationship with their intention to purchase green products. Health conscious consumers consider health as a priority so they would like to check the products information before their purchasing, and this group of consumers shows more interest about green food, which is considered healthier and more nature. It also argued that offering green food could reinforce a restaurant’s eco-friendly image through which to draw customers’ attention and increase patronage. In another study, Vieregge, Scankon, and Huss (2007) found that about 67% of surveyed participants preferred locally grown products, and 70.9% of the participants would visit a quick service restaurant more often if they provide locally grown food.

2.1.2 Environment-focused Green Attributes

A number of environment-focused green initiatives have been carried out in practice and documented in the literature. Gilg, Barr, and Ford (2005) emphasized three
Rs – reduce, reuse, and recycle – and two Es – energy and efficiency – as the core definitional elements to distinguish green restaurants from non-green restaurants.

Drawing on the existing literature (Dutta et. al., 2008; First, 2008; Gise, 2009; Green Restaurant Association, n.d.), five categories of environment-focused green initiatives revolving around the notions of three Rs and two Es are identified:

1. Recycling and composting: Recycling and composting systems have been a common approach to reducing the amount of waste (First, 2008). Some restaurants implement environmental sustainable activities by using recycled products and non-tree-fiber products. In restaurant businesses, the mostly used recycled items are napkins, paper towels, toilet paper, office paper, take-out containers, coffee jackets, plates, bowls, glasses, cardboards, and cooking oil.

2. Renewable power: With the increasing demand for energy around the world, the need for alternative sources of energy is intensified. Renewable energy sources such as wind, solar, geothermal, small hydro, and biomass have received growing capital investments and been recognized to be eco-friendly and unexhausted (Fahmy, 2012). The solar power is one of the most applicable and affordable renewable energy sources for the restaurant industry. For example, “solar kitchen” in India demonstrated that using solar energy alone could produce up to 38,500 meals per day (Monica, n.d.).

3. Pollution prevention/reduction: According to the National Pollution Prevention Roundtable – a non-profit organization in U.S. devoted specifically to pollution prevention, organizations could reduce or prevent pollution by making changes in production processes and implementing new technologies, avoiding the use and
generation of toxic chemicals in cleaner processes, and utilizing innocuous raw materials or green products (Services, n.d.). In a similar vein, restaurants could minimize harmful waste by replacing harmful products with safer alternatives and reducing chemical use (Green Restaurant Association, n.d.).

4. Energy efficiency and conservation: In order to advance energy efficiency, restaurants could establish an energy management system and use the energy efficiency products such as energy-saving light, refrigeration, AC system and gas appliances to reduce consume of energy. An energy management system can track and optimize the consumption of energy (Lee, Barber, & Tyrrell, 2013). Statistic shows that a typical restaurant can save up to $15,000 per year by using energy efficient equipment in kitchen, and a fluorescent bulb can save $30 in energy cost over a bulb’s life (Energy & Water Efficiency, n.d.).

5. Water efficiency and conservation: The U.S. Environmental Protection Agency (EPA) claimed that advancing water efficiency could create financial benefits for restaurants. In order to enhance water efficiency, some green restaurants replace standard toilets with low-flow toilets, and equip water saving faucets, laundry and sprinkler systems (First, 2008). According to the U.S. EPA, restaurants could upgrade dishwashers, ice machines, and steam cookers to ENERGY STAR® qualified models, and switch off water equipment when not in use in order to reduce water consumption.
2.1.3 Administration-focused Green Attributes

In the current study, green certifications, corporate social responsibility, and employee training are considered to be administration-focused green attributes. Each of them is briefly discussed as follows:

1. Green certifications: Green certifications can be considered as a label of green restaurants, and may convey a message of product quality to reduce consumers’ perceived uncertainty and risks (Giraud & Trigui, 2005; Nabil, 2010). A great number of green certification programs have been introduced in the foodservice industry, such as LEED Certification, Green Seal Certification, Green Restaurant Association Certification, Certified Green Commercial Kitchen, and GenGreen Certification (DiPietro, Cao, & Partlow, 2013a). These certification programs provide restaurants with assessment and consultation for a wide spectrum of eco-friendly practices.

2. Corporate social responsibility: There is increasing amount of consumers rated corporate social responsibility as an important standard when they are making purchase decision (Mohr & Webb, 2005; Brown & Dacin, 1997; Allen & Root, 2004). Corporate social responsibility is defined as "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams & Siegel, 2001, p117). It describes a company’s actions to avoid a negative impact or generate a positive impact on the environment, consumers, employees, communities, and stakeholders. In this sense, a restaurant may fulfill its social responsibility not only through eco-friendly operational
initiatives, but also by activities directed toward giving back to the community (e.g., donations to environmental projects, Schubert et al., 2010).

3. Employee training: Restaurant employees and managers are the people who actually implement green practices in everyday operations. To ensure accuracy of green practices, training about environmental issues related to foodservice and green practices is required (Hu, Parsa, & Self, 2010). For example, one of the most important ways to improve water and energy efficiency is to educate users how to properly use the equipment in order to reduce overall consumption of water and energy (Saving Water in Restaurant, 2012). Referring to the findings in Manaktola and Jauhari’s study (2007), implementing green practices by organization and training employees about green practices are factors that may influence consumers’ visiting decision in environmental friendly hotel.

2.2 Perceived Importance of Green Attributes

It is argued in this study that consumers may perceive the importance of the three types of green attributes as discussed above differently. Natural and organic food ingredients have been identified to be an important attribute to health-conscious customers (Jang, Kim, & Bonn, 2011) and may influence consumers’ patronage decisions (Hu et al., 2010; Vieregge, Scanlon, & Huss, 2007). As opposed to food-focused green attributes, environment-focused green attributes tend to be back-of-house activities, of which consumers usually are not well informed (Gilg, Barr, & Ford, 2005). Because food-focused attributes are more visible to customers, which provide nutrient benefits of consumption and inform consumers a restaurant’s concern for their health-beings and the
environments, some scholars asserted that consumers are more likely to be concerned with food-focused green attributes than with environment-focused green initiatives for patronage decisions (Jang, Kim, & Bonn, 2011). Schubert et al. (2010) however suggested that some environment-focused activities would be as valued as food-focused green attributes. Specifically, their empirical evidence revealed that reducing energy and wastes, using biodegradable or recycled products, and offering locally grown food were ranked as the most important green practices by restaurants. Consumers’ knowledge of a particular restaurant’s sustainable and eco-friendly practices has also been found to be a determinant of their patronage intention (Hu, Parsa, & Self, 2010; Schubert et al., 2010). Alternatively, administration-focused green attributes may reflect a restaurant’s commitments to green practices to a more thorough level, at which the green efforts have received approval from certification programs, reached out to the community, or been reinforced internally. Meanwhile, since consumers tend to be better informed by restaurants about their corporate initiatives that have greater impacts or may bring more benefits to consumers than internal activities such as employee training for green practices, consumers attention to various green attributes will be different. Thus, it is hypothesized:

H1. Consumers value food-focused, environment-focused, and administration-focused attributes differently.

2.3 Demographic Effects on Perceived Importance of Green Attributes

It is important for green restaurants to understand consumers’ views on green practices based on their demographic backgrounds. This attempt can offer insights into
which green attributes restaurants could consider in their marketing efforts for different
target segments (Schubert et al., 2010). As demographic segmentation according to age,
gender, education or income is quite prevalent in actual practices, the current study
focuses on examination of these four demographic factors. In general, demographic
attributes have been found that are related to consumers’ perceptions of green practices
(DiPietro, Gregory, & Jackson, 2013b; Gronhoj & Olander, 2007; Hu, Parsa, & Self,
2010; Newell & Green, 1997; Roberts, 1996; Schubert et al., 2010; Zimmer, Stafford, &
Stafford, 1994). However, the findings were not consistent across these studies.

Gender differences in environmental concerns and perceptions of green practices
have received a great deal of theoretical discussions and empirical examinations. Earlier
work often drew upon theoretical arguments of females’ greater concerns about health
and safety risks to explain observed females’ stronger pro-environmental attitudes
(Blocker & Eckberg, 1997; Davidson & Freudenburg, 1996; Dietz, Kalof, & Stern, 2002;
Zelezny, Chua, & Aldrich, 2000; Xiao & McCright, 2013). Because of females’
environmental consciousness, they make eco-friendly decisions more frequently than do
males (Laroche, 2001). In a sample of diners from five restaurants in Columbus, Schubert
et al. (2010) found that female diners had a stronger belief that dining at green restaurants
would be healthier for them and that they tended to perceive donating to environmental
projects and reducing ecologically footprint as more important practices for green
restaurants than male diners. However, the data from Schubert et al.’s study did not yield
gender differences in other practices, such as reducing energy usage and waste, using
biodegradable or recycled products, using organic products, and serving locally grown
consumers’ intentions to patronize a green restaurant in a Taiwanese sample. Therefore, it is proposed:

**H2. Male and female consumers value various green attributes for restaurants differently.**

Theoretical arguments and empirical evidence have suggested age differences in consumers’ environmental concerns. According to Erikson’s eight-stage theory of psychosocial development, older adults are more likely to demonstrate generative acts, which expresses one’s concern for and commitment to benefiting the social system and nurturing, leading, promoting and helping the next generation (McAdams, de St. Aubin, & Logan, 1993). Warburton and Gooch (2007) has documented that older adults may translate their generative concern into positive attitudes toward the environment and view protecting and nurturing the environment as an expression of leaving a lasting legacy for future generations. Similarly, ecologically conscious behavior was found more pronounced among older adults than among younger ones (Roberts, 1996; Vining & Ebrel, 1990). In an attempt to identify demographic differences in consumers’ patronage of green restaurants in a sample of Taiwanese consumers, Hu, Parsa, and Self (2010) found that older consumers showed greater intentions to patronize a green restaurant. However, older adults were not always found to be more ecologically conscious (e.g., Stafford, & Stafford, 1994). Another study conducted by Schubert et al. (2010) suggested that people under 35 years old tended to see using organic products and reducing ecologically footprint as more important practices for green restaurants than people older than 35 years old, while no differences between these two age groups were found in the perceived importance of other practices such as reducing energy usage and
waste, using biodegradable or recycled products, serving locally grown food, and donating to environmental projects. As opposed to older people, younger people from Schubert et al.’s study also had a stronger belief that dining at green restaurants would be healthier for them. It is therefore hypothesized:

**H3. People at different ages value various green practices for restaurants differently.**

It is often assumed that one’s educational level or socioeconomic status would be indicative of his/her knowledge of or attitudes toward environmental issues (Newell & Green, 1997). Educational levels have been consistently reported to be a positive correlate of environmental concerns (Newell & Green, 1997), ecologically conscious purchases (Roberts, 1996), intentions to patronize a green restaurant (DiPietro, Cao, & Partlow, 2013a; Hu, Parsa, & Self, 2010), and beliefs in the importance of green initiatives (DiPietro, Gregory, & Jackson, 2013b), suggesting:

**H4. People of different educational levels value various green practices for restaurants differently.**

While the relationship between income levels and environmental concerns has been found to be not significant across different studies (i.e., Adeola, 1994; Newell & Green, 1997), it is presumed that people at higher income levels are more likely to afford the marginal increase in costs associated with the introduction of green initiatives at a restaurant (Hu, Parsa, & Self, 2010). The data from Hu, Parsa, and Self (2010) provided empirical support for this assumption, suggesting that people at higher income levels showed stronger intentions to patronize a green restaurant. Nevertheless, in other studies, wealthier people reported lower levels of ecologically conscious consumptions (Roberts,
1996) or valued less of reducing ecologically footprint for a green restaurant (Schubert et al., 2010), which leads to the following hypothesis:

**H5. People of different income levels value various green practices for restaurants differently.**

### 2.4 Reasons Why Certain Green Attributes Are Perceived More Important than Others

In regarding to RQ3, this study aimed to explore the reasons why consumers perceived certain green attributes as more important than others. Even though current literature provides very limited empirical evidence to answer this research question, researchers have identified a few influential factors that might affect consumers’ attitudes towards certain green attributes (e.g., Kaplan, 1991; Hu, Parsa, & Self, 2010; Dipietro & Gregory, 2012).

For example, personal green behaviors at home can be the important factors that motivate consumers to appreciate certain green attributes for restaurants. According to the Theory of Planned Behavior, if people believe their actions are related to social norms and have a positive attitude toward those actions, they are more intended to and actually perform the behavior (Ajzen, 1985; Ajzen & Fishbein, 1969; Kalafatis et al., 1999). People’s knowledge about green practices and their own practices in green will influence their intention in visiting a restaurant that also implements green practices (Kaplan, 1991). Relevant literature showed that people are more likely to spend money on green products outside of home if they are willing to be environmentally friendly at home, such as recycling or using products that are less harmful to environment (Dutta, 2008; Hu, Parsa, & Self, 2010; Laroche, et al., 2001). Dipietro & Gregry, (2012) analyzed whether
consumers’ green practices used at home would influence their intention to visit a restaurant more often. They identified a positive relationship between the number of green restaurant visits of a consumer and the frequency of his/her purchases of energy efficiency products or recycled products for the home. Hu, Parsa, and Self (2010) suggested that people who implement green practices in their daily lives are more likely to patronize a green restaurant because it creates an extension of the consumers’ ideal selves. Accordingly, consumers’ green behaviors at home can be a significant predictor of their purchase intention in green restaurant. People who are doing green practices at home are reasonably to aware more about green practices that are implementing in restaurants and expect the restaurants did the similar green practices as well.

Health conscious is another factor that might influence consumers’ preferences in green. Recently, dining in nature settings or in green restaurants has become a trend. Consumers show an increasing intention on green food for health purpose. According to the global market research firm RNCOS (2010), the organic food market in the United States is rapidly growth in recent year. Consumers’ food-related lifestyles are influencing their purchase in restaurants (Boer et al., 2004). Besides United States, there is also a huge increase in the market for organic foods in the UK over recent years because consumers think organic food is safer and healthier then conventionally produced food (Williamson, 2007). Consumers prefer to purchase in a restaurant if they have higher conscious about health. A study compared guest perception of green practices in restaurant in India and United States (Dutta et al., 2008). The results showed people in India have higher conscious about health and are more willing to purchase in a restaurant that are implement environmental friendly practices. Jang, Kim, and Bonn, (2011) also
demonstrated that people who are more concerned about health and environment are willing to pay more for green products; Especially, the group of health-conscious consumer has much higher intention to purchase organic ingredients and food because they believe organic food and ingredients are healthier and more nature choice.

It is not only health concerns that are driving consumers to choose organics or green products. Increasingly, people are starting to pay attention to what they eat for environmental reasons. Dunlap and Jones (2002, P.485) mentioned the definition of environmental concern in their article: “The degree to which people are aware of problems regarding the environment and support efforts to solve them and or indicated the willingness to contribute personally to their solution.” The relationship of the environment concern and consumers’ behavior has been discussed in a lot of existing studies. Hu, Paesa, and Self (2010) demonstrated that people who concern more about environmental problems would perform more environmentally friendly behavior. Ellen et al. (1991) indicated that the behavior of purchasing eco-friendly products and recycling could be predicted by people’s general attitude towards environment concern. The environmental concern can positively influence the intention of environment protection and purchasing green products (Mostafa, 2006). According to Suchard and Polonski (1991) research, there are different ways ecologically conscious consumers will protect the environment, such as recycling, purchasing green products, and have willingness to spend more for green products. In addition, consumers’ purchase decision in green showed a positive correlation with personal green practices (Dipietro, Gregory, & Jackson, 2013b). As a result, the environmental concern can be considered as a good predictor of consumers’ purchase intentions for green products. Choi et al. (2009) found
that there is a positive relationship between consumers purchasing behavior, willingness to pay more for green and awareness of green products. This study analyzed consumers’ environmental concerns and actual purchasing behavior in hotel industry in the United States and Greece. It claimed that if consumers have a higher level of green awareness, they were willing to pay premium price for the eco-friendly products and services because consumers want to spend money on their beliefs.

Overall, it appears that consumers’ preferences on a restaurant’s green attributes may be affected in various factors, indicating people may prefer certain green attributes for restaurants with various reasons. It is worth investigating the reason behind consumers’ preferences on the specific green attributes for restaurants that they choose. Accordingly, the following question was raised for informants: “Why did you rank the top three green attributes more important (but not others)?”

In summary, current literature contributes to the development of hypotheses to answer RQ1 and RQ2. The open-ended question raised in the end will be used to address RQ3.
CHAPTER 3

METHODOLOGY

3.1 The Research Design

The purpose and questions of a study are the critical factors that determine a suitable research methodology (Newman et al., 2003). It appears that RQ1 and RQ2 can be answered by testing the hypotheses that are developed from the literature review section while RQ3 must be answered with qualitative data. As a result, a mixed methods investigation seems to be the most appropriate approach for this study. In particular, the embedded design (also known as the “concurrent nested strategy”) was used in this study. According to Onwuegbuzi and Leech (2004), a mix method study could help researchers explore more comprehensive research purposes as compared to the single-method investigations. The embedded design mixes both the qualitative and quantitative data sets in one investigation, where one method helps researchers collect supplemental data to support and interpret the primary findings from the other method. In addition, the embedded design can help researchers collect both primary and supplemental data at the same time (Creswell and Clark, 2007), which is also known as the “concurrent nested strategy.” Creswell (2003) suggested the concurrent nested strategy only contains one data collection phase, “during which both quantitative and qualitative data are collected simultaneously” (p.218).

This study adopted the embedded design (the concurrent nested strategy) to collect qualitative and quantitative data simultaneously. The quantitative data served as
the primary data set and were used to identify the important green attributes that influence consumers’ purchase intention and how the different demographic backgrounds influence consumers’ preferences in green. The qualitative results served as the supplemental data set and were used as a support the primary data to interpret the quantitative results. The qualitative data can also help answer RQ3: why consumers perceived certain green attributes as more important than others? Figure 1 presents the visual diagram of the research design for this embedded-design, mix-methods investigation.

![Figure 1](image)

*Figure 1*. Visual diagram of the embedded design / the concurrent nested strategy.

### 3.2 The Instrument for the mix-methods investigation

An embedded design of mixed methods approach allows researchers to collect both quantitative and qualitative data with one instrument, with one data set serving as a supporting role to the other data set (Kwok, 2012). Accordingly, this study only used one survey instrument to collect both quantitative and qualitative data, in which qualitative data provided supplement information for the interpretations of the quantitative results.

The survey instrument was advanced from a review of relevant literature as discussed above and contains two sections. The first section includes 12 statements. Each
describes one green practice that can be taken by restaurants. Participants were asked to rate each statement in a 7-point Likert scale (“1” meaning “Extremely Important” and “7” suggesting “Not Important At All”). It is possible that there are additional important green attributes for restaurants that have not been identified in the literature review section. Accordingly, participants were also asked to optionally provide three additional important green attributes that have not been listed in the survey. As suggested in the concurrent nested strategy in an embedded-design investigation, the survey instrument ends with an open-ended essay question, which states: “Why did you rank the top three green attributes more important (but not others)”. The second section of the instrument includes questions to collect participants’ demographic information. It takes each participant about 15 minutes to complete the survey.

To ensure content validity and the reliability of the survey, the research team developed a draft survey from a review of relevant literature. A validating question was purposefully “buried” within the 12 statements, which states: “Please check ‘Somewhat Important – 3’ to validate your answer.” Only the complete surveys where “3” is marked for the validating question would be included in data analysis. After the survey was developed, it was then reviewed and critiqued by a research panel that was compiled with eight university professors and 10 graduate students in hospitality management. Recommendations were taken into considerations. Minor revisions were made regarding the wording of the statements and demographic questions. To ensure the reliability of the instrument, a pilot study was conducted with a sample in the City of Pasadena in Los Angeles County, California. In this pilot study, 30 surveys were distributed, and 22
surveys were used in pilot testing (eight surveys were discarded for incomplete and invalid responses). Subsequently, reliability was tested, and the Cronbach’s $\alpha$ was .898.

### 3.3 Sampling Procedure and Data Collection

The final survey was administered strictly online through Qualtrics.com, a leading technology provider for market research and data analysis. Before the survey was fully launched online, a test run on the online survey was conducted on Qualtrics.com. The test run collected 49 complete surveys. The research team reviewed the responses and made additional but minor revisions were made before the survey was fully launched online. The second pilot study was conducted and Cronbach’s $\alpha$ in this test run was .995.

Afterwards, an invitation was sent by Qualtrics.com to the consumers meeting the following criteria: (a) consumers who are 18 years old; (b) consumers living in the United States; and (c) consumers who had dined in a restaurant at least once in the past three months. Qualtrics administrated the survey in February 2015 and collected 610 surveys (excluding the 49 surveys collected in the test run). However, 228 participants failed to check “3” in the “validating” questions, and thus was excluded from data analyses. In the end, 382 useful surveys were retained. The reliability of the final sample with 382 useful surveys was conducted, and the Cronbach’s $\alpha$ was .955.

### 3.4 Quantitative Data Analysis

The statistical analysis procedures for the quantitative data employed in this study were descriptive statistics, repeated measures ANOVA, post hoc analysis, and multiple regressions (SPSS, version 22.0). To test whether three types of green attributes (food-,
environmental, and administrative-focus) are valued differently (H1), a repeated-measures ANOVA was performed, followed by post hoc analyses using pairwise comparisons (with Bonferroni corrections). Multiple regression analyses were conducted to test demographic effects (gender, education, income, and age) on consumers’ perceived importance of green attributes (H2, H3, H4, and H5).

3.5 Qualitative Data Analysis

The content analysis method was employed to analyze qualitative data collected in this study, which is a commonly used method to analyze descriptive data and to interpret the qualitative findings (Schreier, 2012). As a data analyzing method, the content analysis method is used to interpret phenomena in a systematic, objective, and qualified way. As recommended by Creswell (2003), this study followed the six generic steps of qualitative data analysis:

- Preparing and organizing data to analyze. In this step, researchers should do data screening and arranging the data into different types.
- Obtaining the general sense of information by reading through all the data. It will help researchers to get general impression of overall meaning.
- Coding data. This is a detailed analysis process, and a “process of organizing the material into “Chunks” before bringing meaning to those “Chunks”” (Rossman& Rallis, 1998, P.171). Researchers need to get a list of clustered topics by overall reading and segment data into categories.
- Generating a description after coding process.
• Advancing how the description and categories will represent the qualitative findings. Researchers can use narrative passage, detailed discussion, visual, figures or tables to convey the findings.

• Interpreting the meaning of data. The explanation could be personal interpretation based on researchers’ culture, history and experiences. It could also be a meaning by comparing the data findings and literature.

3.5.1 Measures to Achieve Trustworthiness

When analyzing and reporting qualitative data, it is important to ensure the validity and reliability of qualitative data and make sure reader could unmistakably follow the analysis and conducting conclusions (Downe-Wamboldt, 1992; Schreier, 2012). The term of trustworthiness, developed by Lincoln and Guba in 1985, is the most widely used standards for evaluating the validity of content analysis. In addition, Lincoln and Guba (1985) emphasized the importance of trustworthiness when the content analysis are generate from raw data without theory-based matrix. There are five alternatives to evaluate a qualitative research, that is, credibility, dependability, conformability, transferability and authenticity. Credibility refers to that participants are identified and described in the research. Dependability indicates qualitative date could keep stable over time and no matter in whatever condition. Conformability means objectively, there should have a consistent among different independents in regarding to the data accuracy and relevance. Transferability refers to the potential that the results could be transferred to other groups or target participants. Lastly, from the perspective of establishing authenticity, researchers should be able to show the realities in their fair and faithful way.
Table 1 outlines the measures that were particularly taken in this study to ensure the trustworthiness of the qualitative investigation.

Table 1

Measures Taken to Ensure the Trustworthiness of this Qualitative Investigation

<table>
<thead>
<tr>
<th>Trustworthiness</th>
<th>Measures taken in this study to achieve trustworthiness</th>
</tr>
</thead>
</table>
| Credibility     | • The researcher built rapport with the informants by signaling to the informants that the researcher in this study can be trusted. The Consent Release Form was showed in the first page of the survey, and participants were informed that this study had been approved by IRB.  
• Multiple pilot tests were performed to determine whether the qualitative collected can be used to answer the proposed question. |
| Dependability   | • A validating question was “buried” in the instrument. Only the answers provided by the informants who “passed” the validating question were included in data analysis.  
• Direct quotes were used in reporting the qualitative findings.  
• Direct quotes can be tracked & audited with the usage of audit trail. |
| Conformability  | • The instrument of this study was reviewed for multiple times by senior researchers; revisions were made to address the possible faults raised by the senior researchers. |
| Transferability | • The data were collected through Qualtrics, which sent out the invitation to a national sample.  
• The informants were selected after they pass three screening questions. The informants represents a group of consumers living in the U.S. who are at least 18 years old and had dined in a restaurant in the past three months. |
| Authenticity    | • The qualitative analysis procedure and results were checked with the senior researchers before they were reported.  
• Direct quotes were used in reporting the qualitative data. |

The following section presents two types of qualitative findings. It begins with a report on the fill-in-the-blank question regarding the additional important green attributes, followed by the results of why certain green attributes mean more important to some consumers.
CHAPTER 4

RESULTS

4.1 Quantitative Results

4.1.1 Descriptive Statistics

As suggested in Table 2, among the 382 respondents from the U.S., the sample was comprised 45.5 percent female, 53.9 percent male and 0.5 percent other. Approximately, 79.8 percent of the respondents were white. The average age of respondents were 42.77 years old (SD = 15.08), 14.4% of respondents were between the ages of 26-30, followed by the age group 31-35 and 18-25, which accounted for 14.2 and 12.1. Approximately, 50 percent of the sample had received at least a bachelor’s degree. The majority of the respondents (58.8%) reported having middle class household income ($35,000 – $99,999). Approximately, 46.6% of respondents were eating out one to two times per week.

Table 2

Descriptions of the Participants

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>206</td>
<td>45.5</td>
</tr>
<tr>
<td>Male</td>
<td>174</td>
<td>53.9</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>46</td>
<td>12.1</td>
</tr>
<tr>
<td>26-30</td>
<td>55</td>
<td>14.4</td>
</tr>
<tr>
<td>31-35</td>
<td>54</td>
<td>14.2</td>
</tr>
<tr>
<td>36-40</td>
<td>45</td>
<td>11.8</td>
</tr>
<tr>
<td>41-45</td>
<td>25</td>
<td>6.6</td>
</tr>
<tr>
<td>Variables</td>
<td>Number</td>
<td>Percent %</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------</td>
<td>-----------</td>
</tr>
<tr>
<td>46-50</td>
<td>27</td>
<td>7</td>
</tr>
<tr>
<td>51-55</td>
<td>33</td>
<td>8.7</td>
</tr>
<tr>
<td>56-60</td>
<td>34</td>
<td>8.9</td>
</tr>
<tr>
<td>61-65</td>
<td>33</td>
<td>8.7</td>
</tr>
<tr>
<td>65 or older</td>
<td>30</td>
<td>7.6</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school</td>
<td>45</td>
<td>11.8</td>
</tr>
<tr>
<td>Some collage but no degree</td>
<td>99</td>
<td>25.9</td>
</tr>
<tr>
<td>Two year collage degree</td>
<td>47</td>
<td>12.3</td>
</tr>
<tr>
<td>Four year collage degree</td>
<td>105</td>
<td>27.5</td>
</tr>
<tr>
<td>Some graduates education but no degree</td>
<td>27</td>
<td>7.1</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>38</td>
<td>9.9</td>
</tr>
<tr>
<td>Doctoral degree or professional degree (JD, MD)</td>
<td>21</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>Ethnicity origin (or race)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>305</td>
<td>79.8</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>21</td>
<td>5.5</td>
</tr>
<tr>
<td>Black or African American</td>
<td>23</td>
<td>6.0</td>
</tr>
<tr>
<td>Native American or American Indian</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>29</td>
<td>7.6</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fewer than $20,000</td>
<td>38</td>
<td>9.9</td>
</tr>
<tr>
<td>$20,000 to $34,999</td>
<td>50</td>
<td>13.1</td>
</tr>
<tr>
<td>$35,000 to $49,999</td>
<td>59</td>
<td>15.4</td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>94</td>
<td>24.6</td>
</tr>
<tr>
<td>$75,999 to $99,999</td>
<td>72</td>
<td>18.8</td>
</tr>
<tr>
<td>$100,000 to $149,999</td>
<td>48</td>
<td>12.6</td>
</tr>
<tr>
<td>$150,000 or More</td>
<td>21</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>Number of Times Dining Out per Week</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fewer than 1</td>
<td>92</td>
<td>24.1</td>
</tr>
<tr>
<td>1-2 times</td>
<td>178</td>
<td>46.6</td>
</tr>
<tr>
<td>3-5 times</td>
<td>68</td>
<td>17.8</td>
</tr>
<tr>
<td>6-10 times</td>
<td>26</td>
<td>6.8</td>
</tr>
<tr>
<td>11-15 times</td>
<td>12</td>
<td>3.1</td>
</tr>
<tr>
<td>16+ times</td>
<td>6</td>
<td>1.6</td>
</tr>
</tbody>
</table>

4.1.2 Hypothesis Testing

Repeated-measure analysis of variance (ANOVA) was used in order to determine if there were any significant difference between three types of green attributes (food-, environmental, and administrative-focus) in is study. Post hoc Procedures using pairwise comparisons (with Bonferroni corrections) were used to determine difference between
three types of green attributes. Table 3 presents mean values, standard deviations, reliability estimates of scales, and correlations among variables. The result of a repeated measures ANOVA suggests a significant difference among three types of green attributes in terms of consumers’ perceived importance (Wilks' Lambda = .88, F\((2,380) = 26.60, p < .001, \eta^2 = .12\)). H1 was supported. The post hoc multiple comparisons with Bonferroni correction (see Table 4) indicate that respondents valued environment-focused attributes (M=2.76) more highly than food-focused attributes (M=3.019) and administration-focused attributes (M=3.011), while no significant difference was found between the perceived importance of food-focused and administration-focused attributes.

Table 3

Descriptive Statistics, Correlations, and Reliability Estimates

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>42.77</td>
<td>15.08</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>3.44</td>
<td>1.70</td>
<td>.02</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>3.89</td>
<td>1.66</td>
<td>.06</td>
<td>.39**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food-Focused</td>
<td>3.02</td>
<td>1.51</td>
<td>.14**</td>
<td>-.07</td>
<td>-.06</td>
<td>.861</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment-Focused</td>
<td>2.76</td>
<td>1.22</td>
<td>-.03</td>
<td>-.06</td>
<td>-.07</td>
<td>.68**</td>
<td>.931</td>
<td></td>
</tr>
<tr>
<td>Administration-Focused</td>
<td>3.01</td>
<td>1.43</td>
<td>.05</td>
<td>-.07</td>
<td>-.10</td>
<td>.67**</td>
<td>.86**</td>
<td>.921</td>
</tr>
</tbody>
</table>

1. Diagonal cells contain Cronbach’s alpha coefficients.
** p < .01
* p < .05

Table 4

Post-hoc Pairwise Comparisons

<table>
<thead>
<tr>
<th>Type I</th>
<th>Type J</th>
<th>D (I – J)</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food-Focused</td>
<td>Environment-Focused</td>
<td>.256**</td>
<td>.058</td>
</tr>
<tr>
<td>Food-Focused</td>
<td>Administration-Focused</td>
<td>.008</td>
<td>.061</td>
</tr>
<tr>
<td>Environment-Focused</td>
<td>Administration-Focused</td>
<td>-.248**</td>
<td>.037</td>
</tr>
</tbody>
</table>

** p < .01 (Bonferroni Correction)
The respondents were surveyed regarding the level of importance of certain green attributes when selecting a restaurant to eat at using a 7-point Likert scale (“1” meaning “Extremely Important” and “7” suggesting “Not Important At All”). The results confirm that respondents value the twelve green attributes differently (Wilks' Lambda = .61, $F_{(11,371)} = 21.63, p < .001, \eta^2 = .39$). Referring to Table 5., respondents reported that the most important green attributes for green restaurant that they expected when then visit a green restaurant were minimizing harmful waste (M=2.38, SD=1.36), Participating in recycling programs (M=2.41, SD=1.37) and using recyclable products, such as paper towels, toilet paper, take-out containers, and so on (M=2.66, SD=1.46). The choices “Reporting that the restaurant is using renewable power. (For example: Electricity and power that are generated from renewable sources such as wind, solar, geothermal, small hydro, and biomass)” (M=3.21, SD=1.51) and “Processing and displaying a "green certification" (e.g., LEED, Green Restaurant Association, Green Seal Certification, and etc.)” (M=3.13, SD=1.60) were not find to be an attributes that were even “somewhat important” to these respondents when visiting a restaurant.

Multiple regressions were used to investigate the relationship between demographic factors and consumers’ preferences of three types of green attributes. Four of the demographic variables (age, gender, income level and education background) were tested in this study as independent variables. Besides the continuous variable (age), the other three categorical variables (gender, income level and education background) were recoded. Dummy variables, as an artificial variable, was created for gender, income level and education background. The value of each independent variable was measured by importance score of attributes. Three dependent variables were used in this study: food-
focused green attributes, environment-focused green attributes and administration-focused green attributes. The 12 green attributes were recoded in one of the three categories mentioned above.

Table 5
Level of Importance of Green Attributes

<table>
<thead>
<tr>
<th>Green Attributes</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Serving organic food/ingredients.</td>
<td>3.10</td>
<td>1.75</td>
</tr>
<tr>
<td>2. Serving locally grown food/ingredients.</td>
<td>2.88</td>
<td>1.46</td>
</tr>
<tr>
<td>3. Practicing energy efficiency and conservation. (For example: using energy-saving lights, refrigeration, AC system, and gas application, as well as energy management system to track energy use, etc.)</td>
<td>2.86</td>
<td>1.50</td>
</tr>
<tr>
<td>4. Practicing water efficiency and conservation. (For example: using water-saving toilets, faucets, laundry, sprinkler system or other water saving equipment to advance water efficiency.)</td>
<td>2.79</td>
<td>1.48</td>
</tr>
<tr>
<td>5. Reporting that the restaurant is using renewable power. (For example: Electricity and power that are generated from renewable sources such as wind, solar, geothermal, small hydro, and biomass)</td>
<td>3.21</td>
<td>1.51</td>
</tr>
<tr>
<td>6. Minimizing harmful waste (For example: replacing harmful products with safer alternatives; to reduce chemical use, etc.)</td>
<td>2.38</td>
<td>1.36</td>
</tr>
<tr>
<td>7. Participating in recycling programs.</td>
<td>2.41</td>
<td>1.37</td>
</tr>
<tr>
<td>8. Participating in composting programs.</td>
<td>3.02</td>
<td>1.45</td>
</tr>
<tr>
<td>9. Using recyclable products, such as paper towels, toilet paper, take-out containers, and so on.</td>
<td>2.66</td>
<td>1.46</td>
</tr>
<tr>
<td>10. Demonstrating a commitment to socially responsible “green projects.” (For example: participating in/donating to environment projects or paying for reduces carbon footprint.)</td>
<td>2.99</td>
<td>1.51</td>
</tr>
<tr>
<td>11. Training employees to use green products and implement green practices.</td>
<td>2.91</td>
<td>1.50</td>
</tr>
<tr>
<td>12. Processing and displaying a &quot;green certification&quot; (e.g.: LEED, Green Restaurant Association, Green Seal Certification, and etc.).</td>
<td>3.13</td>
<td>1.60</td>
</tr>
</tbody>
</table>

As a result of fitting a three-category multiple regression model, the following results were obtained. H2, H3, H4, and H5 predicted that gender, age, education levels, and household income levels would have impact on consumers’ perceived importance of green attributes. As shown in Table 6, the regression results suggest a significant gender effect on perceived importance of the three types of green attributes. Specifically, as
opposed to female counterparts, male respondents generally assigned lower ratings on food-focused, environment-focused, and administration-focused green attributes. H2 was supported. Contrary to the prediction, age was found predictive only on the perceived importance of food-focused attributes ($B = .014, p < .01$). The results indicate that younger respondents in general value food-focused attributes more highly than older respondents. H3 was partially supported. Education and income were not found to be significant predictors of perceived importance for any type of green attributes. H4 and H5 were not supported.

Table 6

Regression Results for Gender, Age, Education, and Income’s Predicting Perceived Importance of Green Attributes

<table>
<thead>
<tr>
<th>Variables</th>
<th>Food-Focused</th>
<th>Environment-Focused</th>
<th>Administration-Focused</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$   S.E.</td>
<td>$B$   S.E.</td>
<td>$B$   S.E.</td>
</tr>
<tr>
<td>Gender</td>
<td>.344* .155</td>
<td>.314* .127</td>
<td>.370* .148</td>
</tr>
<tr>
<td>Age</td>
<td>.014** .005</td>
<td>-.002 .004</td>
<td>.006 .005</td>
</tr>
<tr>
<td>Education</td>
<td>-.056 .049</td>
<td>-.037 .040</td>
<td>-.041 .047</td>
</tr>
<tr>
<td>Income</td>
<td>-.047 .050</td>
<td>-.039 .041</td>
<td>-.079 .048</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.027</td>
<td>.012</td>
<td>.020</td>
</tr>
<tr>
<td>$F$</td>
<td>3.629** 2.118</td>
<td>2.921*</td>
<td></td>
</tr>
</tbody>
</table>

N = 379, Gender was coded female = 0 and male = 1.
** $p < .01$
* $p < .05$

According to the results of multiple regressions, the adjusted $R^2$ values are perceived very low in this study. The adjusted $R^2$ value is often used to summarize the fit as it takes into account the number of variables in the model. According to Cotton (2002), there are many real-world occurrences can lead to lower values of $R^2$ even though significant effects that have practical importance may be present. Marakkath published a book titled “Sustainability of Indian microfinance institutions a mixed methods approach.”
in 2014. The result of multiple regressions also had a low adjusted $R^2$. Such result was reported because the model has a significant $F$ value. Likewise, the low adjusted $R^2$ in this study was acceptable because the independent variable used in the model has a significant explanatory power. In current study, the low adjusted $R^2$ value reflects the high level of variation in importance of three types of green attributes. Regardless of the higher variation, the results from this analysis indicate gender and age are influence consumers’ perceived importance of green attributes with a significant $p$ value and $F$ value. There are few specific reasons as to why the regression model used in this study has a low $R^2$ value. One of the key reasons is that the independent variables included in this study are demographic variables. In general, age, gender and other demographic variables are difficult to be used as predictors to measure consumers’ general purchase preferences because of psychological factors. Demographic variables cannot comprehensively explain human’s unique characters. Current literature suggested that female responds generally assigned higher ratings on food-focused, environment-focused, and administration-focused green attributes. In addition, younger respondents valued food-focused green attributes higher than older respondents. The qualitative data also show consumers would rate certain green attributes more important than the others because of other factors, such as consumers rated certain green attributes more important than other because of their belief and knowledge of green restaurant. In order to solve the problem of low adjusted $R^2$, future studies may consider adding other psychological variables into analysis, such as consumers’ attitudes, behavior intentions, involvement and knowledge about green and so on, which possibly would have greater influence on
consumers’ preference and perception of three types of green attributes than age, gender, and other demographic variables.

Another key reason that a low $R^2$ is acceptable in this study is because the analysis was not intended to explore or identify the best-fit model by conducting multiple regressions. Rather, it solely aimed to test the statistical differences of consumers’ perceived importance of three types of green attributes based on four demographic variables. This situation is similar to Marakkath’s study (2014), where their findings can have meaningful implications even with a very low adjusted $R^2$ as long as there is statistical significance in the $p$ value and F value.

4.2 Qualitative Results

4.2.1 Additional Important green attributes

In the first part of qualitative data, participants were asked to optionally identify three green attributes, which are not on the list but considered important. One open-ended question was embedded in the survey instrument: “If there are additional important attributes that are not listed above, specify and rate its importance: (put “N/A” in the box if there is no more).” Among 382 respondents, only 10 participants filled out the blank of additional green attributes, and 13 new attributes were collected. However, all of these 13 attributes can be classified into our existing categories. For example, the participant thought “using reusable utilities” (Participant’s ID: 99) is also important, and this attribute can be considered as the same as the existing green attributes – “using recyclable products” and “Practicing energy efficiency and conservation”. Another participants thought that “serving healthier food” (Participant’s ID: 299) is an additional green
attribute, but was already considered as a green attribute in the category of Food-focused
green attributes. To some extent, this finding helps confirm the validity of the survey
instrument because it seems the 12 statements listed in the survey have included all
possible important green attributes for restaurants.

4.2.2 Reasons Why Certain Green Attributes Are Perceived More Important Than

Others

To understand why consumers perceived certain green attributes as more
important than others, one open-ended question was embedded in the survey instrument:
“Why did you rate the top three green attributes most important (but not the others)?”
There were 382 open-ended answers administrated with 301 usable responses, which
yielded a 78.80% responses rate. Once the data was collected, it was compiled and
analyzed, following the six steps that are recommended by Creswell (2003). Firstly, data
screening was conducted. There were 81 unusable data sets that were deleted. After
reading through all the data, nine categories emerged. The reported reasons for why
consumers perceived certain green attributes of green restaurant more important included:
certain green attributes will benefit environment; certain green attributes will benefit
human health; certain green attributes will benefit both environment and health; certain
green attributes matched consumers’ personal belief and knowledge regarding green
practices; certain green attributes match consumers’ personal green behavior at home;
certain green attributes are easy to implement; certain green attributes will benefit
restaurant; certain green attributes will benefit community; all the green attributes are
important.
The results of open-ended essay question are shown in the Table 7. In summary, 38.2 percent of respondents (N=115) considered the reason they rate the certain green attributes more important is those green attributes matched their personal belief and knowledge toward green practices. Respondents claimed they “have more information on these items and would like to see them used” (Participant’s ID: 316) and those are their “personal understanding of green” (Participant’s ID: 100). Certain green attributes will benefit our environment is the reason for 16.94 percent of participants. They believe “those green attributes will directly affect our environment” (Participant’s ID: 16) and “if restaurant can practice those green attributes, it will help to protect earth” (Participant’s ID: 110). There were 10.96 percent of participants thought certain green attributes of green restaurant can benefit their health, and 11.96 percent of participant deemed “certain green attributes are the easiest and most important things a restaurant can do” (Participant’s ID: 201). There were also 6.64 percent of participant who thought they implement certain green practices at home, so they also expect restaurant can practice those attributes as well. Additionally, 4.95 percent of participants believe certain green attributes will benefit community, and 3.99 percent believe the restaurant can “actually increase food safety, save money and resources” (Participant’s ID: 178) by implementing certain green attributes in green restaurant. There were 3.99 percent of participants who deemed all the green attributes in the list of current study are important for restaurants.
## Table 7

Consumers Preferences Toward Green Attributes

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit environment</td>
<td>51</td>
<td>16.94</td>
</tr>
<tr>
<td>Benefit health</td>
<td>33</td>
<td>10.96</td>
</tr>
<tr>
<td>Benefit environment &amp; health</td>
<td>5</td>
<td>1.67</td>
</tr>
<tr>
<td>Personal belief and knowledge</td>
<td>115</td>
<td>38.2</td>
</tr>
<tr>
<td>Personal green behavior</td>
<td>20</td>
<td>6.64</td>
</tr>
<tr>
<td>Easy to implement</td>
<td>36</td>
<td>11.96</td>
</tr>
<tr>
<td>Benefit restaurant</td>
<td>12</td>
<td>3.99</td>
</tr>
<tr>
<td>Benefit community</td>
<td>17</td>
<td>4.65</td>
</tr>
<tr>
<td>All important</td>
<td>12</td>
<td>3.99</td>
</tr>
</tbody>
</table>

N=301
CHAPTER 5

DISCUSSION

While current literature suggests that, in general, a restaurant’s green initiatives have positive impacts on consumers’ purchasing intention to the business, this study was designed to compare consumers’ perceived importance of various green features/practices in restaurants with a national and random sample. The analyses yield some meaningful results for restaurant owners and managers. For example, it found that consumers’ value environment-focused green attributes more important than food-focused and administration-focused green attributes. Especially, “minimizing harmful waste,” “participating in recycling programs,” and “using recyclable products, such as paper towels, toilet paper, take-out containers, and so on” are listed as the top three most important green attributes for restaurants. This result is partially consistent with previous studies. Schubert et al. (2010) reported participants rated the reducing waste, using recycled products and offering locally grown food as the most important green practices of restaurants. However, the previous literature claimed that food-focus green attributes as a visible green attributes for customers were rated more important than the invisible environmentally friendly green practices for customers (Jang, Kim, & Bonn, 2011; Dipietro & Gregory, 2012).

In addition, it is found as opposed to female counterparts, male respondents generally assigned lower ratings on food-focused, environment-focused, and administration-focused green attributes. Although there were found no significant differences between genders (Hu, Parsa, & Self, 2010), current finding is consistent with a
study done in United States by Schubert et al. (2010) that female consistently rated the importance of green practices higher than male because they thought implementing green practices is healthier. Hu, Parsa, and Self, (2010) study could have differed because of the fact that the study was conducted in Taiwan with different culture, which might influence gender perceptions. Moreover, findings of current study demonstrated that younger respondents in general value food-focused attributes higher than older respondents. Previous studies suggested that older people show more intention on green products and are more willing to purchase those products (Hu, Parsa, & Self, 2010; Zimmer, Stafford, & Stafford, 1994). However, among all the green attributes, younger people care more about visible food-focus green attributes. Previous studies also demonstrated that people who are under 35 years old perceived that is was more important to offer organic food and a health menu (Schubert et al., 2010; Jang, Kim, & Bonn, 2011). Current study did not find any significant difference between various income levels and education backgrounds, which is echo the study by Newell and Green (1997) that showed there were not much differences on perceived importance of green practices depends on consumers’ education and income levels. However, the result is inconsistent. Other previous studies found a positive relationship between education background and value of green practices. The higher education level people have the higher value they placed on the green practices (Hu, Parsa, & Self, 2010; Dipietro et al., 2013; Nabil, 2010). In other words, the result of multiple regressions demonstrated that younger female consumers would pay more attention on food-focused green attributes in restaurants. It becomes critical for restaurants targeting younger female consumers to take on more food-focused green practices. Future studies may include additional demographic
variables in analyses and measure how much impact a consumer’s preferences have on his/her behavior (e.g., wait time and spending).

The current results reveal a new trend of consumers’ concerned green attributes in green restaurant. Consumers are starting to pay more attention toward the restaurants’ back-of-house green practices instead of only focusing on the green attributes, which directly and visibly benefit consumers. To appeal to consumers, restaurants may consider taking more green initiatives that have a strong environmental focus rather than food-focused or administration-focused practices, including such specific approaches as minimizing harmful waste and participating in recycling programs. Restaurant owners and managers may also put additional efforts in marketing communications about the restaurant’s initiatives in environment-focused green attributes.

The results of the qualitative data analysis shows, consumers rated certain green attributes more important than other because of their belief and knowledge of green restaurants, which is consistent with finding of Hu, Parsa, and Self (2010). Consumer’s information and knowledge about green practices were significant predictors of their actual green behaviors and green purchase (Chan, 1999), and there is a positive relationship between consumers’ knowledge of green and their intention in purchasing green products, the more consumers know about green practices the higher intention they pay on green products and businesses (Laroche, 2002). As we mentioned at the beginning, current study adopted a mixed method of the embedded design / concurrent nested strategy, using qualitative data as a supported data to interpret quantitative data. Concatenating to the previous finding, consumers tend to rate back-of-house green attributes more important than before. The results revealed the public has been
progressively informed and gained increasingly information about green practices. Nowadays, consumers are not only focus on the green attributes that are directly benefit them but show a increasing intention on the green attributes that are more focused on our environment. Restaurants should continually market and communicate about what they are doing in green to the public in order to attract more attention from consumers and increase their purchase intention. The second major reason why consumers perceived certain green attributes that are more important than others is that participants believe those green attributes will benefit our environment, which are consistent with a study conducted by Choi et al. (2009). Authors analyzed consumers’ environment concern and actual green behavior in the lodging industry in the United States and Greece. The result showed that comparing with the consumers in United States, people in Greece has more knowledge of eco-friendly practices and was more likely to visit environmentally friendly hotels. In addition, this finding also supported the current quantitative finding that participants rated environment-focused green attributes more important than food-focused green attributes and administration-focused green attributes. An increasing number of consumers believe that restaurants could and should put more effort to save our environment.

5.1 Theoretical Implications

This paper makes some theoretical contributions to the studies in green attributes for restaurants. Firstly, many research studies have been conducted to measure the impact of selected green attributes on restaurant consumers’ purchasing intentions. For example, Jang, Kim, and Bonn (2011) focused on limited green attributes (i.e., using organic food,
participating pro-environment activities, participating in recycling, and using recycled paper) when measuring consumers’ intentions of dining in a green restaurant. Dutta et al. (2008) examined the green attributes of using locally grown and organic food, using recycling paper, participating in pre-environment activities, and recycling activities. Very few investigations were administrated to compare the consumers’ perceived importance of all possible important green attributes in one setting. This study helped address this gap by examining and comparing all green attributes for restaurants in one investigation.

Secondly, this study made an exploratory attempt by grouping various green attributes into three logical categories for comparisons, namely food-focus, environment-focus, and administrative focus green attributes. These categories introduced in this study allow researchers to examine different green attributes in a collective way. Future studies may also use these three categories when examining organizations’ green initiatives.

Thirdly, the paper provides additional empirical evidence to the current debate in literature regarding to the influence of a consumer’s demographic background on his/her attitudes towards certain green attributes for restaurants. For example, this study confirms that female generally assigned higher ratings on food-focused, environment-focused, and administration-focused green attributes than their counter parts. Younger consumers also seem to value food-focused green attributes for restaurant more than older consumers.

Fourthly, this study adopted the embedded-design, concurrent nested strategy in data collection and introduced a new survey instrument to collect both quantitative and qualitative data at the same time. Even though more statistical testing with a different sample may help further support the validity of the instrument, the analysis yields reliable results with a high Cronbach’s α level. It indicates that this new survey instrument can be
further modified and tested in other studies in a similar setting (e.g., in other food-service establishments or other sectors in the hospitality industry).

Lastly, the qualitative findings also add some preliminary and exploratory finding of why certain green attributes are perceived as more important than others. It appears that a consumer’s beliefs on green initiatives and green practices taken at home might have more impact on their intentions of dining in a green restaurant. Future research is encouraged to build on such preliminary findings to further investigate the relationship between the constructs emerged in Table 7 and other variables.

5.2 Practical Implications

The research findings of this study provide additional insights to current literature, allowing restaurant owners and managers to make informed decisions about the business’ commitments to the environments. For example, the quantitative findings suggest that consumers value environment-focused green attributes higher than food-focused and administration-focused green attributes. In addition, younger female consumers would pay more attention on food-focused green attributes in green restaurants. The qualitative findings showed that personal belief and knowledge about green practices is the top reason why consumers perceived certain green attributes more important than others. It is important for restaurant companies to educate and communicated with their customers about their green practices in order to capitalize the benefits that due to the knowledge of green practices. In particular, restaurant owners and managers may consider the following recommendations:
• To highlight what the restaurants have done in environment-focused green attribute on their website, advertisement, and other marketing materials to all consumers.

• To take the green initiatives that are deemed most important to consumers, such as minimizing harmful waste, participating in recycling program, and using recyclable products.

• To focus on female consumers as they view all three categories of green attributes more important than their counterparts do.

• If a restaurant plans to serve healthy and organic food, make sure the restaurant’s environments and the whole concept also appeal to younger groups of consumers because younger consumers seem to favor a restaurant’s food-focused green practices over other attributes.

• When marketing the green restaurants to consumers, target those who have strong personal beliefs and knowledge about going green.
CHAPTER 6

LIMITATIONS

As with many studies, the current study contained a number of limitations, which can be addressed in further research. First, the use of the sampling only focused on the people who are currently in the United States limits the generalizability of the result, as the sample may not be representative of the global dining population. Future studies should be conducted from other countries given the difference in values and cultures (Hu et al., 2010). Second, data collected strictly online through a data collecting company could produce biased results as the descriptive analysis reports, 79.8 percent of participants are white.

This study analyzed the most important green attributes perceived by consumers, but how will those certain green attributes actually influence consumer patronage intention at green restaurant, such as if the restaurant implement the certain green attributes, how much more in price they are willing to pay for, how much farther they are willing to travel and how much longer they are will to wait. The results derived should be interpreted as a foundation for more thorough follow-up research.

In summary, this study compared consumers’ preferences on three categories of green attributes. It also reported how consumers’ certain demographic backgrounds influence their preferences and explored the reasons why consumers rate certain green attributes more important than others. Even though there were some limitations, the results also yield meaningful theoretical and practical contributions to sustainability studies in the restaurant industry.
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APPENDIX A

IRB Approved Letter for Current Study
Date: 04-Nov-2014
To: Lan Lan Hu

From: Dr. Jeffery S. Mio
Chair, IRB (Human Subjects Protection Committee)

cc: IRB file
Linchi Kwok, PhD

Subject: Protocol number 14-0048

Your new protocol entitled "Measuring Consumer Perceived Importance of Green Attributes for Restaurant" has been reviewed by the Cal Poly Pomona Institutional Review Board (IRB) by the Expedited process. It was found to be in compliance with applicable federal and state regulations and Cal Poly Pomona policies regarding the protection of human subjects used in research. Thus, the Cal Poly Pomona IRB grants you approval to conduct the research. On its behalf, I thank you for your adherence to established policies meant to ensure the safety and privacy of your study participants. You may wish to keep a copy of this memo with you while conducting your research project.

You may initiate the project as of 04-Nov-2014 and it must be completed by 04-Nov-2015. Federal regulations limit the IRB approval of studies for up to one year. If you find the need to renew your protocol, please remember to submit a request to the IRB at least a couple of weeks before this end date to ensure continuous human subjects' protection and IRB approval. It would be appreciated that you advise the IRB upon the completion of your project involving the interaction with human subjects.

Applicable notes: Study approved through expedited process.

Approval is conditional upon your willingness to carry out your responsibilities as the principal investigator under University policy. Your research project must be conducted according to the methods described in the final approved protocol. Should there be any changes to your research plan as described, please advise the IRB, because you may be required to submit an amendment. Additionally, should you as the investigator or any of your subjects experience any "problems which involve an undescribed element of risk" (adverse events in regulatory terms), please immediately inform the IRB of the circumstances.

If you need further assistance, you are encouraged to contact the IRB administrator, Bruce W. Kennedy MS RLATG CMAR CPIA at 909-869-4215.

The committee wishes you success in your research endeavors.

Jeffery S. Mio PhD
Professor, Psychology
College of Letters, Arts, and Social Sciences

APPENDIX B

Online Survey Instrument for Current Study
Default Question Block

Are you 18 years or older?
Yes
No

Did you eat in a restaurant in the past three months?
Yes
No

Are you currently live in the U.S.?
Yes
No
California State Polytechnic University, Pomona
Informed Consent Form for Research Involving Human Subjects

You are being invited to participate in a research study, which the Cal Poly Pomona Institutional Review Board (IRB) has reviewed and approved for conduct by the investigators named here. This form is designed to provide you - as a human subject - with information about this study. The Investigator or his/her representative will describe this study to you and answer any of your questions. You are entitled to an Experimental Research Subject’s Bill of Rights and a copy of this form. If you have any questions about your rights as a subject, complaints about the informed consent process of this research study, or experience an adverse event (something goes wrong), please contact the Compliance Office within Cal Poly Pomona’s Office of Research at (909) 869-4215. More information is available at the IRB website, www.csupomona.edu/research/irb.

Informed Consent for a Research Study

You are being asked to take part in a research study on “Green attributes for restaurants: What really matters to consumers?” by Lanlan Hu, a master’s student, along with Dr. Linchi Kwok, Assistant Professor, both at California State Polytechnic University, Pomona. The purpose of this study is to identify the important green attributes that influence consumers’ purchase intention when they choose a restaurant. The results of this study are expected to help restaurants implement customer-driven green practices and marketing strategies that better meet their target customers’ needs. You will be asked to rate each of the green attributes on a 7-point scale (1 = Not important at all to 7 = Extremely important), and rank the green attributes from most important to less important. Then you will be asked to answer a few demographic questions. In the end, if you are willing to participate in an in-depth interview with us to further discuss the reasoning behind your choice, you may leave your contact information so that we can reach you afterwards for a phone or Skype interview.

It is important to note that in order to participate in this study, all the participants must be 18 or older. Participation in this study (the survey and/or interview) is completely confidential. We will save the data confidentially and will not present any personal data in this research. No information that can specifically identify you will be released. You may also choose not to participate in the study at any time by closing the browser without receiving any penalty.

By answering “I Agree” to the next question, you acknowledge that you are participating in this research project voluntarily. All data collected during the study will be kept confidential and will only be used for the purpose of this research. Participants name and information identifying as an individual will not be disclosed to anyone. We appreciate your participation and time in advance. We hope the results of this study can improve your dining experience in green restaurant in the future. If you have any questions regarding this study, you may contact Lanlan Hu or Dr. Linchi Kowk, given the following contact information:
I have read and agree to the consent form

I agree

I do not agree
**Section1:** Rating the Green Attributes on 7-Point Likert Scale

Directions: Please rate the importance of each green attribute of restaurants as a RESTAURANT CONSUMER.
(1 = Extremely Important; 7 = Not Important At All; N/A = Not Applicable)

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving organic food/ingredients.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serving locally grown food/ingredients.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practicing energy efficiency and conservation. (For example: using energy-saving lights, refrigeration, AC system, and gas application, as well as energy management system to track energy use, etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Practicing water efficiency and conservation. (For example: using water-saving toilets, faucets, laundry, sprinkler system or other water saving equipment to advance water efficiency.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Reporting that the restaurant is using renewable power. (For example: Electricity and power that are generated from renewable sources such as wind, solar, geothermal, small hydro, and biomass)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Please circle “3-Somewhat Important” to validate your answers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Minimizing harmful waste (For example: replacing harmful products with safer alternatives; to reduce chemical use, etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Participating in recycling programs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Participating in composting programs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Using recyclable products, such as paper towels, toilet paper, take-out containers, and so on.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
Statement

Please rate the importance you place on a restaurant

<table>
<thead>
<tr>
<th>Statement</th>
<th>Extremely Important</th>
<th>Important</th>
<th>Somewhat Important</th>
<th>Neutral</th>
<th>Somewhat Not Important</th>
<th>Not Important</th>
<th>Not Important at all</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrating a commitment to socially responsible “green projects.” (For example: participating in/donating to environment projects or paying for reduces carbon footprint.)</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training employees to use green products and implement green practices.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing and displaying a &quot;green certification&quot; (e.g.: LEED, Green Restaurant Association, Green Seal Certification, and etc.).</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If there are additional important attributes that are not listed above, please specify: (check “N/A” on each line if there is no more).</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. _______________</td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>2. _______________</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>3. _______________</td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Section 2: Ranking the Green Attributes of Sustainable Restaurant**

Direction: Please rank every green attribute from most important to less important. (1 = most important, 2 = 2nd important, 3 = 3rd important, … 12 = 12th important … and 15 = 15th important)

<table>
<thead>
<tr>
<th>Green Attributes</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving organic food/ingredients.</td>
<td></td>
</tr>
<tr>
<td>Serving locally grown food/ingredients.</td>
<td></td>
</tr>
<tr>
<td>Practicing energy efficiency and conservation. (For example: using energy-saving lights, refrigeration, AC system, gas application and energy management system to track energy use etc.)</td>
<td></td>
</tr>
</tbody>
</table>
Green Attributes

| Practicing water efficiency and conservation. (For example: using water-saving toilets, faucets, laundry, sprinkler system or other water saving equipment to advance water efficiency.) | Ranking |
| Reporting that the restaurant is using renewable power. (For example: Electricity and power that are generated from renewable sources such as wind, solar, geothermal, small hydro, and biomass) | Ranking |
| Minimizing harmful waste (For example: replacing harmful products with safer alternatives; to reduce chemical use, etc.) | Ranking |
| Participating in recycling programs. | Ranking |
| Participating in composting programs. | Ranking |
| Using recyclable products, such as paper towels, toilet paper, take-out containers and so on. | Ranking |
| Demonstrating a commitment to socially responsible “green projects”. (For example: participating in/donating to environment projects or paying for reduces carbon footprint.) | Ranking |
| Training employees to use green products and implement green practices. | Ranking |
| Processing and displaying a "green certification" (e.g.: LEED, Green Restaurant Association, Green Seal Certification, and etc.). | Ranking |

1. _______________ The first additional important attribute that you specified in the previous section. (If you did not add any additional attribute, please leave it blank.)

2. _______________ The second additional important attribute that you specified in the previous section. (If you did not add any additional attribute, please leave it blank.)

3. _______________ The third additional important attribute that you specified in the previous section. (If you did not add any additional attribute, please leave it blank.)

1. Can you tell us why you ranked the top three green attributes most important (but not the others)?

________________________________________________________________________
________________________________________________________________________

2. If a restaurant demonstrates a commitment to the top three green attributes you stated, are you willing to pay more, travel farther, and/or stand in a longer line for the service?

- Yes. (If yes, go to Question 3)
3. To what extent?
   - How much more in price? ________%.
   - How much farther are you willing to travel to the restaurant? ________ miles.
   - How much longer wait time? ________ minutes.

(Section 3: Demographic Questions)

1. What is your gender?
   - Male
   - Female
   - Other

2. What is your age (in years)?
   ________________ Years old

3. Please specify your ethnicity origin (or race).
   - White
   - Hispanic or Latino
   - Black or African American
   - Native American or American Indian
   - Asian / Pacific Islander
   - Other, please specified _____

4. What is the highest level of education you have completed?
   - Some high school
   - Some college but no degree
   - Two year college degree
   - Four year college degree
   - Some graduate education but no degree
   - Master's degree
   - Doctoral degree or professional degree (JD, MD)
5. How much total combined income did all members of your HOUSEHOLD earn in 2014?

- Fewer than $20,000
- $20,000 to $34,999
- $35,000 to $49,999
- $50,000 to $74,999
- $75,000 to $99,999
- $100,000 to $149,999
- $150,000 or More

6. Which of the following categories best describes your current employment status?

- Employed full time
- Employed part time
- Not employed, looking for work
- Not employed, NOT looking for work
- Retired
- Students
- Other (please specify) ________________

7. How many adults are there in your household?

- One
- Two
- Three
- Four
- Five
- More than five

8. How many children are there in your household?

- 0
- 1
- 2
- 3
- 4 or more
9. Are you currently working in a restaurant?
   - Yes (If the answer is “Yes”, go to question 10)
   - No (If the answer is “No”, go to question 11)

10. Which category best describes your position in your restaurant company?
   - Executive
   - Managerial position
   - Non-managerial position
   - Owner or share holder of the restaurant
   - Other (please specify) ____________________

11. In the past 6 months, how often, on average, do you eat out in restaurants?
   - Fewer than 1 time per week.
   - 1-2 times per week.
   - 3-5 times per week.
   - 6-10 times per week.
   - 11-15 times per week.
   - +16 times per week.

12. Are you willing to be contacted by the researchers in the future for a phone interview to further explain the answers you provided today? (A $15 worth of Amazon or Target gift card will be provided for those who complete a phone interview).
   - Yes --- “Please leave your contact information (either a phone number or e-mail address) ____________________”
   - No ---- thank them for their time.