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# The Effects of Environmental Consciousness and Menu Information on Consumers' Perceptions of Restaurant Image and Purchase Behavior Related to Local Foods

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THE EFFECTS OF ENVIRONMENTAL CONSCIOUSNESS AND MENU INFORMATION
ON CONSUMERS' PERCEPTIONS OF RESTAURANT IMAGE AND PURCHASE
BEHAVIOR RELATED TO LOCAL FOODS

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DEDICATION

This dissertation is dedicated entirely to my family. Without their unwavering support and positive encouragement I never would have made it through. I would like to especially recognize my wife Annu for her supreme intelligence, patience, and amazing resilience. Also, my mom, dad, and brother Will for their love and support. I'd also like to thank all my friends and colleagues who helped me stay positive and reminded me of the important things in life.

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ABSTRACT

Sustainability initiatives have become increasingly important and relevant to the foodservice industry. Despite the fact that consumer demand for sustainable restaurant practices has grown substantially over the last 10 years, consumers' pro-environmental attitudes and behavioral intentions are not always turned into concordant behavior. Though foodservice operators continue to make progress in developing new methods and strategies for implementing sustainable practices into operations, getting consumers to behave in accordance with their demand is a major challenge.

The purpose of this quasi-experimental study is to determine if consumers' attitudes towards local food, widely considered a sustainable restaurant practice, are congruous with their behaviors, and how communicating the use of local food on a restaurant menu can influence consumers' perceptions of restaurant image and purchase behavior. Using prominent attitude-behavior theories to frame the research, a conceptual model was developed for testing the hypothesized relationships between the independent constructs of environmental consciousness and perception of menu information, and the outcomes of perception of restaurant image and purchase behavior.

Data were collected via a survey instrument administered randomly to eligible guests who were dining at an independent, upscale casual restaurant located in a mid-sized metropolitan city in the southeastern United States. Over a four-week time period in which surveys were administered, restaurant consumers were exposed to three types of menu treatments via the restaurant's daily special menu. To test the conceptual model, a

quantitative methodology was taken and two statistical procedures were used: logistic regression and structural equation modeling (SEM).

Overall, 512 individuals participated in the study and 202 individuals purchased a local food item during the four-week study. Results showed that environmental consciousness was a fairly weak predictor of purchase behavior, demonstrating the presence of a possible attitude-behavior gap. However, the relationship between consumers' perception of the menu information and perception of restaurant image was statistically significant, suggesting that the information on a menu plays a strong role in the development of a customer's perception of restaurant image. Implications of the findings as they relate to both academicians and industry practitioners are discussed, along with future research opportunities.

# TABLE OF CONTENTS

x

# LIST OF TABLES

## LIST OF FIGURES

## LIST OF ABBREVIATIONS

CFA ................................................................................Confirmatory Factor Analysis

EC ................................................................................. Environmental Consciousness

EFA ................................................................................Exploratory Factor Analysis

EPA ................................................................................Environmental Protection Agency

Menu ................................................................................Perception of Menu Information

NRA................................................................................National Restaurant Association

NRN................................................................................Nation's Restaurant News

Purchase ................................................................................ Purchase Behavior

QSR ................................................................................Quick-Service Restaurant

RI ................................................................................Restaurant Image

SEM................................................................................ Structural Equation Model

TPB................................................................................ Theory of Planned Behavior

TRA................................................................................Theory of Reasoned Action

USDA................................................................................ United States Department of Agriculture

USDA ERS ................................................................................USDA Economic Research Service

# CHAPTER 1

## INTRODUCTION

### 1.1 BACKGROUND, CONTEXT, AND IMPORTANCE OF STUDY

#### 1.1.1 SUSTAINABILITY

Despite increased marketing campaigns, reforms to public policy and procedures, and advances in innovations, the need for adopting sustainability initiatives into the consumer lifestyle still remains a pressing issue (Barr, Gilg, & Shaw, 2011; Huang & Rust, 2011). The concept of sustainability gets its origins within the context of global development and environmental management, generally defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, in Chabowski, Mena, & Gonzalez-Padron, 2011, p. 55). Today, sustainability also encompasses social and economic development through universal responsibility (Brown, Hanson, Liverman, & Merideth Jr., 1987; Huang & Rust, 2011; Vlek & Steg, 2007). Due to its multidimensional nature and broad scope, sustainability can be difficult to define. Research on sustainability has been approached from both the natural and social science disciplines.

#### 1.1.2 CONSUMERS, SUSTAINABILITY, AND ENVIRONMENTAL CONSCIOUSNESS

Within the social sciences, consumer behavior and psychology as it relates to the environment and sustainability is a well-researched topic (Brown et al., 1987; Chabowski et al., 2011; Oskamp, 1995; Pickett, Kangun, & Grove, 1993). The importance of

1

environmental sustainability and conservation efforts amongst consumers has been a topic of discussion for policy makers and marketers alike since at least the 1970s (Althoff & Greig, 1977; Buttel & Flinn, 1974; Chabowski et al., 2011; McKenzie-Mohr & Oskamp, 1995; Pickett et al., 1993). Despite myriad intervention and marketing strategies and countless amounts of interdisciplinary research examining environmental psychology and behavior, getting consumers to adopt pro-environmental and sustainability initiatives on a widespread basis has yet to be achieved. Though previous research has helped to profile the pro-environmental or "green" consumer and identify the characteristics or antecedents of pro-environmental behavior, obstacles—both emergent and prolonged—continue to prevent the universal acceptance of sustainable practices into the consumer lifestyle (Huang & Rust, 2011; Nie & Zepeda, 2011; Verain, Bartels, Dagevos, Sijtsema, Onwezen, & Antonides, 2012).

Individuals' perceptions of environmental issues and sustainable practices vary considerably, as some believe individual action has no effect on others or the environment (Bishop & Barber, 2015; Ellen, Wiener, & Cobb-Walgren, 1991), or that some problems, such as climate change, do not exist in the first place (Krauss, 2014). These attitudes work to diminish the urgency of pursuing sustainability initiatives and can hinder individual involvement with sustainable practices. Within the Unites States, the concept of sustainability, "going green," and environmentalism, are often associated with various political issues and ideologies, and it is evident that people clearly have mixed feelings and understandings of the subject matter (Barr et al., 2011).

A construct that has been used in research as a determinant or antecedent to pro-environmental behaviors is called environmental consciousness. Environmental

2

consciousness can be considered an aggregation of concepts that incorporates an individuals' level of environmental knowledge, behavioral intentions, personal values, beliefs, and attitudes, combined with emotional involvement and concern for the environment (Huang, Lin, Lai, & Lin, 2014; Kollmuss & Agyeman, 2002). The concept of environmental consciousness has often been combined or overlapped with the attitudinal measure of environmental concern (Lin & Chang, 2012; Nie & Zepeda, 2011; Tanner & Wolfing Kast, 2003).

While environmental consciousness may be a determinant of pro-environmental behavior, the barriers to sustainable behavior are numerous, and are both controllable and uncontrollable. They can generally be attributed to individual motivation and the practical complexity of what constitutes sustainable behavior. As Moisander (2007, p.404) specifies: "environmentally responsible behaviour usually involves difficult motivational conflicts, arising from the fundamental incompatibility of environmental protection-related collective goals and individual consumers' personal or self-interested benefits, [and] there are usually several external constraints to green consumerism, arising from the cultural, infrastructural, political and economic circumstances in the markets." Shrum, Lowrey, and McCarty (1994) suggest the barrier to the widespread adoption of one sustainable behavior—recycling—is a marketing problem, whereby recycling is the product for sale and the problem occurs in marketing this product to the general public or consumers. Their results showed the two largest factors inhibiting recycling were cost and perceived inconvenience, as well as a general lack of knowledge on the subject. Other studies have found perceived inconvenience and the notion that engaging in sustainability practices takes more time and effort as barriers as well (Barr et al., 2011;

3

Tanner & Wölfing Kast, 2003). Consumers' perceptions that green products can lack in performance or quality also substantiates a significant portion of the barriers to adopting and purchasing environmentally sustainable practices and products (Egbue & Long, 2012; Pickett-Baker & Ozaki, 2008; Wiedmann, Hennigs, Pankalla, Kassubek, & Seegebarth, 2011).

### 1.1.3 SUSTAINABILITY IN FOODSERVICE

Throughout the research there has been an underlying urgency for the need to adopt sustainable behavior on a widespread basis. Though the need for more sustainable practices in the food system has been a topic of serious discussion since the early 1990's (Berry, 2009; Pollan, 1991), the urgency in the call for sustainability practices in hospitality and foodservice is a more recent development (Peregrin, 2011; Sloan, Legrand, & Chen, 2013). In the years since its development, hospitality research on foodservice and sustainability has varied, and most often approaches the subject from either an operational perspective—mostly looking at implementation strategies, assessing the perspectives of management, and standards and guidelines (Baldwin, Wilberforce, & Kapur, 2011; Cavagnaro & Gehrels, 2009; Choi & Parsa, 2006; Chou, Chen, & Wang, 2012; Kasim & Ismail, 2012; Moreo, Demicco, & Xiong, 2009; Peregrin, 2011; Sharma, Gregoire, & Strohbehn, 2009; Sharma, Moon, & Strohbehn, 2009)—or a consumer perspective—assessing demands, perceptions, preferences, attitudes, intentions, or behaviors regarding sustainability and green practices (DiPietro, Cao, & Partlow, 2013; DiPietro, Gregory, & Jackson, 2013;  DiPietro & Gregory, 2012; Dutta, Umashankar, Choi, & Parsa, 2008; Hu, Parsa, & Self, 2010; Jang, Kim, & Bonn, 2011; Kim, Njite, & Hancer, 2013; Myung, McClaren, & Li, 2012; Prud'homme & Raymond, 2013; Schubert,

4

Kandampully, Solnet, & Kralj, 2010). In the hospitality literature specifically, the research findings regarding sustainability in foodservice operations, and the theories and methods used, have varied substantially over the last ten years. Interestingly, within the academic research topics and themes, the specific term "sustainability" is used rather infrequently, and really only emerges around 2009 (Cavagnaro & Gehrels, 2009; Iaquinto, 2015).

Despite plenty of research focused on increasing sustainability initiatives throughout the foodservice industry, as well as advances in technology, innovations in implementation, and increased marketing efforts, the need for increased participation still exists. Sustainability in foodservice remains an urgent need. For instance, with unprecedented drought plaguing California, America's largest agricultural state and the world's ninth-largest agricultural economy, the cost of food—some that is essential to the foodservice industry such as beef, milk, chicken, and eggs—will likely be significantly impacted (Bjerga, 2014). Global climate change will continue to affect significant fluctuations in the food system, including increased costs and decreased availability of certain products, and the foodservice industry will have to be prepared to embrace sustainable alternatives and adapt to the changing environment (Environmental Protection Agency [EPA], 2015).

The industry does not bear the responsibility alone, as real sustainability can only be achieved through the collective effort of both consumers and foodservice industry practitioners. In addition to the need for further innovations from a foodservice operations perspective, it is also essential to have a better understanding of the variables that affect the individuals who may engage in environmentally responsible behavior

5

(McKenzie-Mohr, Nemiroff, Beers, & Desmarais, 1995). Though research on consumers' intentions and attitudes towards sustainability initiatives has shed important light on the subject, there is a more pressing need for research focused on increasing sustainable behavior and enacting behavioral change (Barr et al., 2011).

In recognition of increasing consumer demand and acknowledging its own environmental, economic, and social impact, the foodservice industry has begun incorporating more sustainability initiatives into its operations (Choi & Parsa, 2006; National Restaurant Association [NRA], 2013a, 2013b; Peregrin, 2011). However, several barriers still exist preventing the widespread acceptance of sustainability practices into foodservice operations. One challenge is communicating the use of sustainable practices, which can be difficult for foodservice operators and often go unnoticed by the consumer (DiPietro & Gregory, 2012; Schubert et al., 2010). For example, if a restaurant has invested in energy efficient and waste reduction equipment and infrastructure—both costly endeavors—there are limited methods for the restaurant to effectively and subtly communicate its use of sustainability practices directly to the consumer. Often the sustainable practices that restaurant operations utilize take place in the "back-of-house," or occur out of the consumer's view.

Another common issue that foodservice operators face when deciding whether or not to adopt sustainable practices is getting consumers to act in accordance with their demands and beliefs, and support sustainability initiatives when they are available (Barr et al., 2011; Bishop & Barber, 2015). Though there has been substantial research on the factors and variables influencing pro-environmental motivations, attitudes, beliefs, values, and behavioral intentions, there is still a significant gap in the research on the

6

potential disconnect between pro-environmental attitudes and their concordant, supporting behaviors (Barber, Bishop, & Gruen, 2014). This gap has been acknowledged in recent research on pro-environmental behavior, and is referred to as the "attitude-behavior gap," or the psychological phenomenon whereby an individual's attitudes and intentions to act are not materialized into subsequent behavior (Barber et al., 2014; Kollmuss & Agyeman, 2002; Vermeir & Verbeke, 2006). Additionally, because of the common use of behavioral intentions to predict behaviors, there is generally very little research that measures actual consumer behavior in relation to these supporting intentions (Armitage & Conner, 2001; Barber et al., 2014; Lynn & Lynn, 2003).

### 1.1.4 SUSTAINABLE RESTAURANT PRACTICE: LOCAL FOOD

One sustainable restaurant practice that is both gaining traction within the industry for its relative low-cost and ease of implementation, and is in high demand amongst consumers, is the use of local food (Darby, Batte, Ernst, & Roe, 2008; NRA, 2014a, 2014b; Schubert et al., 2010).When compared to other sustainable restaurant practices, such as composting or investing in new equipment, which can require substantial upfront costs, sourcing local food products can be more cost effective and easier to communicate to the consumer (Inwood, Sharp, Moore, & Stinner, 2009; Sharma et al., 2009). However, it should be noted that sourcing local food products can be difficult for many operations and barriers to local sourcing do exist. For example, operations in different geographical locations may not be able to source locally because of seasonality and lack of produce availability, or insufficient local supply to meet the demands of large-scale or chain operations.

7

Having a better understanding of how or if consumers value local food and other sustainable practices, therefore, is an increasing priority for foodservice operators. With a better understanding of consumers' actual behaviors and attitudes towards sustainable practices and the use of local foods in the foodservice industry, foodservice practitioners can employ marketing and operational strategies better focused to meet consumer demands and increase interaction. This study seeks to add to the body of knowledge and narrow the gap in understanding consumer behavior as it relates to sustainability in foodservice and the use of local food, and provide the foodservice industry with important information to aid in the decision to engage in sustainable restaurant practices.

1.1.5 RESTAURANT INDUSTRY SEGMENTS

The current study used an independent, upscale casual restaurant for the test site for the quasi-experimental research. The restaurant industry is comprised of many segments that differ from one another in many ways, such as by their type of service, menu characteristics, and operational features (Jones & Lockwood, 1998; Muller & Woods, 1995; Powers, 1985). In terms of ownership and operations classification, restaurants usually fall into one of two categories: either a chain or franchise, or independently owned and operated.

An independent restaurant was chosen for the current study for multiple reasons. Independent operations naturally have more managerial autonomy compared to chain or franchised operations, which usually function within a corporate structure and tend to be more regulated. Because of this relative freedom from centralized procedures, introducing changes into operations (such as purchasing and pricing methods) can be more feasible for independent restaurants compared with chain restaurants. This also

8

makes an independent restaurant more conducive to experimental treatments, especially involving manipulations to the menu. Therefore, implementing sustainability practices into operations can be an easier process for independent restaurants than chain or franchised restaurants.

Independent restaurants are also able to set trends that are sometimes later adopted by chain restaurants and become normalized throughout the industry (Massa, 2014; Nation's Restaurant News [NRN], 2015). Given its influence on the restaurant industry as a whole, and as a leader in innovation and industry trends, the independent restaurant segment is an important avenue to explore the integration of sustainability initiatives.

An upscale casual restaurant (as opposed to quick-service, casual, or fine dining) was chosen because the typical upscale casual restaurant consumer shares many of the same demographic characteristics as the environmentally conscious consumer. Research has shown that more environmentally conscious individuals typically have a higher level of education and income, and are the people who generally favor and support sustainability initiatives in restaurants (Hu, Parsa, & Self, 2010; Laroche et al., 2001). Additionally, the research on sustainable practices in an upscale casual setting, from both an operations and consumer perspective, is largely unexplored (DiPietro, Yao, & Partlow, 2013).

The next section describes the purpose of the current study along with the aims, objectives, and specific research questions that guide the research. The assumptions for the study will then be addressed, along with the limitations and delimitations of the study,

and the definitions of frequently used terms. The chapter ends with a summary re-emphasizing the need for the current study.

## 1.2 AIMS, OBJECTIVES, AND RESEARCH QUESTIONS

The overall purpose of this study is to investigate if an individual's personal level of environmental consciousness (an assemblage of attitudes, values, beliefs, and intentions regarding pro-environmental and sustainable practices) is actualized into concordant purchase behavior; And to determine if marketing the use of a single sustainable practice—specifically the use of local food on a menu—can influence a consumer's purchase behavior and their perceptions of restaurant image in an independent, upscale casual restaurant setting.

In order to aid practitioners with the decision whether to engage in sustainability initiatives or not, in this case the use of local food, the first goal of this study was to determine if a gap exists between consumers' attitudes, values, and behavioral intentions towards local food and their resulting purchase behavior in an upscale casual restaurant setting. Additionally, this study seeks to identify the strongest variable antecedents leading to the purchase of a local food item off the menu. Information from the current study will help foodservice operators create operational and marketing strategies that are more focused on increasing consumer purchase behavior as it relates to local and sustainable food. The second objective was to determine if an intervention strategy, specifically the use of an informational cue via the restaurant's daily special menu, could affect purchase behaviors in an upscale casual foodservice setting. This study used a well-established restaurant marketing tool—the menu—to empirically test if consumers' perceptions of menu information significantly influences their purchase behavior and perception of restaurant image.

10

To guide the research, this study addressed the following research questions related to consumer attitudes and behaviors regarding local food in an upscale casual restaurant setting, and examined if providing local food information on the menu could influence consumers' purchase outcome and perceptions of a restaurant's image:

1) Does environmental consciousness have an effect on consumers' purchase behaviors and perceptions of restaurant image in an upscale casual restaurant setting?

2) Does the perception of menu information have an effect on consumers' purchase behaviors and perceptions of restaurant image in an upscale casual restaurant setting?

3) Can the type of menu information, specifically the use of local food wordage and imagery, influence consumers' purchase behaviors and perceptions of restaurant image?

4) How are demographic variables, specifically gender, education, and income level related to purchase behavior in an upscale casual restaurant setting?

1.3 ASSUMPTIONS FOR THE STUDY

A major assumption that needs to be addressed is the complexity that involves consumers' dining preferences and motivations to eat away from the home. The process of consuming food is uniquely dynamic, and is unlike any other commercial product in that humans require food to survive. However, the choices involved in eating, especially eating away from home, often include reasons far beyond simple satiation (Mintz & Du Bois, 2002). People choose a dining location for several reasons, including location and convenience, price point, cuisine type, and atmosphere. Additionally, people make their decisions on where and what to eat because of brand loyalty, consistency of taste, as an

11

expression of identity, and even to demonstrate social and cultural capital (Mintz & Du Bois, 2002). Consumption behaviors are largely personal, and patterns specific to populations are difficult to pinpoint. In this study, it is assumed that the participants in the study are choosing to dine out for a variety of reasons, of which many cannot be entirely controlled for.

1.4 LIMITATIONS AND DELIMITATIONS OF THE STUDY

This study has multiple limitations that need to be addressed. One limitation to this study is its lack of ability to be generalized across restaurant segments. Since the study takes place only in an independent, upscale casual restaurant setting, and each restaurant segment and its consumer base vary considerably, the findings cannot be generalized to all restaurant customers. Additionally, the geographic location of the sample also limits blanket conclusions on the greater dining population.

Another limitation is that there are a number of factors affecting consumers' purchase behaviors and perceptions of a restaurant's image that cannot be controlled for. For example, weather can play a role in determining food choice (i.e. a soup or chowder might not be the most popular dish when it is hot and humid outside). Personal and contextual factors, such as someone's mood or current economic situation might also factor into a purchase decision and cannot be controlled for.

Also, because this study took place in an experimental setting, certain factors within the test-site were uncontrollable. For instance, there were fluctuations in the availability of certain ingredients on the menu, thus changing the components of the dish which could have affected consumers' purchase outcome. Other uncontrollable situational variables such as the wait-staff's interaction with the guest or other

12

servicescape factors could have also influenced purchase decision or the overall experience.

Another limitation to the current study is the potential for response bias. Response bias is generally defined as a condition or factor that takes place during the response process of survey-based research, affecting the way responses are provided (Lavrakas, 2008). In a quantitative context, response bias can lead to a circumstance where there is a nonrandom deviation of answers from their true value, thus creating a systematic error of the measure, or a bias (Lavrakas, 2008). This bias in response can ultimately affect the validity of experimental and survey research findings (Nederhof, 1985). There several types of response bias, but the most common, and the most studied from of response bias in the social sciences is social desirability bias (Fisher & Katz, 2000; Nederhof, 1985). Social-desirability bias is the tendency of subjects to respond to survey items in such a way as to present themselves as appearing socially acceptable in order to gain the approval of others (King & Bruner, 2000). The tendency for a participant to respond in a socially desirable manner can be evoked for multiple reasons, such as the nature of the experimental or test setting, the motives of the individual participant (e.g., approval from others, guilt, self-gratification), or the participants expectations regarding the evaluative consequences of their behavior (King & Bruner, 2000).

This study also has delimitations, which are self-imposed restrictions or boundaries set in place for the study in order to limit the scope of the research (Leedy & Ormond, 2010). The first delimitation of the current study is the use of an independent restaurant in a single restaurant segment, upscale casual, to examine consumers' purchase behaviors and perceptions of a restaurant's image. As will be discussed in more depth in

the literature review, the restaurant and foodservice industry is comprised of multiple segments, independent and chain, each with its own management and operational differences, unique characteristics, and varying consumer needs and expectations. In addition to the difficulty in getting multiple restaurants across segments to participate in a collaborative research endeavor, the foodservice industry also has so many components that each segment cannot be examined simultaneously. In order to narrow the scope of the research and to increase the ability to generalize the findings, the current study was delimited to focus on a single segment.

Another delimitation of the study was the specific selection of the literature from various fields and disciplines that was used to guide the current study. Literature on consumer behavior, foodservice, and sustainability ranges widely and can be approached from many disciplines. This study has set a delimitation for the supporting literature to focus particularly on hospitality, environmental psychology, and consumer behavior research to inform and guide the research herein.

The last delimitation to the current study was the use of an experimental, quantitative-based research methodology for data collection. The relationships under examination in the current study could be investigated using alternative, qualitative-based research methods, such as in-depth interviews, focus groups, or participant observation (Creswell, 2014). But, as the intentions of the current study were to measure the relationships between multiple latent variable constructs, and to make inferences about a segment of the dining population, a quantitative approach was taken (Creswell, 2014).

14

The last section of this chapter defines the primary terms that are found throughout the study. The chapter concludes with a comprehensive summary of the introduction to the current study.

## 1.5 DEFINITION OF TERMS

The following terms are defined for use in this study:

1) *Foodservice*: any operation or enterprise that prepares and serves food directly for human consumption away from the home in a retail setting. There are several classifications for the types of foodservice operations, and vary primarily by service and product type (Barrows & Vieira, Jr., 2013).

2) *Local food*: The most common definition for local food, and the one used in the current study, is an agricultural food product that is produced less than 400 miles from the point of consumption, or produced and consumed within the same state (Martinez et al., 2010).

3) *Environmental consciousness*: a mindset or disposition relating to sustainable and pro-environmental acts and issues. Environmental consciousness is defined in the current study as a collection or amalgamation of personal attitudes, values, beliefs and norms, relating to environmentalism and sustainability, combined with knowledge, awareness, and concern regarding the subject (Huang, Lin, Lai, & Lin, 2014; Kolmuss & Agyeman, 2002).

4) *Upscale casual restaurant*: a specific dining segment within the restaurant industry that exists above the casual dining restaurant segment (which can have table or counter service, focuses more on value relating to price and portion size, and offers a comfortable atmosphere) and below the upscale or fine-dining segment (which focuses more on style and ambiance, higher and more personal

15

levels of service, and offers an experiential component to dining out; also has higher check avergages) (Muller & Woods, 1994). Upscale casual restaurants typically offer a better price value for a more diverse menu mix, has a more personalized service standard, check averages in the $25-35 prices range, and whose customer base has higher levels of expectations when dining out (DiPietro & Gregory, 2012).

5) *Sustainability*: Though most often associated with and defined in an environmental context (EPA, 2015b), the current study employs the three-pillar approach to define sustainability, considering it a synergistic movement of collective behavior that encompasses environmental responsibility, economic responsibility, and social responsibility (Eichler, 1999).

6) *Foodservice sustainability*: In the foodservice industry, sustainability and sustainability initiatives can be defined as achieving a behavior that is "capable of being maintained over the long term, and meeting the needs of the present without compromising the ability of future generations to meet their needs. To maintain the food system, the raw materials (inputs) for foods and natural resources used for food transformation and distribution must be conserved, not depleted or degraded" (Harmon & Gerald, 2007, p.1033).

1.6 CHAPTER SUMMARY

Adopting sustainability initiatives has become a pressing issue, both on a global level and within the context of the foodservice industry. Though several challenges and barriers remain to widespread adoption, one of the most critical issues practitioners currently face is getting consumers to act in accordance with their pro-environmental

16

attitudes and demands. One sustainable restaurant practice that has significantly increased in demand amongst consumers is the use of local foods on the menu (NRA, 2014). The purpose of this research is to test how putting local food descriptions on a menu can affect purchase behavior, and if environmental consciousness can influence perceptions of restaurant image and the purchase of a local food menu item off the daily special menu at an independent, upscale casual restaurant. As this first chapter set the tone for the research and introduced the topic of study and the accompanying aims, objectives, and research questions, the following chapter will now review the literature used to guide this study and the underlying theoretical frameworks guiding this research.

# CHAPTER 2

## LITERATURE REVIEW

The following chapter reviews the relevant literature, discusses the variables under examination in the current study, the underlying theoretical frameworks guiding the research, and the methodology employed in this study. The literature review consists of three parts. The first section reviews the two primary topics underlying this particular research, specifically foodservice and sustainability. A discussion on the breadth and importance of the foodservice industry within the United States, along with a description of the upscale casual restaurant segment under focus in the current study, will be followed by a review and definition of sustainability and how sustainability initiatives are currently being practiced within the foodservice industry. The second part of the literature review focuses on the theoretical frameworks and underpinnings guiding the current study. The third section is a review of the dependent and independent variable concepts and constructs that comprise the proposed conceptual model and the relationships between those variables.

### 2.1 FOODSERVICE OPERATIONS

The foodservice industry has a tremendous impact on the economy, society, and the environment. Defined as an enterprise engaged in the provision of meals outside of the home, the foodservice industry encompasses a wide array of practices and segments, ranging from catering, hotel restaurants, and pubs, to concessions and cafeterias in schools, hospitals, military installations, convention centers, and sporting arenas

18

(Rodgers, 2011). Consumption of food prepared away from home has increased significantly over the last forty years and continues to play a prominent role in the American diet (United States Department of Agriculture [USDA] Economic Research Service [ERS], 2013). Nearly half (47%) of every consumer dollar spent on food in the United States is spent at restaurants, almost double what it was fifty years ago (NRA, 2014, 2015). With over a million units currently operating, restaurants are the largest and one of most apparent of the foodservice segments.

Within the United States, the restaurant industry has become an economic powerhouse. According to the National Restaurant Association (NRA), a leader in industry-related metrics, trends research, and operational/consumer data, the industry posted sales of more than $700 billion in 2014, approximately 4% of U.S. gross domestic product, and the industry forecasted to exceed $850 billion in annual sales by 2020 (NRA, 2015). Out of all restaurant operations nationwide, including commercial and noncommercial eateries and military food services, full-service restaurants received the highest amount of sales, followed closely by quick-service restaurants (NRA, 2014). Restaurants are the nations' second largest private-sector employer, comprised of more than 14 million workers—about 10% of the total U.S. workforce, outpacing overall employment in the United States (NRA, 2013-2014).

The restaurant industry also has a significant social impact. Beyond the number of individuals employed in a foodservice operation, the industry greatly influences and affects society and the consumer. In addition to satisfying the basic need of satiation, restaurants also meet the increasing needs of the consumer who seeks an experience along with their consumption (Holbrook & Hirschman, 1982; Pine & Gilmore, 1998).

19

Almost 90% of consumers say they enjoy going out to restaurants, with almost 40% saying it is an essential part of their lifestyle (NRA, 2014). Restaurants and foodservice also have an influence on society and culture. Popular culture has seen a rise of the celebrity chef and the prevalence of kitchen-related, reality-based television shows can be seen across media. And restaurants and food-related culture can play an important role in developing regional identity and making it a unique destination for tourism (Kivela & Crotts, 2006; Long, 2004; Mak, Lumbers, & Eves, 2012). Not only is food important to the search for personal identity, especially thorough the exploration of tradition and heritage (Gyimothy & Mykletun, 2009; Hjalager & Richards, 2002; Mak, Lumbers, Eves, & Chang, 2012), but food choice is also important for expressing and defining regional and national identity (Hall, Sharples, Mitchell, Macionis, & Cambourne, 2003)—especially in the context of increasing globalization (Hughes, 1995; Mak, et al., 2012). Food consumption goes beyond the simple act of serving a biological need; it helps to mark boundaries between social classes, geographic regions, nations, cultures, genders, lifestyles, and traditions (Liu & Lin, 2009; Lupton, 2005).

The relationship between food consumption and society has been examined across disciplines, ranging from anthropology, sociology, marketing, history, and hospitality. But there has been increasing attention paid to the effects of dining on consumers' personal health, specifically relating to fast food consumption (Jeffery & French, 1998; Swartz, Braxton, & Viera, 2011; USDA ERS, 2013). Obesity rates, heart disease, high blood pressure, and type-II diabetes, continue to rise amongst American adults and children. With nearly 33% of all adults and 17% of children identified as clinically obese, awareness and concern over public health and physical well-being has grown

20

considerably (Flegal, Carroll, Ogden, & Curtin, 2010). Though several internal and external factors contribute to the onset and severity of these disorders (e.g. genetics or lack of proper exercise), much of the cause can be attributed to diet, especially the consumption of processed foods high in calories, sugar, fat, and salt—all of which prevail on the menus of fast food restaurants (Paeratakul, Ferdinand, Champagne, Ryan, & Bray, 2003; Rosenheck, 2008).

Lastly, one of the largest and most expansive effects of the foodservice industry is its substantial impact on the environment (Harmon & Gerald, 2007; Peregrin, 2011). First, restaurants and foodservice operations generate a tremendous amount of waste (Hall, Guo, Dore, & Chow, 2009). Within kitchens and production facilities, pre-consumer waste can include meat and vegetable scraps; expired, excess, or contaminated foods; and packing materials. To give an idea of volume, a single, large-scale university foodservice operation prepares and serves thousands of meals per day, producing several tons of pre-consumer waste per week (Sarjahani, Serrano & Johnson, 2009). There is also a significant amount of post-consumer waste resulting after the production and service of food, especially in regards to over-sized portioning and subsequent plate-waste (Sarjahani et al., 2009).

Secondly, foodservice operations use a substantial amount of energy and water. The amount of natural gas and electricity consumed in a foodservice operations is more than twice the amount consumed by other activities in a given building (Harmon & Gerald, 2007). In addition to using energy for food preparation and service, foodservice operations also expend energy on refrigeration, ventilation, and storage (Peregrin, 2011).

21

Water use in foodservice operations is also sizable, as it is consumed in large quantity for cooking/food production, dishwashing and cleaning, landscaping, and drinking.

Lastly, one of the most environmentally detrimental effects of the foodservice industry is the production and distribution of food needed to support operations (Harmon & Gerald, 2007; Maloni & Brown, 2006). Few other human acts have more impact on the environment than the consumption and production of food (Berry, 1991). In addition to the vast amounts of energy and water required for agricultural production (including fertilization, planting, irrigation, and harvesting), many of the products and practices require substantial energy for processing, storing, packaging, and distribution (Smith, 2008). Without the proper and potentially expensive conservation and management measures in place, large-scale agriculture degrades top-soil quality and aids erosion, threatens biodiversity, outputs food waste, and generates a tremendous volume of greenhouse gases, all of which cause significant harm to the environment (Harmon & Gerald, 2007).

In fact, food consumption has such a strong influence on the environment that in the last forty years, some food sources have even been nearly eaten out of existence. For instance, a common perception exists that marine food species are abundant and limitless (Ellis, 2003; Grasso, 2008; Rozwadowski, 2012), when in reality nearly 75% of major fisheries—especially those that supply restaurants and foodservice operations—are considered fully exploited, overexploited, or depleted. Some estimates reveal that more than 90 % of the global population of large predatory fish, the types of fish that are most often prepared and served in restaurants (e.g. Tuna, Cod, Bass, Salmon, Swordfish), has been obliterated (Clover, 2006; Ellis, 2003; Jones, 2008).

It is because of its overall effect on the economy, society, and especially the environment, that the foodservice industry needs to consider incorporating more sustainable practices into its operations. Ultimately, undertaking a strategy that focuses on sustainability—or practicing environmental, social, and economic responsibility—can work to mitigate negative consequences for both humankind and the natural environment. However, because each segment of the foodservice industry varies considerably by its scale, operations, and consumer base, how or whether a foodservice operation can adopt sustainability initiatives can also differ. For example, where a high-volume, nationally branded, quick-service restaurant chain might not be able to access or procure certain sustainable ingredients that a smaller, independent restaurant could, it might be more capable of mandating or installing energy-efficient equipment or using environmentally-safe disposable wares. Additionally, the decision as to how or if to pass along any of the possible costs associated with adopting sustainable practices to the consumer also varies by restaurant segment. The following section reviews the different restaurant segments that comprise most of the restaurant industry, along with a discussion on why the upscale casual segment and specifically an independent upscale casual restaurant was chosen for this particular study.

## 2.2 UPSCALE CASUAL RESTAURANT SEGMENT

The restaurant industry can be categorized into multiple segments that continue to change as new service concepts emerge (DiPietro & Gregory, 2012; Dziadkowiec & Rood, 2015; Muller & Woods, 1994; Tillotson, 2003). Muller and Woods (1994) took one of the first steps in expanding restaurant typology and describing the most prominent segments. The segments were classified into the following types: Quick-Service restaurants (QSR), characterized by low price, counter service, speed and time savings,

23

narrow menu offerings, and consistency; Casual or Midscale, which offers more menu-mix and variety, better value in terms of price and portion, comfortability, and table or counter service; Upscale Casual or Moderate Upscale, which has a more fashionable appeal to the consumer, better ambiance than QSR or midscale, and offers more flexibility to different consumer groups; Upscale or Fine-Dining, which is more sophisticated than upscale casual in that it has increased style and ambience, higher quality and more personalized service, and presents more of a dining experience to the consumer; and Business Dining, which specializes in unique locations that caters to businesspeople, experiences little menu fatigue (or consumers' boredom with a menu item), offers price and value, and easy purchase decisions (Muller & Woods, 1994).

Multiple studies have examined the differences in restaurant segments specifically and take either an operational/managerial perspective or look at how consumers act towards and perceive each segment differently. For example, using an importance-performance analysis, Ha and Jang (2012) looked at how the type of restaurant (specifically quick-service, casual dining, and fine dining) influenced the way consumers perceived value. The objective of the study was to identify the key elements that influence a consumer's valuation of a dining experience, and how or if the valuation varied across restaurant type. Ultimately it was found that efforts made by fine dining establishments to help placate the customer's curiosity about food and desire for novelty led to higher perceived value of the experience, whereas quick-service customers did not find a unique dining experience important in their perception of value.

DiPietro, Cao, and Partlow (2013) described the upscale casual segment as being trendier with a newer and fresher look than competitors and as a notch below the Fine

Dining segment—which offers the most sophisticated level of food quality and service of all restaurant segments. Fine dining is also the most expensive of all restaurant segments, with check averages ranging from $35-$50 per person. Upscale casual restaurants typically have a diverse menu, with larger and more variety in menu offerings and usually offer full alcohol service. They also have a more personalized service standard and a higher level of guest expectations (DiPietro & Gregory, 2012). Check averages for upscale casual restaurants tend to be in the $25-$35 price range (DiPietro & Gregory, 2012).

A restaurant in the upscale casual segment was selected for the current study for several reasons. First, because of their relative independence from centralized corporate operations, as is often the case with franchise, national chain, quick-service, and casual restaurants, upscale casual restaurants tend to be more autonomous (DiPietro et al., 2013). This autonomy provides for more operational flexibility and freedom from corporate mandates, and allows for greater ability to change internal components of the operations such as purchasing and sourcing ingredients, and dish preparation and menu design. Because of its flexibility and relative autonomy from corporate restrictions, an upscale casual restaurant was a more conducive environment to conduct an experiment that involved altering the menu. In addition to more variety, upscale casual menus typically rotate and are not static, something consumers expect. Thus, compared to a restaurant operation that uses a static menu, experimental changes are less noticeable to the consumer.

An upscale casual restaurant was also chosen because the demographic characteristics of its typical consumer are very similar with that of the typical consumers

who are more likely to support and engage in sustainable restaurant practices (DiPietro & Gregory, 2012; Hu et al., 2010). The upscale casual restaurant consumer is generally older, middle to upper-class with disposable income, college-educated, and they choose to dine out frequently (DiPietro & Gregory, 2012; Yang, Kimes, & Sessarego, 2009). Previous research on restaurant consumers' perceptions of  green restaurant practices has shown that individuals who are more educated and have a higher income level also have higher perceptions of green restaurant practices and are more willing to pay for the them (DiPietro & Gregory, 2012; DiPietro et al., 2013; Dutta et al., 2008; Schubert et al., 2010).

Now that the importance of the foodservice industry and the types of restaurant segments that comprise the industry have been discussed, along with a review of the upscale casual restaurant segment in particular, the following sections address the concept of sustainability, sustainable practices in foodservice, and the use of local food as a sustainable practice within the foodservice industry.

2.3 SUSTAINABILITY

In light of the impacts that human actions have on both the environment and other humans, and in recognition of the increasingly consequential effects of behavior, a paradigm of sustainability has become one of the most emergent topics of discussion in today's academic, political, and professional circles (Deale, Nichols, & Jacques, 2009; LaTour, 2014; Peregrin, 2011). It is a complex topic with many definitions, incorporating many, multi-faceted and dynamic components, and can be referred to in both an environmental/resource management context and in economic or business models, as well as a modus for society (Schaefer & Crane, 2005).

26

The concept of sustainability can be approached from many angles and has been examined across multiple disciplines. Within applied research, sustainability is typically approached from one of two perspectives: either a supply-side (operations) or a demand side (the consumer). Though variations in the definition exist, sustainability is universally considered a guiding principle that creates and maintains the conditions under which humans and nature can exist in productive harmony without compromising the needs of current and future generations (EPA, 2015b). In general, sustainability can be boiled down to three basic components of mutual and individual moral responsibility: economic, social, and environmental/ecological (Becker & Jahn, 1999; Choi & Parsa, 2006; Maloni & Brown, 2006; Sloan, Legrand, & Chen, 2013). Sustainability can be considered the area in which these three components overlap, forming a synergistic model for social and economic equality that maintains health, safety, and economic viability while simultaneously conserving resources and minimizing environmental impact (Eichler, 1999) (see Figure 2.1). This concept that encompasses the overlap between economic, social, and environmental responsibility can be referred to as the "three-pillar" model or "triad" of sustainability (Eichler, 1999; Figge, Schaltegger, & Wagner, 2002; Gibson, 2006).

Though the 'triad' or 'three-pillar' framework has been used to guide and define sustainability since its inception, the discourse on sustainability has largely taken an environmental perspective—looking at conservation, preservation, and management of natural resources and the environment (Brown, Hanson, Liverman, & Merideth, Jr., 1987; Herremans & Reid, 2002). This environmentally-oriented direction of sustainability research and education can be partly attributed to a widespread increase in concern over

27

Community

**SOCIETY**

Livability,
health and
safety

**ENVIRONMENT**

SUSTAINABILITY

Environmental
impact

Equity

Resource
conservation

**ECONOMY**

Economic viability
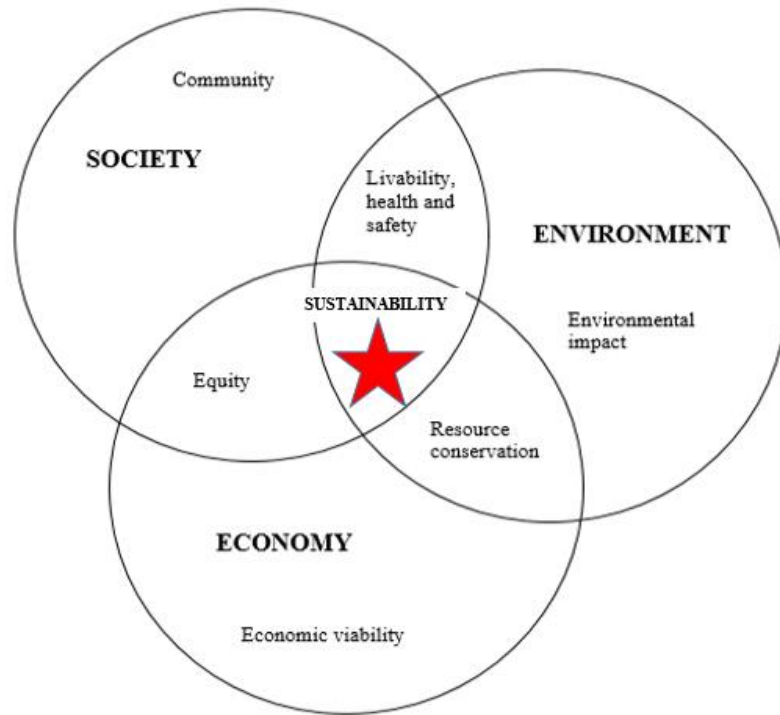
**Figure 2.1** General Model of Sustainability (Eichler, 1999, p.198)

the environment and in response to the effects of globalization, resource extraction on a

grand scale, pollution, and global climate change (Chakrabarty, 2009). Although human

influence on the environment on a global scale has been recognized since the 1800s,

some scientists are positing that we have entered a new epoch in Earth history—one that

represents a quantitative shift in the relationship between humans and the global

environment (Steffen, Grinevald, Crutzen, & McNeill, 2011).

Formally recognized as the Anthropocene, this concept suggests that since the

industrial revolution began, the intensification of globalization (and specifically the

exponential use of fossil fuels) over the last forty years has resulted in a circumstance

where "(i) the Earth is now moving out of its current geological epoch, called the

Holocene and (ii) that human activity is largely responsible for this exit from the

28

Holocene, that is, that humankind has become a global geological force in its own right" (Steffen et al., 2011, p.843). Surmounting empirical evidence indicates there is no longer an environment or climate on Earth devoid of human interaction or influence and the driving force behind the factors of global change is rooted firmly in collective human behavior, particularly in social, political, and economic spheres (Zalasiewicz, Williams, Haywood, & Ellis, 2011). It is from this relationship between social and economic forces and their subsequent effects on the natural environment that the concept of sustainability originated and where the three-pillar model gets its foundations.

One industry where the topic of sustainability is important and holistically applicable is in the context of foodservice. In addition to playing a significant role in the economy both on macro and micro levels, the production, distribution and service of food has a major impact on the environment. But more fundamentally, human existence is contingent upon the sustained supply and distribution of food and water. Besides oxygen, food and water are the only other things that humans need to survive on a daily basis. The industry itself is also reliant on continuous, large-scale resource production and consumption, making it vulnerable to any significant environmental changes. With unpredictable weather patterns leading to droughts, rising food costs, and the subsequent fluctuation of supply in natural resources (Taylor, 2014; USDA ERS, 2014), and in acknowledgement of its own impact on the economy, society, and the environment, the foodservice industry has begun to concentrate efforts on engaging in sustainability (Harmon & Gerald, 2007; Maloni & Brown, 2006; Peregrin, 2011; Sloan et al., 2013).

Within the context of foodservice, sustainability is specified to maintaining the food system over the long term, meeting the needs of the present without compromising

29

the ability of future generations to meet their needs. In order to maintain the food system, raw materials for foods and natural resources used for food production and distribution must be conserved, not depleted or degraded (Harmon & Gerald, 2007). The production, consumption, and trade of food products have been identified as being major contributing factors to numerous environmental problems. Fostering change in the food chain, from production to trade to consumption, is just one critical step towards the achievement of sustainable development (Tanner, & Wölfing Kast, 2003). Sustainability as it relates to foodservice is discussed next, starting with how sustainability and sustainability research is approached from an operations perspective followed by the research that takes a consumer perspective.

2.4 SUSTAINABILITY IN FOODSERVICE OPERATIONS AND MANAGEMENT

Research on sustainability and foodservice has generally approached the subject from one of two perspectives—looking at the topic from an operations and management perspective, or from the perspective of the consumer. This section centers on the research that has been done regarding sustainability practices in foodservice from an operations and management perspective.

Much of the hospitality research looking at sustainability in operations and management takes place outside of the United States. However, both the methods used and the findings vary considerably. For example, Poulston and Yiu (2011) used a qualitative method to look at costs versus benefits in the service of organic food in a restaurant setting in New Zealand. They found that there was some misunderstanding amongst the restaurateurs as to the benefits of using organic food and the value that is associated with its higher premium. Iaquinto (2014) also used qualitative methods to explore sustainable practices among independently owned restaurants in Japan. The

30

author interviewed 29 restaurateurs from casual restaurants, and found that less than half implemented any type of sustainable practice into their operations. Only a handful of restaurants had begun to engage in sustainability efforts, mostly citing expense and lack of knowledge as the greatest barrier to engagement.

Kasim and Ismail (2012) found similar results in Malaysia, where the adoption of sustainability practices into restaurant operations was weak. Though aware of environmental issues, restaurant managers were reluctant to implement sustainability practices, citing that lack of consumer demand and an insufficient supply-chain would prevent any potential of success. Cavagnaro and Gehrels (2009) took a case study approach to explore the processes that accompany the implementation of sustainability practices into a hospitality operation in the Netherlands. Using a qualitative method, the authors found that getting sustainability into a restaurant's operations was more challenging than expected. Sourcing local and organic ingredients was the greatest challenge to the operators, and overall awareness of sustainability initiatives was quite low. The value of this research stream is that it provides a snapshot on how sustainability is or is not being integrated into operations across the globe, and how restaurateurs and foodservice companies are dealing with the adoption and implementation of sustainability into their operations.

Other research has sought to explore the perspective of restaurant managers, and their willingness to adopt green practices. Choi and Parsa (2006) looked at how managers perceived green restaurant practices and their willingness to pass the costs along to the consumers. It was concluded that managers perceived restaurant green practices in a favorable light, but were hesitant when it came to charging consumers more for the

31

practices. Surprisingly, within the hospitality academic literature, this is really one of the only studies that investigated implementing sustainability into restaurant operations from a management perspective in the United States. Choi and Parsa's (2006) study adds value in that it is so unique and provides an important first step from which future research can grow. With the importance of adopting sustainability practices into restaurant operations established, research will continue to aid operators in developing implementation strategies, by assessing the perspectives of management and identifying the drivers and barriers of sustainable foodservice practices.

Given the fact that restaurants and foodservice operations generate a tremendous amount of waste (Hall, Guo, Dore, & Chow, 2009), resource and environmental management strategies have also become an integral part to sustainability research in foodservice operations. Part of the initial research was meant to understand how much waste is produced from a single foodservice operation, and attempt to set benchmarks for the industry. Sarjahani et al. (2009) looked at a large-scale university foodservice operation and found there to be a considerable amount of pre-consumer waste, or the waste that is generated from food production and preparation prior to serving it to the consumer. Pre-consumer included kitchen scraps; expired, excess, or contaminated foods; and packing materials. They also found a substantial amount of post-consumer waste associated with the service of food as well. Post-consumer waste, or waste generated by consumer usage, included plate-waste, or the uneaten food on the plate, disposable service-ware like paper and plastic utensils, plates, cups, napkins and the accompanying packaging. Post-consumer waste alone yielded approximately 2 tons of waste per week (Sarjahani et al., 2009).

32

Some research has tried to establish measurement standards and guidelines for sustainable restaurant practices. For example, Moreo, Demicco, and Xion (2009) attempted to develop a sustainability scorecard to measure various elements of environmental sustainability within a foodservice operation. Using previous research on resource management, a scale was created to score varying aspects of sustainability, such as water and energy usage, as well as materials used in the build and design of the building. Baldwin, Wilberfore, and Kapur (2011) attempted to develop a sustainability standard for foodservice establishments, as did Peregrin (2011), who gave the American Dietetic Association's position on best practices for sustainability in hospitality operations. From the industry side, there are different certification agencies, like the Green Restaurant Association (2015), which gives its own criteria for establishing a sustainable restaurant.

The types of sustainable or green restaurant practices vary considerably and can depend on multiple factors, such as the size of an organization, its geographic location, or the availability of financial funds for capital investment. For example, Maloni and Brown (2006) demonstrated how sustainability initiatives could run through the food supply-chain from product sourcing to distribution, where Sloan et al. (2013) discussed what sustainability meant to the hospitality and tourism fields specifically. Harmon and Gerald (2007) and Peregrin (2011), both of the American Dietetic Association, specified multiple sustainable practices that foodservice providers could implement, ranging from the sourcing of local, organic, fair trade and non-genetically modified organisms (GMO) products, to the conservation of energy and water, the use of efficient equipment, minimization of waste, and engaging the community in sustainable efforts. Other

33

initiatives and practices included water conservation, recycling, composting, and the use of non-toxic or eco-friendly cleaning products and packaging (Peregrin, 2011).

Research on sustainability in foodservice has also approached the topic from a consumer perspective, looking at issues ranging from consumers' willingness to pay more for sustainable products and practices to how consumers' attitudes and perceptions vary by restaurant type. The following section discusses the research done in the area of sustainability in foodservice with regards to consumers' perceptions and behavioral intentions regarding green practices in restaurants.

2.5 SUSTAINABILITY IN FOODSERVICE—CONSUMERS

Several studies have sought to measure consumers' intentions and perceptions of green restaurant practices and sustainability initiatives. DiPietro, Gregory, and Jackson (2013) showed that respondents in the Midwestern United States (N=260) favored the use of green practices in a quick-service restaurant (QSR), but were not willing to pay a premium for it. Measuring responses on 5-point Likert scale (where 1 = unimportant and 5 = very important), consumers were asked to rate the level of importance of certain criteria when selecting a restaurant to eat at. Food quality (M = 4.5, SD = .916), service quality (M = 4.33, SD = .941), and price (M = 4.04, SD = .994), were identified as the most important characteristics when choosing to dine at a QSR (DiPietro et al., 2013). Green practices, specifically the restaurant's environmental record (M = 3.43, SD = 1.239), providing information on local offerings (M = 2.94, SD = 1.208), and using recycling bins (M = 2.78, SD = 1.235), were shown to be the least important characteristics of choosing to dine at a QSR (DiPietro et al., 2013). However, consumers' perceptions of restaurant green practices were positive, with most of the respondents stating they prefer to eat at a restaurant that are environmentally friendly (M = 3.26, SD =

34

1.04) and agreed that a restaurant should use local products whenever available (M = 3.79, SD = 1.123) (DiPietro et al., 2013). But in terms of willingness to pay more for green practices, respondents said they were only willing to pay up to 1% more (DiPietro et al., 2013).

Also using a sample of restaurant consumers in the Midwestern U.S., Schubert et al. (2010) used data collected from customers across five casual dining restaurants ($N$ = 455) and found that overall, customers perceived a restaurant's use of green practices to be important, and were willing to pay more for those practices in order to offset any associated costs for the restaurant. Using a 7-point Likert scale, respondents were asked to rate the level of importance regarding various restaurant green practices. Customers stated that a restaurant's efforts to reduce energy and waste (M = 5.73, SD = 1.30), the use of biodegradable or recyclable products (M = 5.72, SD = 1.35), and the sourcing of local food (M = 5.22, SD = 1.52) were the most important green practices (Schubert et al., 2010). A majority of the respondents also said they were willing to pay more for dining a green restaurant, with 30% of the individuals stating they would pay 1-5% more and 35% saying they would pay between 6-10% more.

Looking at restaurant consumers in an upscale setting, DiPietro, Cao, and Partlow (2013) found that individuals generally preferred environmentally-friendly restaurants and the use of eco-friendly products, and showed higher behavioral intentions towards green restaurants. Out of 600 respondents who completed a survey, of which 62% were female, older in age (80% were above the age of 42), and highly educated (30% had a bachelor's degree and nearly 40% had a master's degree or higher), the belief that restaurant companies should use local products on the menu whenever possible was the

highest rated item (M = 4.28, SD = .775 on a 5-point Likert scale), followed by the preference to purchase environmentally friendly products (M = 3.79, SD = .780) (DiPietro et al., 2013). Despite showing a preference for green restaurant practices and products, consumers were generally unwilling to pay more for them (DiPietro et al., 2013).

In Taiwan, Hu and colleagues (2010) looked at the relationships between consumer knowledge of green restaurant practices, eco-friendly behaviors, and overall environmental concerns, and the intention to patronize a green restaurant. Using a random intercept method of individuals at a shopping center, 393 participants completed a survey. Employing Anderson & Gerbing's (1988) two-step approach to SEM, it was determined that individuals who had more knowledge of green restaurant practices and with higher environmental concern had significantly higher intentions to visit a restaurant that employed green practices (*B*=.33, *t* =3.60, *p* <.05). Respondents who were older and had a higher income level were more likely to patronize green restaurants, and a majority were willing to pay more to visit that green restaurant (Hu et al., 2010).

In a comparative study of consumers' green practice orientation in India versus the United States, Dutta et al. (2008) concluded that consumers' attitudes and willingness to pay for green practices varied considerably between countries. Using survey data collected from customers at two comparable restaurants in each country, results showed that consumers in India (*n* = 196) valued environmentally responsible practices more than socially responsible practices, and showed a higher level of environmental consciousness compared to consumers in the United States (*n* = 200). However, despite this fact, U.S.

36

consumers were more willing to pay for green practices than Indian consumers (Dutta et al., 2008).

DiPietro & Gregory (2012) also conducted a comparative study of customer perceptions of green restaurant practices, comparing consumers from fast food restaurants to upscale casual restaurants. In order to determine if there were differences among consumers' perceptions of green in varying restaurant segments, the authors analyzed survey data taken from customers dining at a fast food restaurant chain in the Midwest and compared it to survey data taken from customers who dined at four upscale restaurants in the same geographic region. Ultimately, it was determined that consumers in the upscale restaurant perceived themselves to be more knowledgeable about green practices compared to the fast food customers, and found restaurant green practices (specifically recycling and existing environmental record) were more important characteristics/attributes to upscale customers when dining out when compared with fast foods customers. Additionally, upscale restaurant customers strongly believed that local food should be used whenever possible. Interestingly, for both sets of customers, the more they engaged in green practices at home, the more likely they were to pay more for restaurant green practices (stated intentions) and increased their intention to visit a green restaurant.

The extant research provides a very consistent and clear perspective of a majority of the dining population—across segments and geographic regions. From the research, extended from both academia and industry, it is clear that consumers favor sustainable restaurant practices, especially the use of local food (DiPietro et al., 2013; Lillywhite & Simonsen, 2014; NRA, 2013-2014; NRN, 2014a, 2014b; Schubert et al., 2010). Though

37

research on consumer perceptions and attitudes towards sustainability and green restaurant practices is essential, it is important to begin measurement of actual consumer behavior, in addition to assessing their intentions and perceptions. It becomes more pertinent to measure actual choice and purchase behavior rather than just evaluate perceptions and intentions to act.

The following section discusses the use of local food and why it is considered a sustainable behavior.

## 2.6 LOCAL FOOD

One sustainability practice that has gained significant traction among food retail and foodservice operations is the sourcing and use of local food products (Campbell, DiPietro, & Remar, 2014; NRA, 2014). It is important to note however, that just because a product is grown or raised locally does not automatically qualify it as being sustainable. Though local food is commonly considered sustainable because of its low carbon footprint and support for a local economy, there is no guarantee that just because a food is local it automatically qualifies as being sustainable. However, it is more about the agenda and ethos of the system, and the scale that makes the use of local food a sustainable practice (Sloan et al., 2013). Generally, the use of locally-sourced food in a service operation is considered a sustainable practice in that it touches upon all three aspects of sustainability: economic, social, and environmental responsibility—all of which will be discussed at length shortly. But as is the case with the term sustainability, there are several definitions and uses for the term "local" (Sharma, Gregoire, & Strohbehn, 2009).

38

Though commonly considered as being either raised/grown within 100 miles of the establishment where it is sold, or within the same state (Restaurant, Food & Beverage Market Research Handbook, 2014-2015), definitions of local food can vary by organization and enterprise. Many national and local organizations, such as the Green Restaurant Association, define local food as being within a 100-mile radius around an operation, whereas "regional" food is expanded to a 300-mile radius (Green Restaurant Association, 2012). The 2008 Food, Conservation, and Energy Act states that for a food to be considered local or regional it must not travel more than 400 miles from its origin, or can originate from the state in which it was grown (Martinez et al., 2010), which is the definition used in the current study.

The use of local food over non-local food products, which includes wine and craft beers, as well as meat, vegetables and fruit, can benefit both regional and national economies. In addition to aiding in the economic development of rural areas (Marsden, Banks, & Bristow, 2000; Martinez et al., 2010) and helping to capture tourist dollars (Cohen & Avieli, 2004; Getz, & Brown, 2006; Hall, Sharples, Mitchell, Macionis, & Cambourne, 2003; Seo, Kim, Oh, & Yun, 2013), buying locally supports local businesses and farmers in the area, bolstering economic vitality (Martinez et al., 2010; Sloan et al., 2013; Starr, Card, Benepe, Auld, Lamm, Smith, & Wilken, 2003).

Supporting local food and community food systems also has significant social benefits. While supporting local businesses can help boost a community economically, community-based food systems and the buying of local foods can also link producers and consumers together, ultimately strengthening community bonds as well as culinary traditions and culture (DeLind, 2002; Feenstra, 2002; Hinrichs, 2003; Sloan et al., 2013;

Starr et al., 2003). Consuming locally-grown food and supporting a local food system can also have health benefits. Though there is no empirical evidence to support any nutritional differences per se, local foods are fresher, minimally processed, and usually of higher quality when in season, and burn less greenhouse gases for their distribution (Martinez et al., 2010).

The reduced environmental impact from using local foods can also be substantial. Supporting local/community food systems usually involves utilizing smaller, independent farms (Starr et al., 2003). By supporting smaller farm productions, the pressure put on large-scale agriculture is greatly reduced, subsequently minimizing erosion and soil degradation, reducing mono-cropping and bolstering biodiversity, and reducing the amount of water, fertilizer, pesticides and fossil fuels that are used so heavily in large-scale agricultural practices (Broadway & Stull, 2010; Martinez et al., 2010). Also, by purchasing local foods there is a drastic reduction in carbon emissions that are released when shipping food products long distances (Sloan et al., 2013). This concept of associating environmental and social costs with the production and transportation of food is often referred to as "food miles." The more food miles a food item accrues in its journey from field to plate, the more environmental and social impact it has (Sloan et al., 2013).

As an example, consider the environmental impact of a foodservice operation in the eastern United States buying a case of apples grown in Chile because they are out of season at home. Not only are the labor and land management practices less regulated and less transparent in several export oriented economies, but the social, economic, and environmental impact associated with harvesting, packaging, storing, and shipping the

40

fruit thousands of miles with constant refrigeration is enormous (Maloni & Brown, 2006; Smith, 2008). Sourcing food locally essentially means sourcing food that is available and in season within a relatively close distance to the place it is ultimately consumed, thus limiting social and economic impact by lowering the number of food miles that the food travels to get to the end user (Sloan et al., 2013).

Within the foodservice industry, consumers have ranked a restaurant's use of locally and sustainably sourced food as one of the most preferred attributes of a restaurant (Elan, 2009; NRA 2013-2014). It is generally understood that consumers prefer locally-sourced food as it is perceived to be more fresh and of higher quality, as well as being healthier, supportive of local business, and better for the environment (NRN, 2014a). Within industry-based research on local food, much of it involves challenges to sourcing and supply-chain management, price and pricing issues, and innovation (Brooks, 2013; Deutsch, 2012; NRNa, 2014; Thorn, 2012). One emergent trend that is a direct offshoot of sourcing locally is the concept of "hyper-local." Hyper-local sourcing can refer to a restaurant that has its own garden which directly supplies produce for the menu, foraging for food in close proximity to the restaurant where it will be prepared and served, or an exclusive supply contract between a small, local farm and a restaurant (NRA, 2013b; Thorn, 2012).

There is a variety of academic research on local food and the research has been approached from different disciplines, ranging from hospitality and marketing to agribusiness and rural studies. From an agribusiness perspective Carpio & Isengildina-Massa (2009) evaluated and measured consumers' willingness to pay for state-sponsored locally-grown products. Using a randomized telephone survey, they asked respondents

41

hypothetical questions regarding their willingness to pay for various products that had characteristics or attributes of being locally grown—specifically grown in-state in this circumstance. If consumers demonstrated a preference for these hypothetical local products, they were then asked to choose a percentage for which they would be willing to pay more (0%, 5%, 10%, 20%, 30%, and 50%) compared to the same product produced out of state.

The study found that at an equal price, consumers strongly preferred the local products (produce and animal) over the out-of-state products and were willing to pay up to 5% more. However, as the price premium for local foods increased, consumers' willingness to pay for local vs. non-local declined significantly. Overall, results showed that consumers were willing to pay an average premium of 27% more for local produce and 23% more for local animal products relative to out-of-state products. Premiums for local products were influenced by socio-demographic characteristics such as age, gender, and income, as well as by perceived product quality, desire to support the local economy, and frequent patronage to local farmer's markets (Carpio & Isengildina-Massa, 2009).

Looking at packaged goods in a retail setting, Onozaka & Mcfadden (2011) used conjoint analysis to examine the effects of labelling food items with sustainable production claims such as organic, local, fair trade, and green, and location claims like country/state/region of origin on perceived value of the food items. Using data collected from a sample of grocery shoppers who participated in an online survey questionnaire, results showed that consumers differentiated some production claims to a further extent if information about production location was provided. There were no significant interaction effects between the claims of being local and organic, and there were

inconclusive results regarding consumers' willingness to pay for products labeled as organic. However, a significant amount of consumers stated they were willing to pay a premium for another type of sustainable product claim: reducing carbon footprint and associated food miles. In terms of consumer preference for locally labeled products and other items with production location claims, it was determined that consumers had a strong positive preference for locally grown products in comparison to domestically grown products, and were willing to pay a higher price premium (9% to 15% more) for locally grown products (Onozaka & Mcfadden, 2011).

In a similar study, Darby et al. (2008) also used conjoint analysis to explore two different issues of consumer demand for local produce in a retail setting: the geographical extent of what encompasses or qualifies as being "local," and how the value that consumers place on local food differs from other features that are often associated with locally produced foods—such as a farm' size or product freshness. Results showed that respondents often placed similar value on products that were produced "in-state" and "nearby," and that consumers' willingness to pay for a locally produced item was independent from the values that were associated with freshness or farm type and size. Though respondents did not really distinguish between "grown nearby" and grown in a specified state, individuals both preferred and were willing to pay up to 50% more for products that were locally grown as opposed to just grown in the United States. Results also showed a positive relationship with willingness to pay when there was a presence of a freshness guarantee and that a locally grown product was perceived independently from a product with a freshness guarantee. Overall, this research showed that consumer demand for locally produced foods is strong, and that demand for local produce is

43

independent of other characteristics or value claims often associated with locally produced foods, such as greater freshness and being supportive of independent small businesses (Darby et al., 2008).

In the context of a restaurant specifically, Sharma, Gregoire, and Strohbehn (2009) assessed the potential process and production costs an independent restaurant might incur when using locally produced food versus sourcing food products through a national supplier. Using a convenience sample of ten restaurants in the Midwestern United States, Sharma et al. (2009) used a novel application of the nonparametric, linear programming-based technique called data envelopment analysis (DEA) to measure the efficiency of restaurant units in the presence of multiple inputs and outputs. Results showed the cost differences between sourcing locally and sourcing from a national supplier were insignificant. There was no statistically significant difference in the cost of local food versus nonlocal food ingredients and the differences in delivery time between local and national suppliers was negligible (Sharma et al., 2009).

Vieregge, Scanlon, & Huss (2007) looked at how Swiss consumers reacted to the use of local food in a globally-branded, quick-service restaurant (McDonald's) and the subsequent effects of using local food as a marketing tool. Using a sample of 362 participants who were interviewed and completed a survey questionnaire, results showed that the use of local food products in a globally-branded quick-service restaurant can be an effective method for improving brand image with both local and non-local customers. Consumers appreciated and supported the use of local products, and it positively influenced their perception of the restaurant and willingness to spread positive word of mouth. However, some items and their use of local food were price sensitive, with more

than half of the respondents stating they would not pay more for a "Big Mac" if local foods were used instead of the standard non-local ingredients. But in general, the results supported McDonald's decision to use local products and the positive outcomes associated (Vieregge et al., 2007).

Whether it be in response to overwhelming consumer demands and pressures to adopt sustainable practices or in recognition of its own impact on the environment, society, and the economy, sustainability initiatives in the foodservice industry have increased significantly over the last 15-20 years (Choi & Parsa, 2006). However, the research on actual consumer behavior as it relates to supporting sustainable practices in foodservice is still developing. Now that consumers' perceptions and attitudes towards restaurant sustainability initiatives have become fairly well understood, the need to understand their actual behavior becomes more pertinent.

Research has shown that upscale casual restaurant consumers generally have high perceptions of sustainable restaurant practices in the United States (DiPietro et al., 2012; Myung et al., 2012; Namkung & Jang, 2013; Schubert et al., 2010), especially as it relates to the use of local food (Lillywhite & Simonsen, 2014; NRA, 2014, NRN 204a, 2014b), and state they are willing to pay more for these green practices (DiPietro et al., 2012; Dutta et al., 2008; Schubert et al., 2010). Given this understanding of consumer demand for local food and sustainable practices, many foodservice operations have begun to shift substantial resources to incorporating more sustainability initiatives into their operating strategies and subsequently marketing that to the consumer (NRN, 2014a, 2014b).

45

But what is less known, and an area where a paucity of research exists, is if the same consumers who are saying they favor sustainable restaurant practices and the use of local food are actually purchasing local food items in the restaurant and supporting sustainable practices via their purchase behavior. In order to ensure that this shift in operational focus is working, and determine if marketing sustainability is having a positive effect on consumer purchase behavior, research needs to look at the actual outcome of purchase behavior. The current study addresses this issue specifically.

The following section of the literature review will discuss the supporting theories framing this research, proceeded by a description of the dependent and independent variables under examination in the current study.

THEORETICAL FRAMEWORK

2.7 THE THEORY OF PLANNED BEHAVIOR AND THEORY OF REASONED ACTION

One of the most prolifically used theories that examines the relationship between attitude and behavior is the Theory of Planned Behavior (TPB) (Ajzen, 1974, 1991), which is a direct descendent of the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1974, 1975) (see Figure 2.2). The TRA suggests that before engaging in a decision, individuals consider the consequences of alternate behaviors and then choose to actually perform the behavior that is most associated with a desirable outcome (Bang, Ellinger, Hadjimarcou, & Traichal, 2000). Therefore, according to the model, behaviors are determined by a person's intention to perform that behavior, and that those intentions are derived from two factors: attitude towards the behavior in consideration, and subjective norms—which are perceived social pressures associated with that behavior

46

(Bagozzi, 1992; Bang et al., 2000). The TRA gained great acclaim for its strength in explaining attitude-behavior relationships in a variety of contexts (Bagozzi, 1992).



a. Theory of Reasoned Action



b. Theory of Planned Behavior
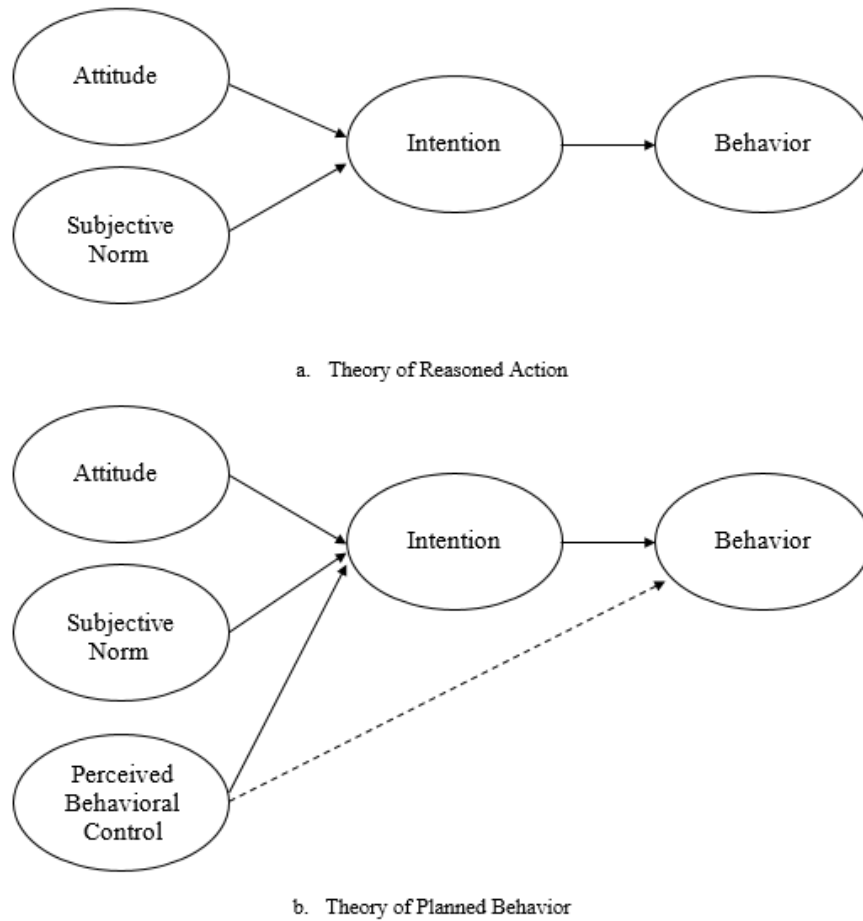
**Figure 2.2** Theory of Reasoned Action and Theory of Planned Behavior (in Bagozzi, 1992, p.179).

However, Bagozzi (1992) makes an important caveat about the TRA and explains how it adapted into the TPB:

A key assumption of the theory of reasoned action is that it addresses behaviors under volitional control, by which the authors meant the following: 'People can easily perform these behaviors if they are inclined to do so (Ajzen 1985, p, 12). [W]hen one is asked about performing a behavior that is completely under one's

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own volitional control, one typically believes that one can, and will, do whatever one intends or tries to do (Fishbein and Stasson 1990, p. 177).' In other words, a volitional behavior is an action that a person is able and intends to perform, and whose execution no factors prevent. Fishbein and Ajzen (e.g., Ajzen and Fishbein 1980) are clear in their requirement that the theory of reasoned action applies only to volitional behaviors. They state explicitly that the theory does not apply to attitudes toward objects, people, or institutions, to nonvolitional behaviors or goals, or to outcomes. (p.180)

It is because of this discrepancy in volitional behaviors that the TRA was adapted into the TPB (Ajzen, 1974, 1991), which added the construct of perceived behavioral control to the predictive model (See Figure 2.2). As Ajzen (1991, p.183) describes, "of greater psychological interest than actual control […] is the *perception* of behavioral control and its impact on intentions and actions." Perceived behavioral control can be defined as "the person's belief as to how easy or difficult performance of the behavior is likely to be" (Ajzen & Madden, 1986, p. 457 in Bagozzi, 1992, p.280). The TPB has become one the most popular and widely employed theories in behavioral research, and is used across many social science disciplines.

One of the most seminal research articles relating to environmental behavior that is modeled on the TPB is Hines, Hungerford, & Tomera's (1987) meta-analysis of 128 environmental behavior articles. The analysis identified the most recurrent and prominent factors and variables influencing environmentally responsible behavior. Their results showed cognitive variables: those pertaining to knowledge of the environment such as awareness and concern; psycho-social variables: including personality characteristics,

48

perceptions, attitudes, locus of control, economic orientation, personal responsibility and verbal commitment; demographic variables including gender, age and income; and other experimental interventions were the variables most strongly associated with pro-environmental behavior. They conclude that intention to act was merely an artifact of a number of other variables acting in conjunction with each other. However, the model falls short in explanatory power with the lack of identification of barriers and lack of depth when describing the situational factors.

Overall, the TPB and TRA has been the most applied theory used for explaining and predicting pro-environmental and sustainable behavior. But as Bagozzi (1992) notes and as discussed previously, the TPB and TRA have limitations in applicability and explanatory power in certain circumstances, and can be limited by its lack of accountability for situational and contextual variables. Though much of the environmental attitude-behavior models and theories have been grounded firmly by the TPB and TRA, in light of the potential limitations other theories and models have modified and adapted the TPB to better explain and predict sustainable behavior, and consider variables beyond attitudes.

Given its prominence in consumer behavior research and for its relative efficacy in accounting for the variance in behavior outcomes (Armitage & Conner, 2001), the TPB is used as one of the primary theoretical frameworks guiding the current study. In an upscale casual restaurant setting, variations on the measures of consumers' attitudes, subjective norms, and perceived behavioral control will be used to predict and explain purchase behavior—specifically the purchase of a local food item from the daily special menu. The following section reviews some of the other attitude-behavior theories that are

often applied when examining sustainable and pro-environmental behaviors, and are used as part of the theoretical frameworks guiding the current study.

2.8 ENVIRONMENTAL ATTITUDE-BEHAVIOR THEORIES

When it comes to conceptual frameworks in the study of environmental psychology and behavior, social science has generally taken two very distinct approaches—one where behavior is seen as a function of processes internal to the individual; or another where behavior is a function of external factors—and rarely has it combined these two approaches into a comprehensive model of behavior change (Guagnano, Stern, & Dietz). Despite the diversity of the specific applications modeling the attitude-behavior relationship, the theorizing has generally converged into two frameworks to explain pro-environmental or conservation behavior: Ajzen's (1991) Theory of Planned Behavior (TPB), discussed previously, and Stern's (2000) Value-Belief-Norm theory (VBN) (Kaiser, Huber, & Bogner, 2005). Where the TPB posits that behavior is a function of an individual's attitudes, subjective norms, and perceived behavior control, the VBN theory focuses on individual values, beliefs, and personal norms to predict and explain pro-environmental behavior (Kaiser et al., 2005; Stern, 2000).

Stern's (2000) VBN model builds directly upon environmental behavior research that looks at Schwartz and Bilsky (1987; Schwartz 1992) social-psychological model of altruistic behavior (or Normative-Value theory). In this conceptual framework, social norms are adopted individually and become personal norms, which are then activated and subsequently translated into behavior from two variables—awareness of the consequences that the action or inaction will have and an ascription for the responsibility

50

of these actions/inactions. Schwartz's model also considers altruistic behavior as normative behavior, where norms are developed through social interaction (Stern, 2000). Stern (2000) generalizes causal variables, or those demonstrating the most explanatory power for environmentally significant behavior, into four major types: 1) attitudinal variables, which include norms, beliefs and values, and a general disposition to act with pro-environmental intent; 2) external or contextual forces, which range from things like community expectations and governmental regulations to availability and access to public policies that support the behavior; 3) personal capabilities, which include knowledge and skill required for a particular action, the lack of resources or capabilities (e.g. money, literacy, social status), and socio-demographic characteristics such as age, race, education, and income level; and 4) habit or routine, which often requires breaking a specific habit or routine in order to achieve any behavioral change.

More recently, there has been an increased effort to look at the two predominant theoretical frameworks—the TPB and VBN—together, either in a combined, mixed-model approach or in a comparative manner. For example, Oreg & Katz-Gerro (2006) build upon the TPB and VBN to propose and test a unique model that can predict pro-environmental behavior. Using a large multinational sample, structural equation modeling (SEM) was employed for the analyses to see which independent variables had the most predictive power on the three dependent variables representing pro-environmental behavior: recycling, restraining from driving, and environmental citizenship. Each independent variable in the model—harmony, postmaterialism, environmental concern, perceived threat, and perceived behavioral control—showed significant predictive relationships with pro-environmental behavior outcomes and

51

behavioral intention (Oreg & Katz-Gerro, 2006) ($\chi^2$ = 15,671.95, $df$ = 159, $p$ < .001, CFI = .90, AGFI = .93, RMSEA = .056). Results from the 31,000+ respondents who were surveyed, which spanned across 27 countries, showed that environmental concern significantly influenced willingness to sacrifice (or the willingness to pay higher prices and taxes associated with improving the environment), which significantly predicted the pro-environmental behaviors of recycling, restraining from driving, and environmental citizenship (Oreg & Katz-Gerro, 2006).

Instead of combining the two predominant theoretical frameworks, Kaiser and colleagues (2005) were one of the first to contrast the VBN model and the TPB to explore each theory's ability to explain conservation behavior. Using a convenience sample of 468 university students, SEM analyses showed that both theories demonstrated significant explanatory power, where the TPB's original determinants—attitudes, subjective norms, and perceived behavioral control—accounted for 75% of participants intentions, which in turn accounted for 95% of the variance in people's self-reported conservation behavior, and the VBN accounted for 64% (Kaiser et al., 2005). Despite the fact that the study had limitations in terms of using self-report measures of behavior and respondents' susceptibility to social desirability bias, the study's explanatory results and demonstration of adequate model fit help support the prowess of the TPB and VBN in explaining and predicting pro-environmental behavior.

Though much of the pro-environmental attitude-behavior research has used the TPB and the VBN specifically as guiding theoretical frameworks, other studies have focused on an individual component of the theoretical relationship, looking at a few single independent variables working together to adequately and significantly predict and

52

explain pro-environmental behavior. The relationship between pro-environmental attitudes and behaviors is complex and can be predicted, mediated, and moderated by numerous factors.

In an experimental study on how individual attitudes influence curbside recycling, widely considered an environmentally-friendly and sustainable behavior, Guagnano, Stern and Dietz (1995) developed an attitude-behavior model (or A-B-C model) which posits that actions or behaviors (B) are associated with attitudes (A), but that these actions have external conditions (C) associated with them. Using a survey methodology and an experimental design where one random group was given a household recycling bin and another was not, individuals' attitudes towards recycling and recycling behavior were observed. Both groups were found to have strong pro-recycling behavior. However, the variable that had the most significant direct effect on recycling behavior was the presence of a recycling bin. Attitudes alone were not strong enough predictors of recycling behavior. What the A-B-C model implies theoretically, is for personal behaviors that are not strongly influenced by context (e.g. being mandated to act or being rewarded for behavior), or the more difficult, expensive, or time-consuming the behavior is, the weaker its dependence on attitudinal factors (Stern, 2000). Ultimately, the A-B-C model showed significant ability to predict a context in which the effectiveness of education and information can regulate attitudes in relation to intervention strategies effecting external conditions that reflect pro-environmental behavior (Guagnano, Stern & Dietz, 1995). The relationship between attitudes and behaviors, and the influence of contextual variables, has been a guiding framework for many other research studies focusing on pro-environmental and sustainable behavior.

Overall, the extant literature has shown the most recurrent predictor variables influencing pro-environmental behavior to be internal variables such as pro-environmental attitudes, values, and behavioral intentions, along with concern for the environment and possession of environmental knowledge and information. External conditions like the provision of information and directed intervention strategies have also shown to help increase pro-environmental behaviors. Though the attitude-behavior relationship has been a predominant theoretical framework for explaining and predicting sustainable behavior (McKenize-Mohr, 2013), research has shown that there are still several inconsistencies in the efficacy of using attitudes and intentions to predict behaviors (Barber et al., 2014; Bishop & Barber, 2015; Lynn & Lynn, 2003).

The following section will review this phenomenon of an existing attitude-behavior gap in sustainable and pro-environmental behavior research.

2.9 THE ATTITUDE-BEHAVIOR GAP

There is an acknowledged controversy over the attitude-behavior link and the idea that attitudinal components alone may not accurately predict actual behavior and that favorable attitudes towards the environment are not always indicative of high levels of environmental knowledge or concordant behavior (Barber et al., 2014; Diamantopoulos et al., 2003). This phenomenon, where positive intentions formed by congruent attitudes, values, and beliefs are not actualized into behavior, is at times referred to as the attitude-behavior gap (Kollmuss & Agyeman 2002; Pickett-Baker & Ozaki, 2008). As previous research has concluded, increased knowledge and possession of information will typically lead to a concordant action. But in some cases, providing information on

environmental issues does not always result in increased pro-environmental attitudes or behaviors (Pickett-Baker & Ozaki, 2008, Pooley & O'Connor, 2000).

Mainieri et al. (1997) used the TPB, which posits that attitudes and intentions are significant predictors of behavior, to investigate the variables that predicted or influenced the purchase of green or environmentally-friendly products. With the self-reported purchase of a green product as the dependent variable in the study, awareness, beliefs, attitudes, and demographics were examined as predictor variables. Acknowledging the inconsistency in research on pro-environmental attitudes and concordant behaviors, especially in studies looking at consumers' self-reported behavior and their relating pro-environmental beliefs and attitudes, Mainieri et al. (1997) found supporting evidence of the attitude-behavior gap. Using a systematic random sample of individual households in the United States, their findings showed that a majority of respondents said they would pay more for environmentally-friendly grocery products and had a higher level of environmental concern, but less than 20% reported actual purchases of these types of goods (Mainieri et al., 1997).

Similarly, based on the results from a survey of supermarket shoppers in the U.K., Pickett-Baker and Ozaki (2008) supported the existence of a gap occurring between consumers' beliefs and behaviors regarding green product consumption. Their evidence refutes popular theory that an individuals' behavior is determined by his or her belief that the outcome of a particular behavior and the existing social norms will directly affect their behavioral intention (Ajzen, 1991). The conclusion made here is that what people believe is a good idea or a positive value does not always predict what they actually do, especially in an environmental context. Barr et al. (2011) found that individuals who

55

were committed to supporting the environment and sustainability in the context of the home and that held strong beliefs towards sustainability practices did not extend those behaviors to a greater context outside the home. Positive attitude towards green behavioral intentions stopped once it extended beyond the home environment.

In a foundational study aimed at exploring the behaviors that affect the ecological health of the world and to better understand the attitudes and knowledge of the population regarding their intentions towards sustainable behaviors, Maloney and Ward (1973) developed a novel "ecology scale" to measure attitudes and knowledge. The scale consisted of four subscales relating to ecological issues: verbal commitment, actual commitment, affect—or the degree of an individual's emotionality, and knowledge. Results of their study showed that most respondents had a high degree of verbal commitment and affect, with lower levels of actual commitment and knowledge. In other words, people were saying they were interested in and willing to engage in or contribute to pro-ecological behavior, but did little and knew even less about the topic (Maloney & Ward, 1973).

Tanner (1999) reiterates that previous assertions made in environmental psychology research concentrated too heavily on environmental concern and attitudes as predictors of environmental behavior, and challenges the assumption that by changing people's attitudes and beliefs through education and information will help change their behavior: "a major limitation of this research is the neglect of a behavior's embeddedness in cultural structures entailing a host of behavioral barriers and constraints. In particular, little attention has been paid to the factors that are necessary for an individual's ability to participate in a specific action" (Tanner, 1999, p.146). This observation suggests that

some behaviors or actions cannot be realized, despite the direct intention, because of external constraints such as the lack of access to public transportation or living in a food desert. Ultimately, the gaps in the attitude-behavior relationship that Tanner (1999) identified were manifested in conditional or situational variables, which could range widely from income level to weather.

Addressing the attitude-behavior gap specifically, Kollmuss and Agyeman (2002) explore some of the overlapping factors that shape and influence pro-environmental behavior, both positively and negatively. These include demographics, external factors such as economic, social and cultural factors, and internal factors like motivation, knowledge on the subject, awareness, values, attitudes, emotion, locus of control, responsibilities, and priorities. Though the model was helpful in identifying and specifying where and how attitude-behavior gaps exist in sustainable behavior, it has not been tested and remains in a conceptual stage (Kollmuss & Agyeman, 2002).

But not all research on consumer behavior and consumption as it relates to sustainability uses the TPB and other traditional attitude-behavior models. Though the attitude-behavior relationship is the most widely applied theoretical framework, alternative behavior models and theories have started to emerge in the discussion on sustainability. These new, alternative theories are addressed below.

2.10 ALTERNATIVE CONSUMPTION BEHAVIOR THEORIES

From a hospitality operations and management perspective, consumer behavior is a very important topic of inquiry. Understanding how and why an individual decides to consume a specific product or service is a critical point of inquiry for any enterprise, especially in the service industry. Through an understanding of the primary consumers'

57

motivations and demands, management and marketing strategies can be crafted to meet those demands and expectations. Within hospitality specifically, consumer behavior research can be approached from multiple perspectives: including the consumer's behaviors and interactions at the point of purchase, service encounters, development of loyalty and repeat visitation habits, pricing strategies, consumer typologies, and the decision-making processes behind consumer behavior (Mattila, 2004).

As discussed at length in the previous section, one of the most established theoretical frameworks grounding consumer behavior in foodservice research is the attitude-behavior relationship, which looks at how attitudes, beliefs and intentions have a positive effect on actions and behaviors. However, one approach that is often overlooked within hospitality research is the aspect of how taste drives consumption behavior and why consumers desire specific items or ingredients.

What we choose to eat, and why, is an entirely personal decision, and is usually based more upon preferences that stimulate sensory and emotional responses than for simply satisfying hunger. Within the discourse on food and taste, the eating experience, and the pondering of why we eat what we do, there is the argument that food is one of the primary elements used to distinguish groups and individuals, where consumption can be at the same time a form of self-identification and of communication (Mintz, 1996). Food and taste can be used to help define who we are, as well as to demonstrate who we are not, and who we aspire to be:

> There is a complex relationship between class and food consumption…first in the obvious sense that particular groups occupy differential market situations in terms of their ability to purchase certain foods, and second in the uses various groups

58

make of foods and food preferences in marking themselves as distinctive from or

in some sense like other groups. (Roseberry, 1996, p. 773)

Economic-related consumer behaviors also play a role in developing taste

preferences. As the principles of supply and demand dictate, at a certain point high price

quells the demand, allowing supply to regenerate. But occasionally, when supplies

dwindle and price becomes prohibitive to the masses, demand still persists. For example,

in January 2013, a Bluefin tuna was sold at the Tsukiji fish market in Japan for $1.76

million—that's $3,600 per pound (or $225 per ounce)—eleven times the current price of

silver (Fackler, 2013). The question becomes, how is it that one food item, which is

consumed in one sitting and has no long-term value whatsoever, can become so highly

valued?

When it comes to food, rarity, or the difficulty associated with its procurement,

automatically assigns it a higher price. Throughout time and across almost every culture,

humans have used rare, higher-priced luxury food items as a status symbol—salt, spices,

sugar, wine, caviar—aiding in the display of economic superiority. But where most foods

usually become readily available to the masses and lose their rarity, other foods become

rarer and subsequently valued as a status symbol for the elite. The link between rarity

value and species extinction is a documented phenomenon called the "anthropogenic

Allee effect" (Courchamp, Angulo, Rivalan, Hall, Signoret, Bull & Meinard, 2006).

Courchamp and colleagues (2006) found empirical and mathematical support for the

relationship between human activities and the descent of a rare species into extinction,

showing that the rarer a species became, the more its value became exaggerated. Instead

of high price stemming demand, the increased rarity of a species led to higher valuation that in turn increased the willingness to pay for that species.

Given its direct impact on the environment, consumption has also been explored from an environmental history perspective. One of the first areas where the relationship between food and the natural environment started to gain scholarly attention was in relation to agriculture, food production, and the subsequent effects on the natural environment—or agroecology as coined by Worster (1990)—or the idea of resource extraction for the purpose of consumption and economic advancement. As Worster (1990, p. 1091) noted, "humans have extracted an extraordinarily diverse array of resources from the natural world, and the number and magnitude of them is growing all the time. But the most basic and revealing of them in the study of human ecology have been the resources we call food."

However, some environmental history research has started to look at the relationship between food and the natural environment from a different perspective— looking at the role that consumption and taste play in affecting the natural environment and society, instead of just focusing on the role of agricultural production and commodification of foodstuffs. In 2009, the journal *Environmental History* put out a special issue/forum on the role of food consumption and the environment. As Chester III and Mink (2009) introduced the topic, they specified clearly the role that food plays in all aspects of life, suggesting nothing else could be more important than food. In this special issue, other academic disciplines join environmental history's discussion on food and the environment.

Dusselier (2009) takes an anthropological perspective by looking at the role food plays in the formation of culture, acknowledging how food is "inseparable from social, political, historical, economic, and cultural contexts," and asks for the methods for the study of food and environment be approached in an alternative manner:

Here we are encouraged to think about concerns for the environment including implications encompassed by how we use the land and the harmful effects of pesticides. For others the environment represents the landscape and place, in the most basic terms how the physical environment influences food. A place-influenced interpretation of the environment leads us to wonder: How do people employ particular places and environmentally based understandings of food to create collective understandings of themselves? (Dusselier, 2009, p.332)

Mink (2009) furthers the discussion on the relationship between food and the environment using a consumption perspective instead of a production perspective by arguing that "It Begins in the Belly." Understanding the importance of food and its relationship to environmental history, Mink (2009, p.313) points out that environmental history's "major weakness when it comes to understanding food stems from the fact that environmental history has never really begun in the belly." For example, Mink (2009) argues it is time to start thinking less about the effects of wheat production on the surrounding environment, and more about what it means to eat bread made from Midwestern wheat instead of Midwestern corn, or why some certain fish species have turned into staple commodities where others have not. Why have we developed a taste for rare and diminishing species? Mink (2009) attempts answer the difficult question of what this all means:

It means recognizing that foods are never simply a natural resource, an element in a system of production, a part of the soil, or a product of the ocean. It means revising many of the models that have thus far produced insightful stories about those who live and work on the land and further emphasizing the stories of those who sustain themselves from the same land, but who are hundreds, if not thousands, of miles away from those landscapes that support their lifestyles, cultures, and communities. It means understanding that foods are narrated, legislated, prepared, sold, advertised, processed, trucked, and packaged into existence. (p. 314)

Within marketing and hospitality research, consumer behavior and the variables influencing consumers' decisions to purchase a specific product or brand has been a thoroughly examined concept. A substantial portion of the research has used theoretical frameworks that consider personal, internal variables (such as an individual's attitudes, behavioral intentions, emotional responses, or even economic status) as the primary antecedents to consumer behavior. Along with attitudinal and cognitive variables, a variety of external and conditional variables have also been examined for the role they play in influencing consumer behavior. These variables differ considerably, and have been examined in multiple research contexts, and can range from the effects of an intervention strategy to the perception of information and environmental surroundings. But given the complexity of consumer behavior, there is no single or dominant explanatory variable. There has also been emerging evidence demonstrating an inconsistency in the use of cognitive variables to predict concordant behavior relating to consumer behavior. However, recent considerations have been made suggesting that

consumer behavior and consumption is influenced by variables other than attitudinal or cognitive processes. For example, Mink (2009) and Mintz and DuBois (2002) argued that researchers should investigate the end product or item being consumed in the first place, and better understand the personal and physiological motivations to consume a certain product instead of just focusing on cognitive or volitional variables affecting consumption decisions.

Based upon the literature review and the theoretical frameworks previously discussed in this chapter, the following section is a discussion of the dependent and independent variables under examination in the current study and the corresponding hypotheses driving the research that were developed through the preceding review of the existing literature.

DEPENDENT VARIABLES

2.11 PURCHASE BEHAVIOR

There has been a substantial amount of consumer behavior research relating to sustainability and green practices in the foodservice industry, and almost all the findings suggest consumers perceive restaurant green practices in a favorable light. However a majority of the existing studies only look at consumers' perceptions and intentions, such as the willingness to pay more and intentions to purchase, and not actual purchase behavior (DiPietro & Gregory, 2012; DiPietro et al, 2013; Dutta et al., 2008; Hu, et al., 2010; Namkung & Jang, 2013; Schubert, et al., 2010). Though insight into consumers' behavioral intentions and perceptions can be critical to developing marketing and operational strategies, examining how consumers actually behave provides more accuracy and assurance when looking at the relationship (Lynn & Lynn, 2003).

63

Therefore, the specific behavior under examination in this study is the purchase of a local food item in an operational upscale casual restaurant setting.

The purchase of local food is considered to be a sustainable act or a measure of pro-environmental behavior for multiple reasons. First, the majority of existing hospitality research looking at local food and sustainable restaurant practices has looked at willingness to pay more for local food, and have yet to measure actual purchase behavior in an upscale casual setting. Secondly, as discussed earlier, the purchase and support of local food can be considered a sustainable act in that local food adheres to the three-pillar model of sustainability—environmental, economic, and social responsibility.

Whether the objective of environmental behavior research has been to aid in the evaluation of determinants of ecological behavior or to effect behavioral change in a positive manner, a primary goal has been to accurately measure ecological behavior (Kaiser, 1998). Kaiser (1998) describes two key features of ecological behavior that makes measurement problematic: some behaviors are more difficult to carry out than others and ecological behavior is susceptible to countless and unpredictable influences. People's ecological behavior is determined by more than just their attitudes and beliefs or intentions, and often socio-cultural constraints determine which ecological behavior is easier and which is harder.

In order to promote the changes needed for a sustainable future it is essential to have a better understanding of the variables that affect individuals who engage in environmentally responsible behavior (McKenzie-Mohr, Nemiroff, Beers, & Desmarais, 1995). However, from a practitioner's perspective, looking at actual behavior is far superior in aiding operational decisions than simply assessing consumers' attitudes and

64

intentions (Bishop & Barber, 2015; Lynn & Lynn, 2003). As discussed earlier, it is much easier, and more common, for a consumer to say they are willing to pay more for something or state a willingness to support a cause than to actually do it or complete the act in reality.

Besides purchase behavior, another important metric of a restaurant's operational success and viability within a competitive marketplace is the perceptions amongst diners regarding their overall image. Given its importance in developing operational and marketing strategies, perception of restaurant image, the second dependent variable in this study, will be discussed next.

2.12 PERCEPTION OF RESTAURANT IMAGE

A restaurant's image is considered to be a collection of consumers' perceptions and feelings as they relate to various components of a restaurant's physical and operational components (Ryu & Jang, 2008; Ryu, Lee, & Kim, 2012). These components, which primarily consist of the atmosphere and service environment, or "servicescape," and the quality of service, food, and overall experience, ultimately work to form a general image of a particular establishment (Lin & Mattila, 2010; Ryu & Jang, 2008; Stevens, Knutson, & Patton, 1995). Together the components help to build a general brand image which consumers either like or dislike, resulting in the formations of satisfaction and loyalty, which lead to revisit intention and purchase behavior, and ultimately aides in the decision on choosing where and what to eat when dining away from home (Han & Ryu, 2009; Stevens et al., 1995). Though the determinants of why an individual decides to dine out are dynamic and relatively unpredictable, research has shown that consumers sometimes choose a product or service based on its hedonic or utilitarian benefits.

65

Building upon previous research on hedonic vs. utilitarian benefits and customer satisfaction, Chitturi, Raghunathan, & Mahajan, (2008) suggested that product consumption for hedonic purposes evoked delight, whereas consumption for utilitarian purpose evoked satisfaction, and a failure to address these expectations ultimately resulted in the evocation of converse emotions: anger and dissatisfaction. In order to achieve the highest level of customer satisfaction, one of the primary goals of every hospitality practitioner, operators and practitioners must work to understand the consumers' consumption goals and identify the attributes they are trying to fulfill by the consumption of a specific product or attribute.

Though operational strategies vary depending on restaurant type and target market, many of the fundamental elements are found to exist across almost all restaurant types. In a comparative study of the marketing strategies between American and Canadian restaurants, Heroux (2002) identified six fundamental components of a restaurant operating strategy based upon consumers' demands:

1) The product line, or menu: Includes the variety of offerings, portion size and quality.

2) Service: Includes guest services, customization, reservations, hours, and satisfaction.

3) Place or location: Includes visibility, site evaluation and appearance, building type, parking, and public accessibility.

4) Atmosphere: Layout, lighting, cleanliness, scent, signage, and other elements that contribute to perceptions of a restaurant's physical surroundings.

5) Price: Price level, competitiveness, acceptance of credit cards, ease of

transactions, and any other financial interactions that directly influence consumer perceptions or service interactions.

6) Promotions: External advertising and internal communication to the guest.

Restaurants are unique in this manner, as they can both satisfy a very basic, physiological necessity, and help to satisfy a social, higher-level need that humans desire (Mehta & Maniam, 2002). Because of the dichotomous nature of purpose and function, restaurants have a developed the unique property of being both a product and a service. So when developing a marketing strategy, restaurant operators or managers must keep in mind that consumers are seeking both the primary fulfillment of being fed, as well as the desire to interact socially and partake in an experience.

The marketing of the experience has long been a primary component in all hospitality marketing strategies (Scott, Laws, & Boksberger, 2009). In the specific context of a restaurant, not only does the marketing of food and drink play a role in the experience, but the kind of service provided and atmosphere are critical as well. Offering multiple options also allows the consumer the freedom of choice, which ultimately adds to the overall dining experience (Campbell-Smith, 1970). Additionally, the type of cuisine—which can vary by region or country of origin and range in nutritional or caloric value—as well as how it looks, smells, and tastes can all factor into the accentuation of a dining experience. There are also several levels of service that factor into the restaurant experience, with counter-service at one end of the spectrum, and complete table-service at the other.

For Campbell-Smith (1970), the last component to marketing the restaurant experience is atmosphere. Elements of atmosphere in a restaurant can range extensively,

and includes everything from seating style and arrangement to lighting and cleanliness. Though each individual element has the potential to influence a diners' experience and create an image of the restaurant, it is the total effect of all of the elements combined that produces the strongest individual effect on the overall dining experience.

The origination of looking at atmosphere as a specific marketing tool can be traced to the field of retailing. Kotler (1973-1974) was perhaps the first to recognize that when making a purchase decision, consumers respond to more than just what a product or service has to offer, instead factoring the product as a whole—including such attributes as packaging, advertising, imagery, and other components that coincide with the products positioning. And in some specific circumstances and scenarios, Kotler (1973-1974) argues that the place where a product is sold, or more specifically the atmosphere of a place, can be more influential than the actual product itself when a consumer is making a purchase decision. It is within this concept of using a place or atmosphere as a marketing tool that Kotler coins the term 'atmospherics,' or the effort to design a retail or buying environment intended to produce specific emotional effects in the buyer, thus enhancing their purchase probability (Kotler, 1973-1974). Kotler (1973-1974) proposed four situations where and when atmospherics can be a relevant marketing tool:

1) Where the product is purchased or consumed and the seller has design options. The atmospherics are more meaningful for retailers than for manufacturers, wholesalers, or basic sales.

2) When the number of competitors increase—as it can help to differentiate and attract specific market segments.

3) In industries where the differences in the product and/or price are small.

4) When products or services are targeted towards specific social classes or lifestyle-buyer groups.

Atmosphere, which can include a restaurant's signage and menu, can affect purchase behavior in many ways, as it can help create attention and deliver a message. It also helps to create affect by triggering senses which can heighten or create a desire or appetite for an item, service or experience (Kotler 1973-1974). The general concept that guides the connection between atmosphere and purchase decision is that a consumer will first apprehend and perceive the sensory qualities of a given space, which will therefore modify the information and affective state of the consumer, ultimately impacting their probability of making a purchase.

Expanding on the concept of atmospherics as a marketing tool and the ability of a physical environment to influence consumer behavior, Bitner (1992) describes in more depth how the servicescape, or the built environment of a service establishment, can affect the behaviors of both consumers and employees of a given service organization. The servicescape can have many components, but it generally incorporates the ambient conditions such as temperature, air quality, noise, smells, and spatial layout, including furnishings and equipment, as well as signs, symbols and artifacts. Bitner (1992) posits that the servicescape can be the most important marketing attribute in a service setting, as both the customers and the employees experience the organizations' facility.

Even though there are several types of service organizations, each with its own varying aspects of physical complexity to its particular servicescape, the underlying concept is that any individual who is exposed to a particular setting responds cognitively, emotionally, and physiologically to that environment. Subsequently, an individual's

response to the atmosphere or servicescape can directly influence their behavior, affecting approach or avoid decisions or other social interactions between and among the customers and the employees (Bitner, 1992).

Within a hospitality context, Heung and Gu (2012) sought to identify and categorize the elements of restaurant atmospherics and investigate the influences of atmospherics on patrons' satisfaction and intentions to revisit. Five dimensions of restaurant atmospherics were identified: facility aesthetics, ambience, spatial layout, employee factors, and view from the window. Heung and Gu's (2012) research supported results from previous literature that reinforced the evidence that restaurant atmospherics have a significant influence on patrons' dining satisfaction and intentions to revisit, as well as willingness to spread positive word-of-mouth and pay more.

In addition to physical and situational factors, individuals' emotional state and response to surrounding stimuli has also been shown to have a direct effect on approach or avoid behavior. Mehrabian and Russell's (1974) model on consumer approach and avoid behavior posits that environmental stimuli leads to an emotional response, which results in a subsequent reaction. The authors concluded that environmental stimuli elicited a positive emotional reaction which directly affected purchase decisions and willingness to pay more. Conversely, negative emotional responses resulting from environmental stimuli resulted in avoidance behavior, which ranged from the ignoring of communication to physical departure from the location (Mehrabian & Russell, 1974).

Jang and Namkung (2009) extended and adapted Mehrabian and Russell's (1974) model within a hospitality context to see how environmental stimuli could affect approach or avoid behavior in a restaurant specifically. Restaurant atmospherics, service

70

quality, and quality of food were the environmental stimuli used to determine what effect positive or negative emotions had on behavioral outcome, mostly return intention. Jang and Namkung (2009) concluded that a positive emotion resulting from perceived product quality, service quality, and restaurant atmospherics increased likelihood to revisit and other positive behavioral intentions, where negative emotions elicited from the same stimuli had a reverse effect.

Similarly, Kim and Moon (2009) applied the Mehrabian-Russell (1974) model to see how the servicescape could affect restaurant customers' cognitive and emotional processes and the resulting influence on perception of service quality, level of enjoyment, and revisit intention. It was determined that the perception of the servicescape had a direct influence on the customers' emotional state which then affected their behavioral intention. Intent to revisit increased when environmental stimuli produced positive emotions like pleasure and increased perception of service quality, whereas negative perceptions of the servicescape led to negative emotions which therefore reduced revisit intention.

Based on the literature surrounding the effects of restaurant image on purchase behavior in a restaurant, the following hypothesis was formed:

**H1**: Perception of restaurant image has a positive, direct effect on the purchase of a local food item in an upscale casual restaurant setting.

The following section will review the literature surrounding the two independent variable constructs used in the conceptual model guiding this research: environmental consciousness and the perception of menu information, which includes a review

71

consumer perceptions of information and signage, previous research on menus, menu psychology, and the importance of the menu in a foodservice operation.

INDEPENDENT VARIABLES

2.13 ENVIRONMENTAL CONSCIOUSNESS

Over the last fifteen years there has been a visible and rapid growth in environmental awareness and concern, the promotion and emphasis of a sustainable lifestyle (Bang et al., 2000; Diamantopoulos et al., 2003; Huang et al., 2014; Mainieri et al., 1997; Tanner & Wölfing Kast, 2003), and increased consumer demand for green and sustainable products and businesses (Laroche et al., 2001). The products and services under demand vary diversely, and range from green energy brands and vehicles to the use of sustainable food, especially local and organic (Nie & Zepeda, 2011). Consumer demand for environmentally-friendly or green products and practices has been growing steadily over the last several years, and consumers are increasingly realizing that their purchasing decisions can have an ecological or social impact, and that their identity and worldviews can be expressed through food purchases by supporting the values that those food choices provide (Dutta et al., 2008; Laroche et al., 2001; Nie & Zepeda, 2011).

This explosion in consumer demand for more environmentally responsible products, practices, and services can be seen as a paradigmatic shift in consumer attitudes, beliefs, and behaviors that comprise a state of 'environmental consciousness' (Kollmuss & Agyeman, 2002; Laroche et al., 2001). In attempts to explain and predict pro-environmental behavior, a wide array of studies, conducted throughout a variety of disciplines, have sought to conceptualize, measure, and model the influence of

72

environmental consciousness, either looking at it as a unique, independent construct, or looking at the various components that comprise environmental consciousness.

However, much of the research that attempts to measure environmental consciousness lacks theoretical specification of the particular element of environmental consciousness being examined. Furthermore, inadequate psychometric assessments, sampling deficiencies, and failure to incorporate all three of the main theoretical dimensions to environmental consciousness—knowledge, attitude, and existing behavior—has led to significant gaps in the research (Diamantopoulos et al., 2003).

In their conceptual study on the attitude-behavior gap in environmental behavior research, Kollmuss and Agyeman (2002) explained that environmental consciousness is really an aggregated concept that incorporates environmental knowledge, values, and attitudes, combined with emotional involvement and concern for the environment. Other researchers have combined or overlapped the concept of environmental consciousness with environmental concern (Lin & Chang, 2012; Nie & Zepeda, 2011; Tanner & Wolfing Kast, 2003).

Ultimately, environmental consciousness is considered a construct that embodies attitudes, values, beliefs, and existing behavior as it relates to supporting the environment. Huang et al. (2014) explain in more depth:

Environmental consciousness refers both to a tendency to mentally reflect on the environment and to behavior and psychological states that reflect environmental commitment. Environmental consciousness is a kind of belief, which refers to an individual's descriptive ideas about certain things and attitudes that reflect that

73

person's consistent evaluation, feeling and tendency toward that thing or concept. (p. 140)

Furthermore, in the context of environmental consciousness, attitudes are usually considered to be factors that directly influence behavioral intentions and behavior, and beliefs tend to be regarded as a predisposing factors in the formation of an attitude (Huang et al., 2014).

Results of other studies have shown that there is really no single, primary factor working to explain pro-environmental behavior or attitudes. As an example, Grob (1995) applied alternating environmental behavior theories to justify each component of his model that included five interconnected parts that comprised the environmental attitude-behavior relationship. The first component of the model, environmental awareness, was composed of factual knowledge about the environment and recognition of environmental problems. Grob (1995) proposed that the more knowledgeable a person was about the environment and environmental issues, the more likely s/he would behave pro-environmentally. This part of the model supposes that recognition of environmental problems and overall awareness will lead to corresponding behavior. The second part of the model is comprised of emotions, specifically emotional values relating to the environment and the feelings resulting from ideal and actual environmental conditions. The model suggests that the strength of an emotional response regarding feelings of environmental issues will result in a behavior that appropriately and accordingly corrects the problem.

The third component of Grob's (1995) model is personal-philosophical values, and suggests that the more materialistic a person's values are, the less appropriately he or

74

she will act towards the environment. The fourth component is perceived control, similar to a locus of control or the belief in the efficacy of science and technology and in one's own self-efficacy. Grob (1995) hypothesized that people with higher internal locus of control would act more environmentally friendly than those with external locus of control. The dependent variable, environmental behavior, was a self-reported measure that used a variety of environmentally related statements that ranged from household recycling behavior and electricity use to transportation methods. SEM was used to test the model, which analyzed data collected from 398 survey questionnaire participants. Overall, the model showed strong explanatory capability and found that the most important effects on environmental behavior came from personal-philosophical values and emotions. But in contradiction to previous research, an individual's environmental awareness was shown to have the weakest influence on pro-environmental behavior. Individuals' possession of factual knowledge regarding environmental issues also had no effect on behavior. Ultimately, the more individuals' were affected by damage to the environment, the more pro-environmentally they behaved, and the less control they perceived they had over affecting change, the more likely they were to exhibit pro-environmental behaviors (Grob, 1995).

In a study that sought to predict composting behavior, McKenzie-Mohr et al. (1995) found that knowledge was a prerequisite to pro-environmental action and locus of control helped determine the extent to which knowledge and skill set could be translated into action. In a large study on household recycling behaviors, Oskamp (1995) provided evidence that general environmental concern, environmental knowledge, and pro-environmental attitudes were significant predictor variables for explaining pro-

75

environmental behavior. Oskamp (1995) also identified additional variables that significantly explained recycling behavior, which were higher income level, more members of the family and belief in the effectiveness of recycling.

There are several factors that influence the environmental attitude-behavior relationship, such as personal characteristics like knowledge and motivation, and situational characteristics such as social norms and economic constraints (Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997). Some studies have examined demographic, psychographic, and socioeconomic variables as predictors of behavior, as well as the role that knowledge and information of environmental issues plays on affecting behavior (Fraj & Martinez, 2006).

Though much of the psychological research has focused on attitudes, behaviors, values and norms, situational factors and external conditional variables are often omitted from the models. Noting this gap in research, Tanner and Wölfing Kast (2003) looked at personal factors such as attitudes, behaviors, knowledge, and social norms, and contextual factors like socioeconomics, store characteristics, and access, which acted as barriers to purchasing green food products in Switzerland. They identified and classified four specific variables that had a relevant impact on environmental behavior: measures of specific attitudes and beliefs, perceived barriers, knowledge, and personal norms. Their results supported earlier findings that personal attitudes and beliefs can be powerful predictors of green purchases.

In a longitudinal field study, Iyer and Kashyap (2007) explored the behavioral aspects of recycling with the goal of trying to understand how to increase involvement participation and frequency. They suggest that much of the previous research on the

76

subject had been too selective on the factors explaining why people recycle, which ultimately resulted in a vast and disparate assortment of factors without any comprehensive theoretical model of recycling behaviors. Their results showed the factors influencing recycling could be boiled down to three motivations or antecedents to behavior: internal motivators, which included environmental values, beliefs, and attitudes; external motivators, such as access, geographical setting, laws and regulations, societal norms, monetary incentives, and the role of information; and individual characteristics, such as demographics, education, knowledge and awareness, and social class. Ultimately they concluded that interventions were crucial to encouraging recycling behavior, and incentives had an immediate and direct effect. The dissemination of information and accumulation of knowledge had a lasting effect and gender played a small role as well. Women displayed more pro-environmental tendencies then men, and social class was also an important factor. However, there was little correlation between recycling attitudes and behaviors and other pro-environmental attitudes and behaviors (Iyer & Kashyap, 2007).

Unfortunately, much of the research findings and conclusions examining determinants and predicting factors or variables of pro-environmental behavior are not consistent. In a study of consumer motivations and determinants of green product purchases, Pickett-Baker and Ozaki (2008) concluded demographics, with perhaps the exception of gender, were not a solid indicator of environmental attitudes. In their study that explored the role that socio-demographics had in profiling the green consumer, Diamantopoulos, Schlegelmilch, Sinkovics, and Bohlen (2003) examined gender, marital status, age, number of children, education, and social class. They found that the

77

associations between socio-demographic characteristics and environmental consciousness were seen as too complex, and the results failed to explain much of the relationship. Overall, results show there is relatively limited use in employing socio-demographic characteristics to profile the green consumer (Diamantopoulos et al., 2003). Tanner and Wölfing Kast (2003) concurred, finding that social status and income had little influence on green purchase behavior. They also found that the cost of the product itself had little influence on the purchase of green products.

Based on the results from the literature previously discussed, the following hypotheses were developed for testing:

**H2**: Environmental consciousness has a positive, direct effect on the purchase of a local food item in an upscale casual restaurant setting.

**H3**: Environmental consciousness has a positive, direct effect on the perception of restaurant image.

The following sections look at the research surrounding the second latent construct in the study, perception of menu information. First is a review of the existing research on perception of information and signage, followed by a discussion on the restaurant menu.

## 2.14 PERCEPTION OF MENU INFORMATION

Knowing how consumers perceive and react to information is an important factor to understanding the purchase-decision-making process and can have significant marketing implications. Not only do consumers often make brand choices based on aesthetic value and distinctiveness of visual design, but visual information can also help to distinguish a particular product from its competition. Providing information directly to

the consumer, such as detailing how a product is made or prepared, or explaining how much it costs, can have an effect on numerous consumer behavior variables such as brand loyalty, product involvement, and usage behavior (Bloch, Brunel, & Arnold 2003).

Many fundamental studies examining the effects of verbal and visual information on the formation of attitude have been conducted in the context of media marketing and television advertising (Hirschman, 1986). Results have been shown to be fairly inconclusive as to the direct effect that visual and verbal messaging has on brand perception and the formation of brand attitudes, and certain areas are still unexplored. Hirschman (1986) identified three dimensions on which attitudinal and perceptional responses were based: utilitarian or rational perceptions, aesthetic or emotional perceptions, and familiarity perceptions. In a test that controlled for moderating factors by testing advertising content in the same way but through different stimuli, Hirschman (1986) was able to support findings from previous literature which concluded that the visual portion of an advertisement is able to evoke a direct influence upon consumers' affective judgments towards a product.

The way consumers perceive and react to visual stimulation can be complicated and hard to measure. Bloch et al. (2003) attempted to address this particular phenomenon through the development of a scale designed to measure individual differences in visual product aesthetics, referred to as centrality of visual product aesthetics or CVPA. It was concluded that CVPA encompassed four related dimensions: "1) the value a consumer assigns to product appearances in enhancing personal and even societal well-being, 2) acumen, or the ability to recognize, categorize, or evaluate product designs, 3) the level of response to visual design aspects of products, and 4) the determinancy of visual

79

aesthetics in affecting product preferences and purchase satisfaction" (Bloch et al., 2003, p. 552). Ultimately, this tool proved to be a valid and reliable method to accurately measure consumers' responses to various visual stimuli.

Consumer research that focuses on cognitive and emotional response to visual and aesthetic product information or marketing stimuli can take many directions. One area in particular that relates to the retail service industry and hospitality is semiotics, or the study of signs and symbols as main components to communicative behavior (Mick, 1986). In a retail or service environment, signage can work as the primary vehicle for connecting the surrounding objects to human reactions. This process of displaying and viewing signs can act as a mechanism for creating, maintaining and altering meaning (Mick, 1986). In a restaurant, the menu and menu signage function as the primary method for delivering information to the consumer.

In a physical shopping environment, the atmosphere, which includes signage and other visual displays of information, can directly affect consumer emotions and their purchase behavior. These responses are thought to be mediated by cognition. In a study seeking to address the managerial implications regarding an alteration of visual stimuli to increase consumers' shopping behaviors and the processes by which digital signage influences perception of a mall environment, Dennis, Newman, Michon, Josko, Brakus, and Wright (2010) tested emotion-cognition theories by looking at the influence of digital signage on cognition and emotion. Digital signage was shown to have a direct influence on perception of the mall environment and positive affect, significantly influencing consumers' shopping behavior. Influence of signage on consumers' behavior was also

80

mediated by the consumers' perceptions of the surrounding mall environment and their emotions.

Research has also explored consumer response to product packaging and labeling. In one study, Rokka and Uusitalo (2008) used every-day drink products to test whether or not products packaged and labeled with green attributes would affect consumer choice when compared to identical products that did not have green packaging or labeling. Using an internet questionnaire, respondents were shown different product options with different packaging attributes and then asked to evaluate and choose the product that they would most likely purchase. Results indicated that product packaging was an important attribute for consumer choice, and that respondents clearly preferred the environmentally-friendly package alternative over the non-environmentally-friendly labeled product.

Comparatively, Onozaka and McFadden (2011) looked at the interactive effects of sustainable production claims such as organic, fair trade, or green, and location claims on perceived value conducted through a conjoint analysis. Building off of research that has shown consumers value product attributes that highlight where and how a product was produced, it was found that consumers do differentiate some production claims to a further extent if there was information on production location provided. Some consumers' perceived local to be a higher quality product, but preference for local went beyond simple product quality and included support for both the local economy and small farmers. A significant number of consumers were willing to pay a premium for the sustainable product claim of a reduced carbon footprint. Overall, the general consensus is that the more information a consumer has about a certain product or service, the more likely they are to purchase, pay more, and/or revisit.

Information about a product or a service can be delivered in several formats, and can range widely from the information contained on a product label and other marketing tools, such as advertisements, signage, company/product websites or portfolios, to prior/existing knowledge about a product (Cowley & Mitchell, 2003; Rao & Monroe, 1988; Srinivasan & Agrawal, 1988). Within a foodservice or food-retail setting, product information can include information about the establishment such as type, theme, and price, as well as the products being served. There are two primary means for foodservice operators to transmit information: via the store's atmospherics or the servicescape, and visual stimuli such as signage, menus, and product labeling. The next section focuses specifically on the topic of the menu in more detail.

2.15 THE MENU

As the key communication device between a restaurant's operations and the consumer, the menu acts as a crucial component to the success of a restaurant (McCall & Lynn, 2008). When consumers are making the decision to order from a menu their reasons for purchase differ greatly. Menu attributes that might affect consumers' willingness to purchase include the complexity of the item description, health factors, price, and portion size. The primary aim of a menu is to accurately display the available products and influence consumers' purchase decision. Just as a traditional advertisement uses specific language to deliver information about a product or brand with the intentions of helping the consumer make an informed choice, the menu also provides information about a dish so that the consumer can make a well-informed purchase decision. Not only is the language in both an advertisement and a menu intended to provide essential information to the consumer, it is also strategically designed to be memorable and to

82

entice the customer to purchase a specific product item over another (e.g. the more profitable item for the restaurant) (Lockyer, 2006).

The wording of a menu and how it is designed can be a critical component for a restaurant operation. A menu item with an overly complex description can be confusing and overwhelming to consumers. However, a menu item with a brief, dry description can leave a patron wanting more and wondering what the entrée consists of (McCall & Lynn, 2008). Carpio and Isengildina-Massa (2008) showed that with the simple listing of how a dish was cooked and where its ingredients originated from, price almost became irrelevant to the consumer, and in some cases didn't even need to be displayed. They found that some diners were actually willing to spend more for an item if they saw in the description that the dish contained local produce (Carpio and Isengildina-Massa, 2008).

Menu design generally refers to the arrangement and positioning of menu items on the menu card, labeling, and menu item description—ultimately designed to create an attractive document that provides information and directs a customer's attention to the most profitable item. Though the results of previous studies are inconclusive as to whether or not the placement of a menu item on a menu card can increase sales, there is empirical evidence that supports the association between item sales and the item's corresponding label and description (Ozdemir, 2012).

To determine the effects of perceptions of menu information on purchase behavior and perceptions of restaurant image, the following hypotheses were tested:

**H4:** Environmental consciousness has a positive, direct effect on the perception of menu information.

83

**H5**: The perception of menu information has a positive, direct effect on the purchase of a local food in an upscale casual restaurant setting.

**H6**: The perception of menu information has a positive, direct effect on perception of restaurant image.

**H7a**: The perception of menu information has a moderation effect on the relationship between environmental consciousness and the purchase of a local food in an upscale casual restaurant setting.

**H7b**: The perception of menu information has a moderation effect on the relationship between environmental consciousness and perception of restaurant image.

In order to test the hypotheses that were developed through a review of existing research and supported by theory, a conceptual model was developed for testing.

2.16 THE CONCEPTUAL MODEL

The conceptual model tested in this study (Figure 2.3) is an aggregation of the most prolifically used and well-established constructs and variables that have been empirically tested and identified in the related research, all of which were discussed at length in the literature review. The model builds off of existing theoretical frameworks, each one relating to environmental behavior and the attitude-behavior relationship. The proposed model should help contribute to the overall understanding of consumer behavior as it relates to engaging in sustainability initiatives, specifically the purchase of local foods. Using the research on environmental psychology, the most influential and prominent factors and variables were identified relating to pro-environmental consumer

84

behavior and the purchase of local foods. However, the barriers affecting this behavior are changing every day, and affect each consumer differently and on a personal level.

To identify every antecedent and barrier involving the engagement or participation in sustainable practices or a sustainable lifestyle would be an exercise in futility. By simplifying the constructs, the model should allow for adaptation to these changing barriers, and provide a solid platform for testing in the field. Based on Grob's (1995), Hines et al. (1987), and Kollmuss and Agyeman's (2002) fundamental research on pro-environmental behavior and the attitude-behavior gap, the proposed conceptual model will identify the antecedent variables and assess the relationship between attitudes and behaviors. Additionally, the model builds upon environmental behavioral theory that suggests pro-environmental behaviors are generally a result of internal factors, which range from attitudes, values, and knowledge, to personal and socio-demographics, and external conditions and situations, such as exposure to the presentation to information (like on a menu) or behavioral prompts (Guagnano, Stern, & Dietz, 1995; Hines et al., 1987; Schultz, Oskamp, & Mainieri, 1995).

2.17 CHAPTER SUMMARY

This chapter was comprised of a discussion on the theoretical frameworks guiding the current study and a comprehensive review of the literature supporting the current research. First was a review of the foodservice industry and its substantial effects on society, the economy, and the environment. After setting the stage for the breadth of the foodservice industry, a discussion on sustainability and local food followed. This included a review of the research that has been done on sustainability and foodservice, which has generally taken either an operations/management perspective or a consumer

85

perspective. A section on the study's theoretical framework followed. To conclude the chapter, a review of the variables and latent constructs that were under examination in the current study (Purchase Behavior, Perception of Restaurant Image, Environmental Consciousness, and Perception of Menu Information) was presented, along with the associated hypotheses derived from the literature review. Ending the chapter was the presentation of the conceptual model that was used to test the hypotheses (Figure 2.3 below). The next chapter presents the methodology used in the current study and the accompanying method of data analyses.
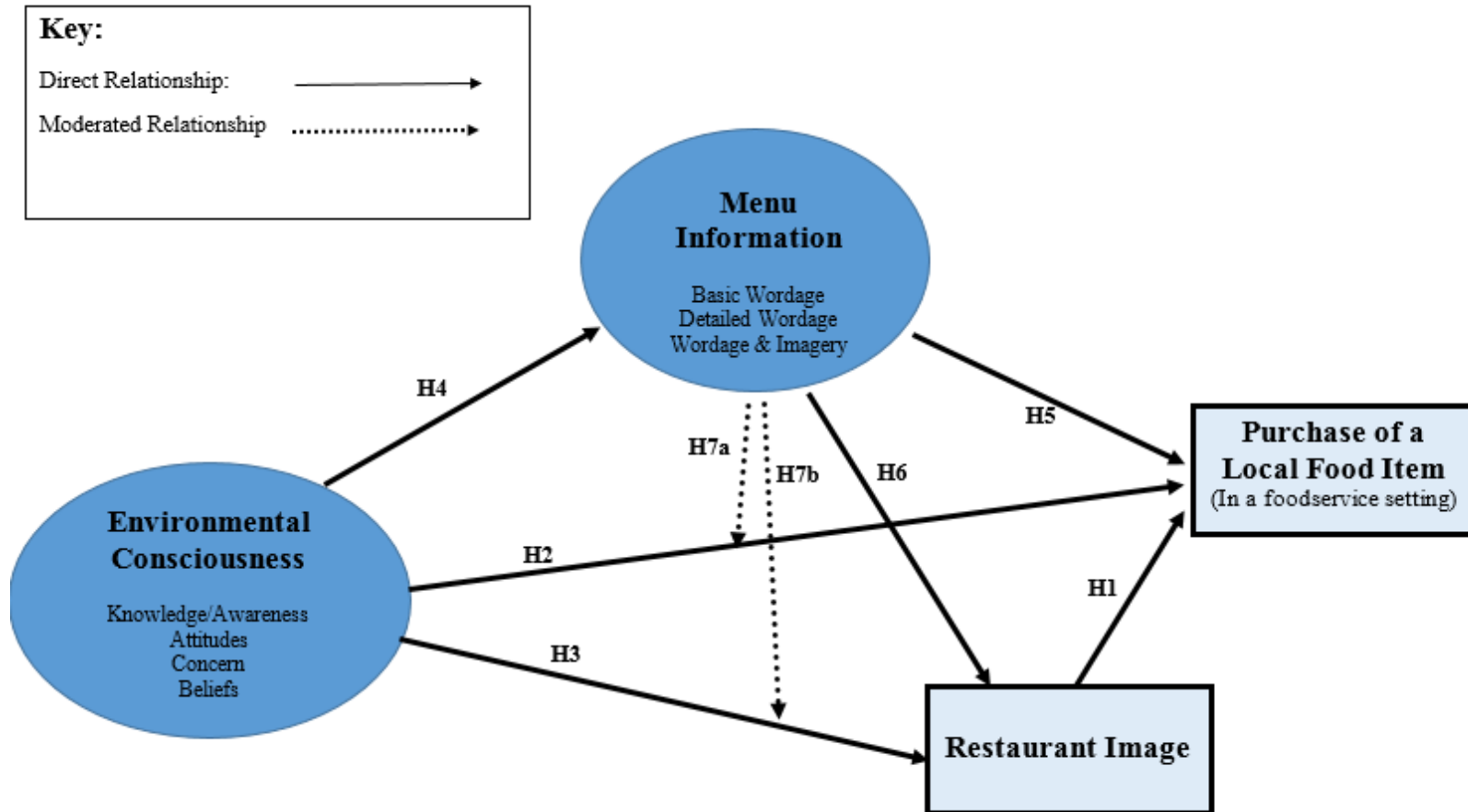
**Figure 2.3** Conceptual Model and Hypothesized Paths

# CHAPTER 3

## METHODOLOGY

As the overall goals of this study were to examine the relationship between environmental consciousness and the purchase of local food in a restaurant setting, and to determine if the use of local food descriptions on a menu could affect consumers' purchase behaviors and perceptions of restaurant image, a quantitative approach was taken. The following section describes the methodology used in this study to answer the following research questions:

1) Does environmental consciousness have an effect on consumers' purchase behaviors and perceptions of restaurant image in an upscale casual restaurant setting?

2) Does the perception of menu information have an effect on consumers' purchase behaviors and perceptions of restaurant image in an upscale casual restaurant setting?

3) Can the type of menu information, specifically the use of local food wordage and imagery, influence consumers' purchase behaviors and perceptions of restaurant image?

4) How are demographic variables, specifically gender, education, and income level related to purchase behavior in an upscale casual restaurant setting?

In order to answer the first two research questions, a conceptual model (Figure 2.3), which is based upon the theoretical frameworks previously discussed, was developed to test the hypothesized relationships under investigation. Due to the qualitative nature of the other two research questions, inferences were made using statistical comparisons of means and of percentages, proportions, and frequencies (Huck, 2004). The current study used a quasi-experimental research design utilizing data collected via a survey questionnaire. This chapter discusses the research design and the method of data analyses that were used to answer the specific research questions and achieve the primary research objectives: To investigate if an individual's personal level of environmental consciousness (an assemblage of attitudes, values, beliefs, and intentions regarding pro-environmental and sustainable practices) is actualized into concordant purchase behavior; And to determine if marketing the use of a single sustainable practice—specifically the use of local food on a menu—can influence a consumer's purchase behavior and their perceptions of restaurant image in an independent, upscale casual restaurant setting.

This chapter is broken down into four sections: first, a discussion of the quasi-experimental research design being employed in the study; second, a description of the development of the instrument and measures; third, a review of the sampling frame and procedure; and fourth, a discussion of the methods and procedures of data analyses used in the study. Before reviewing the components and characteristics of a quasi-experimental research design, including a description of the most common measures for experimental research and the types of analyses typically used, there is a description of the context (the particular restaurant) used in this research, where the quasi-experiment

89

took place. That will be followed by the description of the procedure used to administer the quasi-experimental treatment in this study.

3.1 STUDY SITE

The restaurant where the data for the current study was collected, and where the quasi experimental research took place, is described here. In addition to a description of the physical characteristics and specifications of the restaurant, there will also be a description of the restaurant's primary consumer. As discussed in more detail earlier, an independent restaurant within the upscale casual segment was chosen as the research site for this study. An independent restaurant was chosen for this study because of its relative flexibility and increased ability to incorporate sustainability practices into its operations compared to chain restaurants, and for its overall conduciveness to supporting an experimental endeavor that looks directly at purchase behavior and menu changes (. The upscale casual restaurant segment was selected for both its role in setting industry trends that can become adopted across multiple restaurant segments and because its primary consumer base (more affluent, educated, and environmentally conscious individuals) has many similarities with the target audience for adopting sustainability initiatives (DiPietro & Gregory, 2012; DiPietro et al., 2013; Hu et al., 2010).

The study restaurant was located in a mid-sized metropolitan city in the southeastern United States. The restaurant featured a modern-American cuisine with southern and Cajun influence. The restaurant also specialized in the service of unique and rare bourbon and craft cocktails. The lunch menu ranged in offerings from specialty sandwiches and salads to full entrees (typically pork, chicken, beef, or fish with two or three side dishes), while the dinner menu offered a variety of appetizers, salads, entrees,

90

side dishes, and dessert—all with a Southern, Cajun style cuisine. The restaurant building itself was positioned on one of the city's primary streets, situated in the downtown area. The restaurant had indoor seating for approximately 70 guests, which included a full-service bar that extended the length of the building. An additional 25 seats were available outside when weather permitted. The interior of the restaurant consisted of a large, exposed brick wall that ran the length of one side of the building, across from the bar. Reclaimed wood was used for the tabletops and bar shelving, while antique, restaurant related signage adorned the walls. Though it varied depending on the night and meal period, the front-of-house staff consisted of one or two hostesses, one or two bartenders, four to eight wait-staff, and a general manager.

Because of its location in the downtown neighborhood of a capitol city, the demographics of the customers who dined at the study restaurant were quite varied. In addition to serving state politicians and government employees (who dined there primarily during the lunch hours), the guests ranged from young professionals who either lived or worked in the downtown area, tourists, and other businesspeople who worked within walking distance. Also, because of its proximity to a handful of universities in the area, students, faculty, and staff dined at the restaurant as well. The study restaurant differentiated itself from the competition by offering a unique cuisine that featured high-quality food for an affordable price, full bar service, and outdoor seating.

Now that the setting for the study has been set, and the restaurant used in the current study described, a discussion on the quasi-experimental research design and the experimental procedure used in this study are discussed in the following sections.

91

## 3.2 EXPERIMENTAL RESEARCH

Experimental research design is a quantitative methodological process that works to identify the independent, dependent, and nuisance variables, and refers to a plan for assigning subjects to external conditions, or treatments, and measures the effects of the independent treatment variable on an outcome while controlling for variables that could have a confounding effect (Kirk, 2013; Lynn & Lynn, 2003). It is a method to assess cause-and-effect relationships specifically, allowing researchers to deduce through statistical inference what influence a treatment variable has on an outcome. Experiments generally fall into one of two types: true experiments or quasi-experiments (Creswell, 2014; Kirk, 2013, Lynn & Lynn, 2003). The primary difference between the two is that the subjects in a true experiment are randomly assigned to one of the individual variable treatment groups, whereas quasi-experiments do not use random assignment (Creswell, 2014; Kirk, 2013, Lynn & Lynn, 2003). Quasi-experiments are typically used when random assignment is not possible or practical to the study. Because it was not possible to randomly assign groups to the various treatments being tested due to the nature of the study design, this study used a quasi-experimental design to measure the effects of using local food menu descriptions on purchase behavior and perceptions of restaurant image.

Because of the ability to better ascertain a causal relationship between variables, and for the insight it provides to marketers to better understand the factors affecting consumer actions, experimental and quasi-experimental research methods are becoming increasingly important in marketing and hospitality research (Bagozzi, 1977; Lynn & Lynn, 2003). Though descriptive and exploratory research can provide important insight into consumer decision-making processes, these techniques hamper researchers' ability to

92

sufficiently draw conclusions about cause-and-effect relationships (Lynn & Lynn, 2003). Previous research has shown that behaviors are affected by many factors, and that attitudes and beliefs are only a weak predictor of how people behave in a given context (Lynn & Lynn, 2003). For its ability to control for variables and measure the direct effects of a given treatment on an outcome variable, researchers can assume that the relationship found within experimental design is causal (Bagozzi, 1977). However, it is important to note that it is always possible that factors outside of the experimenter's control can potentially confound the relationships under study.

## 3.3 EXPERIMENTAL PROCEDURE

The quasi-experiment utilized in this study is a between-subjects design. A between-subjects design typically involves comparing two or more treatment groups, examining the independent and simultaneous effects of the treatment variables on an outcome variable (Creswell, 2014). Between-subjects design is a widely used behavioral research method because it explores the effects of each treatment separately and in combination, providing a rich and multidimensional view (Creswell, 2014).

Within marketing and consumer behavior research, one of the desired goals of any experimental design is to create a scenario that most represents real world conditions and the actual marketplace, and not have it come across as being perceived as an experimental test site. In addition to encouraging the most natural purchase and consumption behavior, this strategy also helps to avoid potential social desirability bias, which could result from individuals becoming aware of their participation in a study relating to socially desirable acts. Social desirability bias can be defined as the scenario in which individuals taking a survey questionnaire have a tendency to respond to items in a

93

manner they deem more socially or politically desirable or acceptable, regardless of their true feelings about the issue (Kaiser, 1998 in Ewert & Galloway, 2009), and is a circumstance that is particularly common in environmental behavior research. A goal of any experimental design is make observations as they occur in a natural, real-world context, or to recreate a physical context that resembles a natural environment as closely as possible.

During the study, the restaurant's daily special menu was adjusted over a four week time frame to feature the specific use of local food and local food wording. After a week-long control period—where no treatment was applied and nothing on the daily special menu was altered from its original form, the second week (the first treatment week) featured the daily special menu items with basic local food descriptions and wordage, such as "Locally Grown" or identified by state-of-origin, such as "Grown in South Carolina." The second treatment phase (third week of the study) included a more detailed and unique menu item description, such as naming the ingredients by location or producer (e.g. "Freshly Grown Farms Lettuce," Columbia, SC). The final treatment phase (fourth week of the study) used a combination of both descriptive wordage, as used in the second treatment phase, and imagery, showing images of food items, family farmers, and the "South Carolina Grown" label (See Appendix A).

One of the primary methods for collecting data within an experimental design is through the use of a survey questionnaire (Creswell, 2014; Kirk, 2013). Though surveys alone cannot establish causality, they are important in exploring, describing, classifying, and establishing relationships among variables. The following section describes the development of the survey instrument that measured the particular variables in this study.

3.4 INSTRUMENT DEVELOPMENT

Survey data were used to measure and assess all the variables and constructs in the study: environmental consciousness, perception of menu information, perception of restaurant image, and purchase behavior. In order to reliably measure the latent and observed variables in the model for this study, a survey instrument was developed based upon previously tested and reliable measurement items and valid constructs (See Appendix B). The following section will discuss the constructs and measurement items from which the current instrument is adapted, starting with the dependent variable purchase behavior followed by the outcome construct of perception of restaurant image. Then a discussion of the independent constructs environmental consciousness and perception of menu information will follow.

The first outcome in the study, purchase behavior (Purchase), was assessed with one survey item, simply asking the respondent if he or she purchased one of the special local food items available on the unique daily special menu (e.g. "did you purchase an item from the daily special menu: yes or no"). This self-report information was used in the statistical analysis for the measurement of purchase behavior.

The second outcome in the conceptual model was the construct called perception of restaurant image (RI). There are several valid instruments that have been tested and proved reliable in measuring the primary attributes that comprise restaurant image, or the physical and operational components that ultimately work to form a general perception of restaurant brand image of a particular establishment (Han & Ryu, 2009; Lin & Mattila, 2010). The primary components that generally comprise restaurant image are its atmosphere and servicescape, service quality, quality of food, and overall satisfaction

95

with the experience (Bitner, 1992; Lin & Mattila, 2010; Ryu et al., 2012). The survey instrument in this study used six items to measure RI, and were adapted from valid and reliable measures used by Ryu, Han, & Kim (2008) and Ryu et al. (2012). Reliability coefficients for the construct in each of the above two studies were above the recommended cutoff value of $\alpha$ = .7 (Field, 2013) in both studies: .81 for Ryu et al. (2008) and .74 for Ryu et al. (2012). Respondents were asked to rate their level of agreement relating to a series of statements about the restaurant (i.e. food quality, menu variety, décor, etc.), measured on a 7-point, Likert-type scale where 1=Strongly disagree and 7=Strongly agree. One item was reverse worded to make sure the respondent was reading the items carefully and as a check against response error (Hinkin, Tracey, & Enz, 1997).

Where the previous section discussed the development of the items used to measure the outcomes in the conceptual model for this study, purchase behavior (Purchase) and perception of restaurant image (RI), the following section reviews the development of the independent constructs environmental consciousness (EC) and perception of menu information (Menu).

Environmental consciousness (EC) is defined as a conglomeration of an individual's environmentally-related attitudes, values, beliefs and norms, and existing knowledge, awareness, and concern for the environment (Grunert & Juhl, 1995; Kollmuss & Agyeman, 2002; Schlegelmilch, Bohlen, & Diamantopoulos, 1996; Stern, 2000). Eight specific items were adapted to measure environmental consciousness and were adapted from valid and reliable measures developed by Huang, Lin, Lai, & Lin, (2014) who used a 7-point, Likert-type scale where 1=Strongly disagree and 7=Strongly

96

agree to measure the construct. Reliability for the construct was $\alpha = .93$ (Huang et al., 2014. The measures used by Huang et al. (2014) were modified from previous scales that were originally intended to measure pro-environmental attitudes, concern, beliefs, intentions and behaviors used by Grunert and Juhl (1995), Krause (1993), Pickett-Baker and Ozaki (2008), and Schlegelmilch, Bohlen, & Diamantopoulos (1996). For the current study, respondents were asked to rate their level of agreement to several statements regarding environmental attitudes, beliefs and behaviors (e.g. "I feel frustrated and angry when I think of industries that pollute the environment") on a 7-point Likert type scale, where 1=Strongly disagree and 7=Strongly agree.

The second independent latent construct in the current study was called perception of menu information (Menu). To measure if consumers' specifically noticed the information on the daily special menu, and if it subsequently influenced their behavior, respondents were asked to rank their level of agreement/disagreement to five statements relating to the daily special menu used during the treatment periods (e.g. "this restaurant's menu provides adequate information" or "the wordage on this menu is interesting"). Responses were again measured using a 7-point Likert type scale where 1= Strongly disagree and 7= Strongly agree. The five items were adapted from an instrument designed to measure the perception of menu information in a foodservice setting as developed by Campbell, DiPietro, & Remar (2014), whose measurement for the construct had five items using a 7-point Likert-type scale.

Though the instrument for the current study was developed from previously-tested measurement items and constructs, it had not been tested in its current form in an operational, upscale casual restaurant setting. In order to determine if the measures were

97

reliable and to establish internal validity, the survey instrument needed to be pre-tested. The following section describes the pre-test procedure and pilot study, along with a description of the results.

3.5 INSTRUMENT PRE-TEST AND PILOT STUDY

After being reviewed for face validity amongst six hospitality faculty with expertise in the restaurant industry, the survey instrument was pre-tested in a week-long pilot study. In addition to helping establish content validity and internal reliability of the instrument, the pilot study also aided in the estimation of an expected response rate for the primary experiment and determination of the optimum time and duration to administer surveys in the restaurant environment. Conducting a pre-test also helped determine or identify unreliable measures, to aid in the ease of understanding and flow of the survey, and to clarify the most successful method of getting guests to complete the survey (Creswell, 2014).

For the pilot study, data were collected over five consecutive days, Wednesday-Sunday. These days were selected as they were initially specified as being the busiest days of the week for the restaurant. Guests were surveyed during lunch and dinner, from 12:30-2:30pm and 6:30-9:30pm, Wednesday, Thursday and Friday; Saturday from 6:30-9:30pm only; and Sunday from 12:30-2:30 only. In order to ensure the highest sample size needed for the pre-test, every guest that was exiting the restaurant was intercepted and asked to participate in the survey. During this time frame the researcher was positioned outside of the restaurant, adjacent to the exit. If the respondent agreed to participate in the survey, they were then asked if they had dined at the restaurant to ensure actual menu purchase behavior was being measured. If the respondent did not

98

dine, they were thanked for their willingness but asked not to participate. Approximately 5% to 10% of those who agreed to participate were ineligible to complete the survey.

Overall, there were 105 surveys completed out of 251 eligible individuals who were asked to participate, a 41% response rate, with 2 surveys incomplete, resulting in a sample size of $N =103$. In terms of demographic characteristics, the sample consisted of 57% males and 43% percent females. The majority of the sample was educated, having obtained either an undergraduate degree (31%) or a graduate degree (51%). Half of the sample made $70,000 or less, where 26% made $130,000 or above. After the descriptive statistics were analyzed, the data were checked for normality. Skewness values for restaurant image were mostly in a negative direction and highly kurtotic, with a vast majority of respondents showing a favorable perception of restaurant image (RI). Perception of menu information (Menu) and environmental consciousness (EC) showed a fairly normal distribution (Kline, 2005).

Once the descriptive data was analyzed and checked for normality, reliability for each construct was checked and then followed by an Exploratory Factor Analysis (EFA) to determine if the constructs under study were independent from one another and the variables accurately measured the intended constructs (Field, 2013). Data were analyzed using IBM's Statistical Package for the Social Sciences (SPSS) v.23. The first step in the analysis individually assessed each construct for its internal consistency reliability. Constructs were analyzed with each of their compositional measurement items included in the model and then checked for problematic items, or those that significantly reduced the Cronbach's alpha coefficient for the entire construct (Hinkin et al., 1997). SPSS provides an analytic feature that shows specifically what the Cronbach's alpha for the

construct would be if each of the items was removed from the model. Using this approach, reliability for each construct was assessed. Using a cutoff criteria of .7, any items that caused the Cronbach's alpha to drop below .7 were removed from the final instrument (Field, 2013). For the construct restaurant image (RI), one of the original six items proved problematic, and when dropped from the model yielded a reliability coefficient of α =.679. The problematic item that was confounding the construct's reliability was originally worded as "the price of the food does not correspond with its quality," and was reworded to say "the price of the food corresponds with its quality" in order to increase reliability in the full measurement model.

For the construct labelled Menu, all five items from the pre-test model were retained in the final model (α = .758). The construct EC consisted of eight items with a reliability coefficient of α = .86. However, one of the items showed evidence of poor fit, specifically low inter-item correlation and a low squared-multiple-correlation-coefficient, and was marked as problematic and examined in more depth in the proceeding factor analysis (Hinkin et al., 1997).

After the reliability was assessed and the weak items removed, an EFA was conducted to see how each of the items uniquely measured the independent variable constructs and to ensure that each item was independently measuring the unique aspect of the construct that it was intended to measure initially (Field, 2013; Hinkin et al., 1997). Though EFA is more appropriate for larger sample sizes, a sample size of $N = 50$ is generally regarded as a sufficient minimum (de Winter, Dodou, & Wieringa, 2009). Furthermore, an examination of the correlation matrix displayed adequate model fit, and

100

a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (.757) showed that sample size was sufficient and the data were appropriate for factor analysis (Sharma, 1996).

The next step in the EFA was to determine a sufficient factor solution and employ a rotation method to aid the interpretation. Generally there are two types of rotation methods used in EFA: orthogonal and oblique rotation (Field, 2013). An orthogonal rotation is typically used if the constructs in the study are likely to be unrelated and uncorrelated, whereas oblique rotation is used when the constructs are believed to be somewhat related and might be correlated (Field, 2013; Sharma, 1996). Because two of the constructs in this study, RI and Menu, had related questions and were possibly correlated, an oblique rotation (Oblimin specifically) was used, with a Principal Axis Factoring (PAF) extraction method to estimate the communalities (Sharma, 1996). Factors with eigenvalues greater than 1 were retained, and values with loadings less than .4 were purposefully suppressed (Field, 2013; Hinkin et al., 1997).

The final analysis resulted in a five-factor solution, with some items showing moderate cross-loading. Menu had significant, independent factor loadings that formed a unique construct. However, the items for RI loaded into two different factors. This was attributed to the fact that certain items for restaurant image included wording that overlapped with some of the measures from the Menu construct. For example, the item "this restaurant offers a variety of menu options," a measure of RI, cross-loaded with the Menu construct because it pertained to the menu. For the construct EC, the item that was suspected as problematic in the reliability assessment proved to be an inadequate measure and was therefore dropped from the final model, leaving the construct with seven total items.

101

The pilot study also helped to inform the methodology by providing information on the most effective times and days to collect data. Once the pilot study was completed, the sampling frame was established in more detail. The following section discusses the sampling frame and method of data collection used in the current study.

3.6 SAMPLING AND DATA COLLECTION

After conducting the pre-test pilot study, new data were collected to analyze the relationships between the variables in the study and to assess the influence of using local food menu information on purchase behavior and perception of restaurant image. A revised survey questionnaire was administered to a new sample population dining at an upscale casual restaurant in the southeastern United States, the same site where the pilot study took place. The sampling frame occurred over a four week time period, and consisted of a one-week control period and three treatment weeks for the quasi-experiment. Sampling took place during the height of the two primary meal periods the restaurant experienced: lunch and dinner. Based upon information gleaned from the pilot-study, data collection for the dinner periods were shifted back one half hour later into the evening to correspond with the peak in guest amounts. Data were collected over a five-hour time period Tuesday-Friday during the hours of 12:30-2:30pm for lunch and 7:00-10:00pm for dinner, Saturday 7:00-10:00pm only, and Sunday from 12:30-2:30pm only.

In order to acquire a robust sample size adequate enough for Structural Equation Modeling (SEM), every guest who exited the restaurant was asked to participate in the study. The researcher was positioned at a table directly adjacent to the entrance/exit of the test restaurant. Respondents were kept anonymous and surveys were completed in direct observation of the researcher. Survey questionnaires were administered via paper

102

affixed to clip-boards. Once a survey was completed, it was placed in a secure envelope, and following data collection, filed and locked in a secure office. In order to increase participation rates, each participant was offered the chance to enter a weekly drawing for a $25 gift card to the restaurant upon successful completion of a survey. Respondents who wanted to participate in the reward drawing had their names and email address added to a list entirely separate and unrelated from their survey to ensure anonymity per the criteria of the Institutional Review Board of the researcher's university.

Before taking the survey, each respondent was asked if they had ordered and eaten food. If they had not eaten while at the restaurant, or only had drinks, they were thanked for their willingness to participate and asked not to complete a survey due to their ineligibility to participate in the study. Respondents were also asked if they had previously completed a survey, and if so they were requested not to complete another. The number of eligible respondents who declined to take the survey was logged to calculate response rate. Surveys were coded by meal period, day of the week, and for each different menu treatment that occurred. To allow for proper data analysis using SEM and to detect any significance in the data, an adequate sample size was needed. There are varying recommendations for estimating a sample size for SEM, with some research suggesting a ratio of 15:1 for observations per variable or parameter (Stevens, 2002), with others suggesting a ratio of 10:1 as sufficient (Kline, 2005). The instrument contained approximately 30 questions/variables. Therefore, based on the aforementioned recommendations, the goal was to obtain a minimum of 450 total responses, or about 110 per week during the quasi-experimental design period.

103

After the survey data was collected, the statistical analyses were completed. The following section describes the type of analyses that were used in the current research.

3.7 DATA ANALYSIS

In order to answer the research questions for the current study, multiple statistical procedures were used to analyze the data. The first part of the analysis began with a profile of the sample, followed by a summary of the descriptive statistics, frequencies, means, and standard deviations for all the variables in the model. The second part of the analysis involved testing the conceptual model and the hypotheses under investigation. Because the nature of the dependent variables in the conceptual model varied, Purchase was an observed behavior with a dichotomous outcome and RI was a latent variable construct, two different statistical procedures were conducted. The first part of the analysis used logistic regression, preceded by an Exploratory Factor Analysis (EFA) to test hypotheses H1, H2 and H5. Then, to test hypotheses H3, H4, H6 and H7a-b, the second procedure followed Anderson & Gerbing's (1988) recommended two-step approach to SEM, where a measurement model was first estimated, followed by measurement of the structural model. This phase of the analysis also assessed each construct's reliability and validity using Cronbach's alpha and average variance extracted (AVE). The following sections describe the two different statistical procedures and analyses used to test the hypotheses in the proposed conceptual model.

3.7.1 LOGISTIC REGRESSION ANALYSIS: H1, H2, AND H5

In order to examine the relationship between the independent, latent variable constructs of RI, EC, and Menu on consumers' actual purchase behavior, logistic regression procedures were utilized. Because of the dichotomous nature of the outcome

variable purchase behavior (e.g. did you purchase an item from the daily special menu: yes or no), and continuous independent variables, logistic regression was the appropriate statistical procedure. Though logistic regression has been a long-standing statistical procedure in medical disciplines and other behavioral research, its use in the social sciences is becoming more common (Huck, 2004; Peng, Lee & Ingersoll, 2002).

The first step of the logistic regression procedure was to evaluate the overall model. This omnibus test entailed a comparison of the proposed logistic model to a null model (also known as an intercept-only model), which contained no predictor variables. This null model was used as a baseline for comparison to see if the proposed model differed from or improved upon the null model (Peng et al, 2002). In SPSS, the null model is referred to as 'Block 0' (or the beginning block), and is compared to the proposed logistic model ('Block 1') by analyzing the output values given in the Omnibus Test of Model Coefficients. A resulting chi-square statistic and its corresponding $p$-value showed whether or not the proposed logistic model actually varied statistically from, or significantly improved upon the null model, and dictated whether or not further analysis should be conducted. The most commonly used or reported statistic in the logistic regression procedure is the odds ratio (or OR) for each independent variable (Field, 2013; Huck, 2004). This ratio value is analogous to an $r^2$ statistic seen in regression analysis as it is a measure of the strength of the relationship between an independent variable and a dependent variable (Huck, 2004). The OR is then tested for statistical significance, commonly through the use of a Wald test (which gives a chi-square statistic and is significant at the $p < .05$ level), and can be extrapolated to infer a likelihood or probability of the dependent variable occurring given its relationship to the corresponding

105

independent variable. Before the logistic model was run, an EFA was run to ensure the constructs under investigation were validated and demonstrated internal reliability. After the logistic regression portion of the statistical analysis was completed, SEM was used to analyze the remaining relationships in the conceptual model, specifically between environmental consciousness and perception of menu information with perception of restaurant image. The following section reviews this procedure.

3.7.2 STRUCTURE EQUATION MODELING (SEM): H3, H4, AND H6

Because this study examined the relationship between latent and observed variables as specified by substantive theory, structural equation modelling was the most appropriate and preferred statistical procedure. A structure equation model, or structural equation modeling (SEM), is a statistical procedure that "describes the dependence among a set of latent variables in a path diagram. [And] the path diagram portrays the relationships among those latent variables" (Liu, 2014, p. 269). As Byrne (2001, p. 3) describes, SEM "conveys two important aspects of the procedure: (a) that the causal processes under study are represented by a series of structural (i.e., regression) equations, and (b) that these structural relations can be modelled pictorially to enable a clearer conceptualization of the theory under study. The hypothesized model can then be tested statistically in a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data."

SEM generally uses two types of models: a structural model, which defines the relationship amongst presumably unobserved latent variables that are measured using other observed variables, and a measurement model, similar to a factor analysis in that variables are viewed as factors underlying observed variables (Liu, 2014). The factor

analysis/measurement step is first, and is different in that it takes a confirmatory approach to data analysis rather than exploratory (Anderson & Gerbing, 1998; Byrne, 2001). Overall model fit (for both measurements) is evaluated using the following fit indices: a chi-square statistic ($\chi^2$), with the closer a value approaches zero the better the fit; goodness-of-fit (GFI), where values greater than or equal to .9 reflect good fit; the root mean square error of approximation (RMSEA), with values less than or equal to .06 considered for adequate fit; along with the normed fit index (NFI) and comparative fit index (CFI), with good fit indicated by values greater than or equal to .90 and .95 respectively (Hair et al., 2006; Hu & Bentler, 1999; Kline, 2005). Hypotheses are supported if the directional relationships are significant at the $p <.05$ level.

As Bagozzi (1977, p.210) notes, "classical experimental method and traditional analysis of variance and regression models have several shortcomings which arise as a result of (1) the assumptions made in both the experimental method and data analytic procedures, (2) certain omissions with respect to the representation of cause and effect, and (3) limitations in the overall approach for diagnosing flaws in any particular application." Because of these shortcomings, Bagozzi (1977) recommends using SEM for analyzing experimental research when possible. Compared to a regression model which assumes that the experimental treatment has been perceived correctly and that it has produced the intended effect, a structural or causal model explicitly demonstrates the impact of the independent variable reflected in the manipulation check (Bagozzi, 1977).

3.7.3 CONFIRMATORY FACTOR ANALYSIS

In order to test the hypothesized relationships using SEM, the two-step approach recommended by Anderson & Gerbing (1988) was employed. The first step in this

107

approach is the use of a Confirmatory Factor Analysis (CFA) on the latent constructs, EC, RI, and Menu, with a subsequent measurement model that includes all of the latent variables and their observed measures. CFA also evaluates the measures to confirm validity within their associated constructs, as well as verifies that the latent constructs differ significantly from one another. Because of its robustness as an estimation technique, Maximum Likelihood (ML) was used for parameter estimation in both the measurement model and the structural model (Byrne, 2001; Kline, 2005).

Before the confirmatory factor analysis was administered to test the measurement model, internal consistency and reliability were checked and verified using Cronbach's alpha on the standardized items for each of the proposed constructs. In order to achieve sufficient internal validity and reliability, alpha values with a minimum of .70 were used as the criterion (Hinkin et al., 1997; Nunnally, 1978). Measurement item correlations were inspected for each construct and identified as positive and significant for the initial review of internal consistency (Anderson & Gerbing, 1988).

Convergent and discriminant validity were tested by calculating the average variance extracted (AVE) and through a comparison of the correlation matrix (Hair, Black, Babin, Anderson, & Tatham, 2006). An AVE of .50 or greater was used as the minimum criteria for all latent variables to indicate convergent validity and reliability, and AVE greater than the corresponding squared correlation coefficients was used to indicate discriminant validity (Anderson & Gerbing, 1988; Fornell & Larcker, 1981).

Each individual CFA model was improved based upon criteria such as regression weight significance, standardized residual covariances and modification indices (Byrne, 2001). As suggested by Bollen (1989) and Kline (2005), standardized regression

coefficients of .40 or higher were considered "moderate" and used in the analysis, with standardized residual covariances of 2.5 or lower used as adequate measures (Byrne, 2001; Joreskog and Sorbom, 1988). Modification indices less than 10 were used as cutoffs for fit improvement when improving the measurement model (Campbell et al., 2014). After completing the measurement model, a structural model was specified in order to test the hypothesized relationships between each of the proposed constructs in the study. The same fit indices: $\chi^2/df$ ($p < .05$), GFI ($\geq .90$), (CFI ($\geq .95$), NFI ($\geq .90$), and RMSEA ($\leq .06$) were used as criteria to evaluate model fit (Hair et al., 2006; Hu & Bentler, 1999; Kline, 2005).

The last component of the model testing procedure looked at the moderation effect of perception of menu information on the relationship between environmental consciousness and purchase behavior (H7a), and on the relationship between environmental consciousness and perception of restaurant image (H7b). Additionally, a post-hoc test for mediating effects was conducted after the tests for a moderation effect.

3.7.4 MODERATING EFFECTS OF PERCEPTION OF MENU INFORMATION: H7A-B

The mediator-moderator analysis provides researchers with the ability to better observe or explain the relationship between an independent and outcome variable (Ro, 2012). Though the terms moderator and mediator are at times confused as being the same or used interchangeably, they are different and typically function at three levels: conceptual, strategic, and statistical (Baron & Kenny, 1986; Ro, 2012). The difference between moderating and mediating variables and how to test for the effects of each are discussed next.

109

Moderators function as a variable, either quantitative—such as level of agreement or satisfaction—or qualitative—like sex, race, or gender—that affects the strength or of the relation between an independent/predictor variable and a dependent/criterion variable (Baron & Kenny, 1986). Moderating variables typically affect zero-order correlation, which is the relationship between two variables that ignores the influence of other variables in prediction.

There are different ways to test for moderating effects, but they are most commonly tested for correlational influence using path analysis (Baron & Kenny, 1986). Moderators typically operate at the same level as predictor variables in regards to their role as causal antecedents, and always function as independent variables. Statistical analysis occurs in the measurement of testing the differential effect of the independent variable on the dependent variable as a function of the moderator.

In the context of hospitality research specifically, Ro (2012) provided a guide to testing moderating relationships using both regression and SEM analysis. In the regression approach, in step 1 the independent variable ($X$) and the moderator ($Mo$) are entered into a model as predictors of the outcome variable ($Y$) (Ro, 2012, p. 954) (See Figure 3.1). Next, in step 2, an interaction term that represents the moderator effect, which is the product of the independent and the moderator variables ($X \times Mo$), is added: "If the specified interaction term explains a statistically significant amount of variance in the outcome variable, and accordingly the change in $r^2$ for the interaction term added model is statistically significant, a moderator effect is present" (Ro, 2012, p. 954).
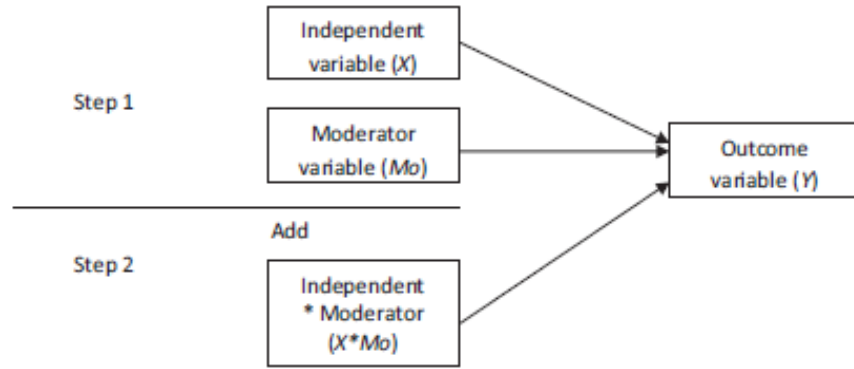
**Figure 3.1** Statistical Model of a Moderating Effect (Ro, 2012, p. 954).

The SEM approach uses a constrained model that is compared to an unconstrained model. The models are then compared for overall model fit, measured by a chi-square difference test (Byrne, 2001; Kline, 2005). Ro (2012) also specifies some of the main issues that need to be considered when testing for moderator effects: statistical power, measurement errors, removing variables, and artificial grouping.

To test for the potential moderating effect of Menu on the relationship between EC → RI (H7b), a multi-group analysis was completed by creating two distinct subgroups from the five questions relating to how customers perceive the local food wordage on the daily special menu (e.g., "I noticed the local-food wordage on the menu"). The five questions, measured on a 7-point Likert scale where 1= "Strongly disagree" and 7 = "Strongly agree," were combined to create a composite variable, and then respondents were divided using a median split. Using a median-split, respondents at or above the median were included as part of a 'HIGH' perception group ($N = 238$), while respondents factoring below the median were placed into a 'LOW' perception group ($N = 274$). Structural invariance testing was then completed by first testing each group independently for fit, along with creating a nested model with both groups being

111

tested simultaneously (Byrne, 2001; Campbell et al., 2014).  Then, a second nested group model was created and constrained as equal across the two, newly created subgroups (HIGH & LOW). Constraints were placed on all the factor loadings, factor variances, factor covariances, and error covariances prior to completion of the chi-square difference test, looking for the fully constrained model to reflect good overall fit (Byrne, 2001; Campbell et al., 2014). Then, each individual path was allowed to be estimated freely, keeping all other constraints as equal between the groups and the chi-squares noted for each new test (Campbell et al., 2014). Next is a review of how mediating effects are tested.

Mediating variables generally function to the extent by which they account for or explain the relationship between an independent variable and dependent variable: "mediators explain how external physical events take on internal psychological significance. Whereas moderator variables specify when certain effects will hold, mediators speak to how or why such effects occur" (Baron & Kenny, 1986, p.1176) (See Figure 3.2). As specified by Baron and Kenny (1986), a variable is considered a mediator when: a) variations in levels of the independent variable significantly account for variations in the specified mediator (path *a* in Figure 3.2), b) variations in the mediator significantly account for variations in the outcome variable (path *b* in Figure 3.2), and c), when a previously significant relationship between the independent and dependent variables (path *c* in Figure 3.2) becomes insignificant when paths a and b are controlled for. Perfect mediation, though rare, occurs when the independent variable has no effect on the outcome variable when the mediator is controlled for. Mediating variables are typically introduced when there is a weak or inconsistent relationship between the

112

independent variable and the dependent variable that is not expected (Baron & Kenny, 1986).
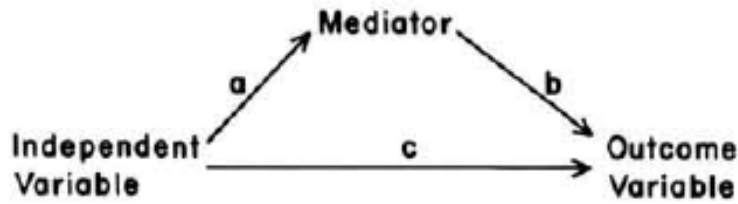


**Figure 3.2**. Model of Mediation (Baron & Kenny, 1986, p. 1176)

There are also different statistical methods to test for mediating variables. For example, in an analysis of variance (ANOVA), the mediator effect can be represented as an interaction between an independent variable and a factor that specifies conditions for its operation (Ro, 2012). Another way to test for a mediating relationship is to test for the difference in correlation coefficients resulting from three regression equations: 1) the mediator variable regressed (or acting as the criterion variable) on the independent variable, 2) the direct relationship between the independent variable and the dependent variable and 3) regressing the dependent variable on both the mediator and the independent variable (Baron & Kenny, 1986).

When testing for mediating effects using regression, Ro (2012, p. 956) specified that first, the regression model should show that the independent variable is a significant predictor of the outcome variable ($X{\rightarrow}Y$ in Figure 3.3) in order to establish that there is an effect to mediate in the first place (see path *c* in Fig. 3.3A). The second regression model should show that the independent variable is a significant predictor of the mediator ($X{\rightarrow}Me$) to establish Path a (see Fig. 3.3B) in the mediation chain. The third regression

113

model should contain both the independent and mediator variables entered simultaneously with the outcome ($X, Me \rightarrow Y$).
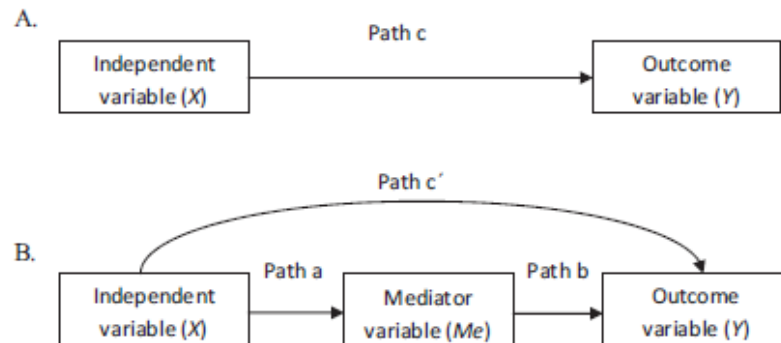


**Figure 3.3** Statistical Model of a Mediator Effect (Ro, 2012, p. 956)

As SEM is basically a series of multiple regression equations analyzed simultaneously, testing for mediation effects in SEM is logically the same as it is for regression. To test if there is a significant mediating effect, the fit of the independent→mediator→outcome model (Figure 3.3B) is compared to the direct path from the independent variable and dependent variable when the model is both constrained to zero and unconstrained. For a significant mediating effect to be found, the fit of the $X \rightarrow Me \rightarrow Y$ model needs to be assessed first, when the $X \rightarrow Y$ path is constrained to zero, and then when the path is not constrained. If a mediation effect is present, then the constrained model should not improve overall fit, suggesting the two models do not differ significantly.

Lastly, a bootstrapping method specifically tests the relative size of the mediated (indirect) path versus the direct path. If the mediated path is significantly greater (at the $p < .05$ level) than that of the direct path, then it can be reasonably concluded that a significant mediation effect is present (Cheung & Lau, 2008). Similar to moderating

114

effects, there are also issues to consider when examining mediation effects, and include the decision to use regression versus SEM, omitted or confounding variables, causation, and research design (Ro, 2012). This study followed the bootstrapping procedure using a Maximum Likelihood (ML) technique as recommended by Cheung & Lau (2008).

This section concludes the review of the statistical procedures and tests used in this study to examine the relationship and effects between latent constructs and observed variables. Hypothesis H1, H2, and H5 were tested using logistic regression to examine the relationship between a series of independent constructs (RI, EC, and Menu) on the dichotomous outcome of purchase behavior (Purchase), where H4, H5, H6, and H7a-b tested the structural relationship between the latent constructs EC and Menu on RI. The last section of this chapter addresses the statistical procedures and tests that were used to answer the qualitative nature of the last two research questions: if the specific type of visual stimuli used on the menu, specifically local food wordage, imagery, or the two combined, can influence consumers' purchase behavior and perceptions of restaurant image; and how demographic variables, such as gender, age, education, and income level relate to purchase behavior and perception of restaurant image.

3.7.5 QUALITATIVE VARIABLES IN THE STUDY: RESEARCH QUESTIONS 3 AND 4

The first two research questions in this study explored the relationship amongst latent and observed variables and constructs analyzed via conceptual modeling and hypothesis testing. In the third and fourth research questions, the relationship between categorical (qualitative) variables are examined for their influence on purchase behavior and perception of restaurant image. This section begins by looking at whether or not the type of menu treatment, specifically the use of basic wordage, descriptive wordage, or

115

descriptive wordage combined with imagery, influenced purchase behavior and restaurant image. The section concludes with a discussion on the methods used to analyze the relationship between demographic variables, specifically gender, education, and income level, and their relationship with the purchase of a local food item from the daily special menu.

To explore if the specific type of menu treatment had a unique effect on purchase behavior and perception of restaurant image, two different statistical procedures were utilized based upon the characteristic of the outcome variables under study in this analysis: a Pearson chi-square test for the categorical outcome variable of Purchase, and one-way analysis of variance (ANOVA) for the continuous outcome RI (Huck, 2004). First, for Purchase, a Pearson chi-square test, or better known simply as a chi-square test (Field, 2013; Huck, 2014), was used to examine its relationship between the types of menu treatment used. Because both the independent and dependent variables in this case were categorical, the analysis looked at the differences between proportions, percentages, and frequencies of responses, instead of differences in means, so that inferences could be made (Huck, 2004). More specifically, an independent-samples chi-square test was used as the statistical procedure that involved comparing four groups (one for each menu treatment and the control) in respect to a dichotomous response variable (did you purchase an item from the special daily menu: yes or no) (Huck, 2004). A chi-square test ultimately yields a chi-square statistic ($\chi^2$), which is assessed for significance with a *p*-value ($< .05$) The chi-square test was conducted by computing cross-tabulations in SPSS, then displaying the results in a contingency table to aid the interpretation (Field, 2013; Huck, 2004).

The other dependent variable that was examined for its relationship to the types of menu treatment was RI. However, RI was measured using responses to a Likert-type scale and considered a continuous variable, thus making an ANOVA the proper statistical technique to analyze the data for the last component of the third research question (Huck, 2004). A one-way ANOVA (or simply ANOVA) is used when there is a single continuous dependent variable, and a single, categorical independent variable that has two or more groups or levels that are independent from one another (Huck, 2004). The test is intended to determine if a statistical difference exists between the groups in the independent variable by comparing and contrasting their means (Huck, 2004). The test yields an $F$-statistic and its $p$-value. If the statistic is significant ($p < .05$), a post-hoc analysis is conducted to determine where exactly the differences are and which variables statistically differ from one another. If the initial, omnibus test shows no significance then a post-hoc test is unnecessary (Huck, 2004).

The last research question in the study explored the relationship between demographic predictors and the outcome variable purchase behavior. Specifically, gender, education, and income level were the four demographic variables examined for their relationship with purchase behavior. Because of the categorical nature of both variables, a chi-square test was used to examine the relationship between each demographic variable and purchase outcome.

This concludes the review of the methods and statistical analyses used to answer the research questions that guided the current study.

3.8 CHAPTER SUMMARY

As Kirk (2013) explained, research is conducted for the following purposes: 1) to explore, 2) to describe or classify, 3) to establish relationships, or 4) to establish

117

causality. Using a quasi-experimental research design as described above, this study examined the relationships between two sets of independent and dependent variables: the causal effects of restaurant image, environmental consciousness, and the perception of menu information on consumer purchase behavior, and the effect of environmental consciousness and perception of menu information on restaurant image. In order to answer the research questions and test the hypotheses in the model, logistic regression and SEM analysis were used. Chapter 4 describes the results of the experiment and data analyses in detail. Chapter 5 concludes with a detailed discussion of the results compared to findings from previous research, provides limitations, implications for academics and practitioners, and ends with a discussion on recommendations and opportunities for future research.

# CHAPTER 4

## RESULTS AND FINDINGS

This chapter presents the results and findings from the data analyses used to answer the specific research questions guiding this study. The primary objectives of this study were to examine the relationships between the independent constructs environmental consciousness (EC) and the perception of menu information (Menu) on the outcomes of purchase behavior (or the purchase of a local food item from the daily special menu) (Purchase) and perception of restaurant image (RI). Another goal of this this study was to determine if the use of varying local food descriptions on the daily special menu, specifically the use of basic wordage, descriptive wordage, and a combination of descriptive wordage and imagery, could affect consumers' purchase behavior (Purchase) and perceptions of restaurant image (RI). Demographic characteristics gender, education, and income level were also examined for their relationship with the outcome purchase behavior. Based upon the prominent attitude-behavior theories the Theory of Planned Behavior (TPB) and the Values-Beliefs-Norms (VBN) theory, a conceptual model was developed and hypotheses tested in order to address the specific research questions and primary objectives of the study. Data were collected via survey using a quasi-experimental design whereupon the daily special menu in an upscale casual restaurant was manipulated to feature three different treatments relating to local food descriptions.

119

The results and findings from the analyses are presented in this chapter. The first section describes the demographic profile of the sample and the descriptive statistics, followed by sections on the results of the logistic regression procedure and SEM analysis used to test the hypotheses. The chapter concludes by describing the results to the effects of the menu treatments on Purchase and RI, and how demographic characteristics related to Purchase.

## 4.1 SAMPLE STATISTICS AND DEMOGRAPHIC PROFILE

Over the four week sampling frame, a total of 1,126 eligible individuals were asked to participate in the study by completing a survey questionnaire. 545 respondents completed a survey, yielding a study response rate of 48%. 13 of the surveys were only half completed though, rendering them unusable for any analyses. Additionally, because a primary goal of this study was to examine the effects of three independent variable constructs, EC, Menu, and RI, on purchase behavior specifically, any survey that left the Purchase response blank was excluded from the preceding analyses. 20 surveys left the purchase response blank, leaving a total sample size of $N = 512$. Before any statistical procedures were conducted, occurrences of missing data were found and replaced using the series mean as the imputing method (Downey & King, 1998). After the data set was cleaned and prepared for analysis, a profile of the sample population was created followed by a review of the descriptive statistics and frequencies of the variables in the study. The remaining analysis included an assessment of the validity and reliability of each constructs and the model testing, followed by Logistic Regression and SEM analyses to test the hypotheses.

Descriptive information of the study sample is presented in Table 4.1. Over the four week time frame, a total of $N = 512$ surveys were completed and used for the analyses. 129 surveys were completed in week 1 (25% of the total), followed by 132 (26%) in week 2, 119 (23%) for week 3, and 132 (26%) in the final week 4. Slightly more surveys were completed during the dinner meal period with 278 (54%), compared to the lunch meal period which had 234 (46%).

**Table 4.1** Sample Profile

| Demographic Characteristic | Frequency ($n$) | Percentage (%) |
|---|---|---|
| *Gender* | | |
| Male | 249 | 49 |
| Female | 260 | 51 |
| | | |
| *Age* | | |
| 18-25 | 89 | 17.4 |
| 26-35 | 179 | 34.9 |
| 36-45 | 89 | 17.4 |
| 46-55 | 79 | 15.4 |
| 56-65 | 46 | 8.9 |
| Above 65 | 21 | 4 |
| | | |
| *Residence* | | |
| In State | 366 | 71.5 |
| Out-of-State | 141 | 27.5 |
| | | |
| *Annual Yearly Income* | | |
| $39,999 or less | 126 | 24.6 |
| $40,000 - $69,999 | 132 | 25.8 |
| $70,000 - $99,999 | 85 | 16.6 |
| $100,000 - $129,999 | 52 | 10.2 |
| $130,000or above | 98 | 19.1 |
| | | |
| *Education Level* | | |
| Less than high school | 2 | .4 |
| High school degree | 23 | 4.5 |
| Some college | 66 | 12.9 |
| Undergraduate degree | 208 | 40.6 |
| Graduate degree | 211 | 41.2 |

As Table 4.1 shows, the respondents were split nearly evenly in terms of gender (49% male and 51% female). The majority of respondents (35%) were between the 26-35 years of age, where the other two most frequent age groups were 18-25 and 36-45, each with 17.4%. Overall, 70% of the respondents were aged 45 or younger. 71.5% of the respondents resided within the state where the study took place, where the majority of the remaining participants lived in a neighboring state and were mostly tourists or in town for business. Over 80% the sample had received a higher education degree, with roughly 40% having either an undergraduate or graduate degree. In terms of annual income, 50% made less than $70,000 (25% made $39,999 or less and 26% made between $40,000-$69,999). Nearly 30% of the respondents made over $100,000 per year. Given the location the study site (in the downtown neighborhood of a capital city) and its position as a restaurant in the upscale casual segment, these demographic characteristics were somewhat expected. The results of the descriptive statistics for the variables used in the study are presented next.

4.2 DESCRIPTIVE STATISTICS

The variables used in the analyses were then checked for their normality and distribution, along with other basic descriptive statistics including means and standard deviations (See Table 4.2). Overall, the data followed a fairly normal distribution, though there were certain items that had skewness and kurtosis values greater than the recommended cutoff of $\pm 1$ (Huck, 2004). However, because of the larger sample size and estimation techniques used in the analysis, the data was considered robust to these violations of normality (Byrne; 2001; Edgell & Noon, 1984; Speed, 1994). Of all the variables in the data set, the ones that showed the highest levels of skewness and kurtosis,

122

and demonstrated the least amount of variation in responses, related to restaurant image

(RI).

**Table 4.2** Descriptive Statistics

| Variable | M* | SD | Skew. | Kurt. |
|---|---|---|---|---|
| *Restaurant Image** | | | | |
| RI1 | 6.39 | 1.003 | -2.631 | 8.862 |
| RI2 | 5.58 | 1.253 | -.961 | .818 |
| RI3 | 6.24 | 1.069 | -2.022 | 5.094 |
| RI4 | 5.99 | 1.196 | -1.607 | 2.978 |
| RI5 | 5.82 | 1.895 | -1.624 | 1.275 |
| RI6 | 6.23 | 1.238 | -2.540 | 7.269 |
| | | | | |
| *Perception of Menu Information** | | | | |
| Menu1 | 5.84 | 1.197 | -1.168 | 1.404 |
| Menu2 | 5.75 | 1.291 | -1.101 | .632 |
| Menu3 | 5.49 | 1.256 | -.411 | -.636 |
| Menu4 | 5.22 | 1.522 | -.712 | -0.39 |
| Menu5 | 4.95 | 1.704 | -.560 | -.541 |
| | | | | |
| *Environmental Consciousness** | | | | |
| EC1 | 5.35 | 1.664 | -1.002 | .272 |
| EC2 | 5.00 | 1.677 | -.621 | -.296 |
| EC3 | 4.54 | 1.737 | -.357 | -.722 |
| EC4 | 4.40 | 1.680 | -.232 | -.714 |
| EC5 | 5.29 | 1.895 | -.946 | -.266 |
| EC6 | 4.83 | 1.622 | -.619 | -.252 |
| EC7 | 5.32 | 1.529 | -.907 | .348 |

*Based on a 7-point Likert scale where 1=Strongly disagree and 7=Strongly agree

Of all the variables making up the construct RI, the ones that had the highest

perceptions pertained to the restaurant's food quality (RI1) (M = 6.39, SD = 1.003) and

freshness (RI3) (M = 6.24, SD = 1.069), followed by its cleanliness (RI6) (M = 6.23, SD

= 1.238). The restaurant's variety of menu offerings (RI2) received the lowest overall

perceptions of all the variables in RI (M = 5.58, SD = 1.253). For the construct Menu, the

123

variables with the highest perceptions amongst respondents regarded the menu's provision of adequate information (Menu1) (M = 5.84, SD = 1.197) and uniqueness from other restaurants serving similar cuisine (Menu2) (M = 5.75, SD = 1.291). The item that received the lowest perceptions in Menu regarded how much the respondent noticed the local food wordage (M = 4.95, SD = 1.704).

Respondents' overall level of EC was fairly neutral, with the two variables that had the highest level of agreement being "I feel frustrated and angry when I think of industries that pollute the environment" (EC1) (M = 5.35, SD = 1.664) and "it is important to me that a restaurant does its part to minimize environmental harm" (EC7) (M = 5.32, SD = 1.529). The variables that had the lowest level of agreement pertained to pre-existing green purchasing behavior: "I refuse to purchase products sold by companies that seriously damage the environment" (EC3) (M = 4.54, SD = 1.737) and "when purchasing products, I always select the ones that have some type of environmental certification, even if they are more expensive" (EC4) (M = 4.40, SD = 1.680).

After the sample and descriptive statistics were examined, the analysis proceeded onto the model testing phase. For the hypotheses that looked at purchase behavior as the outcome, or RI→Purchase (H1), EC→Purchase (H2), and Menu→Purchase (H5), logistic regression analysis was used. In order to ensure the variables under examination formed into unique constructs and to assess internal reliability, an EFA preceded the analysis. Results of the EFA and reliability are discussed next, followed by the results of the logistic regression procedure.

124

The first step in testing the hypothesized relationships among the three independent constructs in the logistic regression model was to perform an Exploratory Factor Analysis, or EFA. As described in more depth previously in Chapter 3, an EFA was performed to identify and specify variables that formed the three latent variable constructs under investigation (Field, 2013). The EFA was also used to establish construct validity (Huck, 2004). Before proceeding with the EFA, the data were assessed for compatibility with the procedure. An analysis of the correlation matrix and the partial-correlation matrix displayed no indication of poor model fit, and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (of .896) showed that sample size was sufficient, thus verifying the appropriateness of the data for an EFA (Sharma, 1996).

Next, data were extracted using Principal Axis Factoring (PAF) to estimate the communalities and the factor solution, followed by a Varimax rotation method (Field, 2013; Sharma, 1996). Varimax, an oblique rotation method, was used for this analysis because the constructs were assumed to be independent from one another (Field, 2013; Sharma, 1996). Factors with eigenvalues greater than 1 were retained, and values with loadings less than .4 were purposefully suppressed (Field, 2013). All variables except one (RI5) successfully loaded to form three distinct factors—RI, Menu, and EC, thus verifying the validity of the constructs under examination in the study. Because of its weak factor loading and weakening of construct validity, item RI5 was dropped from all models in the remaining tests. After dropping the problematic item, each factor demonstrated an internal reliability above the acceptable cutoff value of Cronbach's

125

alpha (α = .7) (Field, 2013): EC α = .897; RI α = .854; and Menu = α = .788. (See Table

4.3).

**Table 4.3** EFA Results and Reliability

| Variable | Factor Loadings | | |
|---|---|---|---|
| | *Factor 1*<br>**Environmental Consciousness**<br>**(EC)** | *Factor 2*<br>**Restaurant Image**<br><br>**(RI)** | *Factor 3*<br>**Perception of**<br>**Menu Information**<br>**(Menu)** |
| RI1 | | .804 | |
| RI2 | | .536 | |
| RI3 | | .815 | |
| RI4 | | .718 | |
| RI5 | | N/A | |
| RI6 | | .549 | |
| MENU1 | | | .489 |
| MENU2 | | | .683 |
| MENU3 | | | .820 |
| MENU4 | | | .568 |
| MENU5 | | | .511 |
| EC1 | .725 | | |
| EC2 | .771 | | |
| EC3 | .775 | | |
| EC4 | .793 | | |
| EC5 | .564 | | |
| EC6 | .769 | | |
| EC7 | .831 | | |
| **Initial Eigenvalue** | **5.538** | **3.803** | **1.297** |
| **% of Variance Explained** | **30.77%** | **21.13%** | **7.2%** |
| **Reliability Alpha (Cronbach's)** | **α=.897** | **α=.854** | **α=.788** |

After the EFA demonstrated internal validity and reliability of the data, and

ensured that each variable in the model was uniquely measuring its intended construct,

measurement items for each factor were summed to form a single, independent variable

126

construct. These combined independent variable constructs were then used for the logistic

regression analysis. As discussed in Chapter 3, logistic regression was used because of

the dichotomous outcome of purchase behavior, which was assessed by asking whether

or not a guest purchased an item off of the daily special menu.

Three different relationship paths were tested individually in a logistic regression

model: RI→Purchase (H1), EC→Purchase (H2), and Menu→Purchase (H5). The first

path tested was the effect of RI on Purchase. The relationship was statistically significant

and differed from the baseline, null model ($\chi^2 = 4.825$, $df = 1$, $p = .028$). Though the

relationship was statistically significant at the $p < .05$ level, the odds ratio (OR) was only

slightly above 1 (OR = 1.047, Wald $\chi^2 = 4.511$, $df = 1$, $p = .034$). As an OR can be

likened to an $r^2$ statistic in multiple linear regression when interpreting the outcome, an

OR close to 1 is similar to an $r^2$ being close to zero—meaning a small amount of the

variance in the outcome variable was explained by the predictor. This suggests that guests

who purchased a local item were significantly more likely to have higher perceptions of

RI, but the odds of purchasing a local item based upon having higher perceptions of RI

were almost even.

The next test regressed purchase behavior on environmental consciousness

(EC→Purchase). This relationship was also found to be statistically significant ($\chi^2 =$

9.438, $df = 1$, $p = .002$), which indicated that those who purchased a local item were

significantly more likely to be environmentally conscious individuals. However, the OR

for the relationship was only slightly above 1 (OR = 1.031, Wald $\chi^2 = 9.085$, $df = 1$, $p =$

.003), inferring that the likelihood that an environmentally conscious individual

purchased a special local menu item instead of a regular menu item was very small.

Lastly, the path between perception of menu information and purchase behavior (Menu→Purchase) was tested. The relationship was statistically significant ($\chi^2$ = 12.711, $df$ = 1, $p$ <.001). Like the other relationships, the OR was still very close to 1, despite having the strongest predictive ability compared to the other two paths (odds ratio = 1.067, Wald $\chi^2$ = 12.064, $df$ = 1, $p$ =.001). Therefore, Hypotheses H1, H2, and H5 were each supported. Results are displayed in Table 4.4 below.

**Table 4.4** Results of Logistic Regression Analysis

| Predictor | $B$ | $SE\ B$ | Wald's $\chi^2$ ($df$=1) | $e^B$(odds ratio) | Model $\chi^2$ (df=1) | Hypotheses |
|---|---|---|---|---|---|---|
| | | | Purchase of Local Food Item ($N$ =512; 310=No, 210=Yes) | | | |
| H1: Restaurant Image (RI) | .046 | .021 | 4.511 | 1.047* | 4.825* | Supported |
| H2: Environmental Consciousness (EC) | .031 | .010 | 9.085 | 1.031** | 9.438** | Supported |
| H5: Perception of Menu Information (Menu) | .065 | .019 | 12.064 | 1.067*** | 12.711*** | Supported |

*p < .05, **p < .01, ***p < .001

In order to examine the effects of restaurant image, environmental consciousness, and perception of menu information on actual purchase behavior relating to local food in a restaurant setting, EFA and logistic regression procedures were used to test the hypotheses. Results showed that all three hypothesized relationships, H1, H2, and H5, were supported. Because of the dichotomous nature of the dependent variable in this study (e.g. did you purchase an item from the daily special menu: yes or no), logistic regression was the preferred technique to analyze the relationship between variables.

128

However, the second component of the model looked at restaurant image as the dependent latent construct and its relationship with the other latent constructs of environmental consciousness and perception of menu information. For this particular component of the analysis, SEM was used because restaurant image is not an observable behavior and is considered a latent variable construct. SEM is specifically designed to measure relationships between latent variable constructs, thus it is the most appropriate statistical method to use. The following section describes the results of the SEM procedure, which was preceded by a CFA.

4.4 CFA AND SEM RESULTS: HYPOTHESES H3, H4, AND H6

The next step in the analysis involved Anderson and Gerbing's (1988) recommended two-step approach to SEM, which begins with a measurement model, or a Confirmatory Factor Analysis, CFA, to establish convergent validity and ensure the latent variable constructs under examination differed from one another. The measurement model is followed by a structural model that tests the hypothesized paths between the latent variable constructs. The first step in the analysis involved running a CFA for each individual latent variable construct in the model, independent and dependent, to assess it for adequate model-fit and convergent validity. This step is designed to confirm that the pre-specified constructs were in fact reliable and valid. The data is assessed for its goodness-of-fit indices and statistical significance.

Results of the initial model-fit tests for the three constructs were varied. RI was statistically insignificant but had strong fit characteristics ($\chi^2 = 12.693$, $df = 9$, $\chi^2/df = 1.410$, $p = .177$, CFI = .997, NFI = .99, RMSEA = .028). These results indicated that the error variance was small, thus demonstrating strong model fit, but that there was a weak

129

measurement item causing the overall model to demonstrate statistical insignificance. The construct EC was statistically significant but demonstrated weaker model fit ($\chi^2$ = 173.0987, $df$ = 14, $\chi^2/df$ = 12.396, $p < .001$ CFI = .992, NFI = .916, RMSEA = .149). This indicated the measurement items were strong and significant, but that the error variance was higher than desired, suggesting that some of the items shared common error, or covaried amongst one another. The last construct, Menu, was statistically significant and demonstrated strong model-fit ($\chi^2$ = 12.454, $df$ = 5, $\chi^2/df$ = 2.491, $p = .029$ CFI = .990, NFI = .984, RMSEA = .054). Results are also displayed in Table 4.5.

**Table 4.5** Initial CFA Results by Latent Construct

| Latent Construct | # of Items | $\chi^2$ (DF) | *CFI* | *GFI* | *NFI* | *RMSEA* | *p* |
|---|---|---|---|---|---|---|---|
| **RI** | 6 | 12.693 (9) | .997 | .992 | .990 | .028 | .177 |
| **EC** | 7 | 173.087 (14) | .992 | .900 | .916 | .149 | <.001 |
| **Menu** | 5 | 12.454 (5) | .990 | .991 | .984 | .054 | .029 |

The next procedural step involved improving each individual CFA model based upon specific model-fit criteria such as regression weight significance, standardized residual covariances and modification indices (Byrne, 2001). Standardized regression coefficients of .40 or higher were considered adequate for retaining items, and modification indices less than 10 were used as cutoffs for fit improvement when improving the measurement model. For RI, out of the six original items one item (RI5) showed a low and insignificant standardized regression weight (.114) and was removed from the model. The decision to remove that item from all further analysis was also justified by the fact that the same item showed a weak and insignificant loading in the

130

EFA performed earlier. Though the overall model for EC was statistically significant, its higher chi-square and RMSEA values were beyond the criteria for good model fit ($\chi^2$ = 173.0987, $df$ = 14, $\chi^2/df$ = 12.396, CFI = .992, NFI = .916, RMSEA = .149). To correct for this and improve model fit, covariances were drawn between the three error-terms (EC5→EC7, EC5→EC6, and EC6→EC7) which showed modification indices greater than 10 (Byrne, 2001). The decision to covary the error terms for these particular variables within the EC construct was justified by the contextual similarity that underlies each of these items in comparison to the others in the model. The latent construct Menu demonstrated good model fit throughout, and was left unmodified for the full model test. After modifications were made to improve model fit, the next step of the CFA analysis tested the complete model with covariances drawn between each of the modified constructs.

The final measurement model contained 3 latent constructs with a total of 17 observed measurement variables. For all variables in the final model, unstandardized loadings ranged from .738 to 1.423 and standardized loadings ranged from .483 to .875. The $t$-values ranged from 10.964 to 24.125 and were all statistically significant at the $p <$ .001 level. The overall model demonstrated parsimony and strong overall fit ($\chi^2$ = 256.414, $df$ = 113, $\chi^2/df$ = 2.269, $p <$ .001, CFI = .967, NFI = .943, RMSEA = .050) To further assess convergent validity, the average variance extracted (AVE) was estimated. The AVE of the three constructs ranged from .682 to .756, which exceeded the minimum criteria set forth by Fornell and Larcker (1981) who recommended that each construct's AVE should be above .5 and exceed its own squared correlation value (See Table 4.6).

After the measurement model (CFA) was confirmed and the model validated, the structural model was analyzed next. For the structural analysis, the procedure began by removing the covariances between the constructs drawn in the measurement model and then drawing new direct, relational paths between the independent and dependent variable constructs.

**Table 4.6** Final CFA Results

| Construct | # of Items | Unstandardized Loadings | Standardized Loadings | $t$-Value | Composite Reliability | AVE |
|---|---|---|---|---|---|---|
| RI | 5 | .738 - .956 | .597-.875 | 14.221-24.125*** | .867 | .756 |
| EC | 7 | .915 - 1.423 | .483 - .820 | 10.964-21.813*** | .892 | .739 |
| Menu | 5 | .797 – 1.020 | .499 - .801 | 11.206-20.341*** | .809 | .682 |

( $\chi^2 = 256.414$, $df = 113$, $\chi^2/df = 2.269$***, CFI = .967, NFI = .943, RMSEA = .050 )
***p $< .001$

Based on model-fit-indices established earlier (Hu & Bentler, 1999), the estimated model provided a good fit of the data ($\chi^2 = 256.414$, $df = 113$, $\chi^2/df = 2.269$, $p < .001$, CFI = .967, NFI = .943, RMSEA = .050). The results of the standardized estimates and t-values are reported in Table 4.7, along with the model fit indices for the structural model. As shown in Table 4.7, EC was not a significant predictor of restaurant image RI ($\beta = .069$, $t = 1.693$, $p = .090$), and thus did not support hypothesis H3. This finding suggests that an individual's level of environmental consciousness did not play a significant role in the formation of their perceptions of restaurant image. However, the relationship between EC and Menu was statistically significant ($\beta = .171$, $t = 3.359$, $p < .001$), showing that the

132

more environmentally conscious individual had higher perceptions of menu information, and supports hypothesis H4. The strongest and most significant relationship was between Menu and RI ($\beta$ = .687, $t$ = 11.269, $p$ < .001), which suggests that the more an individual perceived the information on the menu, the higher they perceived restaurant image. Therefore hypothesis H6 was supported.

**Table 4.7** SEM Results

| Path | Unstandardized Path Coefficient | Standardized Path Coefficients | $t$ | $p$ | Hypothesis |
|------|------|------|------|------|------|
| EC→RI (H3) | .038 | .069 | 1.693 | .090 | Not Supported |
| EC→Menu (H4) | .121 | .171 | 3.359 | < .001 | Supported |
| Menu→RI (H6) | .544 | .687 | 11.269 | < .001 | Supported |

($\chi^2$ = 256.414, $df$ = 113, $\chi^2$/ $df$ = 2.269***, CFI = .967, NFI = .943, RMSEA = .050 )
***p < .001

After hypotheses H3, H4 and H6 were tested via SEM, two tests were conducted to explore for the potential moderating effects of Menu on the relationships between EC → Purchase and EC → RI. The results from these tests are presented next.

4.5 THE MODERATING EFFECT OF PERCEPTION OF MENU INFORMATION: HYPOTHESIS H7A AND H7B

The final component of the conceptual model being tested in this study looks at the moderating effect of perception of menu information on the relationships between the independent variable construct of environmental consciousness and the dependent variables of purchase behavior and restaurant image. The moderating effect of Menu on the path between EC → Purchase was examined first.

133

Following the statistical strategy for testing moderator effects as recommended by Ro (2012), a two-step process was employed. Results of the moderation test for H7a are displayed in Table 4.8. The first step involved regressing the outcome variable Purchase on the two predictor variable construct—the independent variable construct EC and the moderator variable Menu. The first logistic model was statistically significant ($\chi^2$ = 18.997, $df$ =2, p < .001), and demonstrated that EC and Menu were significant predictors of Purchase (<u>EC</u>: odds ratio =1.026, Wald $\chi^2$ = 6.124, $df$=1, $p$ =.013; <u>Menu</u>: odds ratio =1.059, Wald $\chi^2$ = 9.186, $df$ =1, $p$ =.002).

**Table 4.8** Results of the Moderation Effect of Menu on EC → Purchase

| Construct | $B$ | $SE\,B$ | Wald's $\chi^2$ (df=1) | $p$ | $e^B$(odds ratio) | Model $\chi^2$ (df) |
|---|---|---|---|---|---|---|
| **Step 1** | | | | | | |
| EC | .026 | .011 | 6.124 | .013* | 1.026 | |
| Menu | .057 | .019 | 9.186 | .002** | 1.059 | |
| | | | | | | 18.997(2)*** |
| **Step 2** | | | | | | |
| EC | -.050 | .054 | .861 | .353 | .951 | |
| Menu | -.036 | .067 | .285 | .593 | .965 | |
| EC*Menu (Interaction) | .003 | .002 | 2.034 | .154 | 1.003 | |
| | | | | | | 21.010(3)*** |

*p < .05, **p < .01, ***p < .001

Hypothesis 7a: Not Supported

The second step of the moderation test was to add the interaction effect, or EC*Menu, to the original logistic model in step one and see if the interaction explained a statistically significant amount of variance in Purchase (Ro, 2012). The results of overall

134

model remained statistically significant ($\chi^2 = 21.010$, $df = 3$, $p < .001$), the interaction term (EC*Menu) showed no improvement in explaining the variance of the outcome, and each variable became insignificant with the interaction effect added (<u>EC</u>: odds ratio = .951, Wald $\chi^2 = .861$, $df = 1$, $p = .353$; <u>Menu</u>: odds ratio = .965, Wald $\chi^2 = .285$, $df = 1$, $p = .593$; <u>EC*Menu</u>: odds ratio = 1.003, Wald $\chi^2 = 2.034$, $df = 1$, $p = .154$). This suggests that ultimately an individual's perception of menu information did not have any moderating effect on the relationship between their environmental consciousness and purchase behavior.

To test for the potential moderating effect of menu perception on the relationship between EC and RI (Hypothesis 7b), multi-group analysis was completed. The first step involved creating two subgroups based upon responses to the five questions relating to perception of menu information (e.g., "The wordage on this menu is interesting" or "I noticed the specific local-food wordage on the menu"). The five questions were measured on a 7-point Likert scale from 1 = "Strongly disagree" to 7 = "Strongly agree." The responses were totaled and a mean score of 5.456 indicated respondents had higher perceptions of the menu information. Then, a median split of consumers was completed by adding the scores of the five variables and finding a median value of 28 to use as the split point. Respondents scoring over 28 ($n = 238$) were placed in a "HIGH perception" group, while those scoring 28 or less ($n = 274$) were placed in a "LOW perception" group.

Structural invariance was tested using the median split of perception of menu information into two groups: HIGH and LOW. Baseline models for each of the two groups were tested independently for fit, and a nested model with both groups was tested

simultaneously (Byrne, 2001). For the "HIGH perception" group, all regression paths were significant at $p < .001$ except for EC $\rightarrow$ Menu ($\beta = .029$, $t = .483$, $p = .629$), EC $\rightarrow$ RI ($\beta = .054$, $t = .831$, $p = .406$), and Menu $\rightarrow$ Menu5 ($\beta = .091$, $t = 1.719$, $p = .086$), and all covariances were significant at $p < .001$. For the "LOW perception" group, all regression paths were significant at $p < .001$ except for EC $\rightarrow$ Menu ($\beta = .029$, $t = .483$, $p = .629$ and Menu$\rightarrow$Menu5 ($\beta = .091$, $t = 1.719$, $p = .086$), but the path between EC$\rightarrow$RI was significant at $p < .05$ ($\beta = .147$, $t = 2.445$, $p = .014$). All error covariances were significant at $p < .01$.

To test the hypothesis that Menu moderates the relationship of EC $\rightarrow$ RI, a second nested group model was created and constrained as equal between the two menu perception groups. Equality constraints between the groups were placed on all factor loadings, all factor variances, all factor covariances, and all error covariances prior to completing a chi-squared difference test (Byrne, 2001). The fully constrained model reflected the following fit of the data: ($\chi^2 = 860.131$, $df = 266$, $\chi^2 / df$ ratio $= 3.23$). Next, the structural path from EC to RI was allowed to freely estimate, keeping all other paths constrained as equal. The resulting model reflected the following: $\chi^2 = 858.884$ with $df = 265$, $\chi^2 / df$ ratio $= 3.24$. The chi-squared difference test between the fully constrained model and the model where the path of EC$\rightarrow$RI was allowed to freely estimate reflected a minimal and insignificant change ($\Delta\chi^2 = 1.247$, $\Delta df = 1$, $p = .264$). Therefore, no significant moderation effect was found between the two perception of menu groups (HIGH and LOW) on the relationship between environmental consciousness and restaurant image, so H7b was not supported.

136

## 4.6 Post-Hoc Test for Mediation

As part of a post-hoc analysis to the conceptual model being tested in this study, a test for the mediating effect of MENU on the relationship between EC → RI was performed. To test for any potential mediation effects of Menu on EC → RI, the bootstrapping procedure in AMOS structural equation modeling was utilized. Though bootstrapping is a technique that is often utilized in studies with large sample sizes and non-normal data (Yung & Bentler, 1996), it can also be used to help estimate indirect, direct, and total effects of latent variables (Cheung & Lau, 2008). Mediation effects (also referred to as indirect effects) occur when there is a reduction in the regression coefficient of one predictor variable on a dependent variable (e.g., $X1 \rightarrow Y$) as effects of a second predictor variable (e.g., $X2$ ) are controlled (Baron & Kenny, 1986; Cheung & Lau, 2008). In this study, EC was considered a direct predictor of RI, and the latent construct Menu was tested as a second, controlled predictor variable through which an indirect effect on RI was hypothesized to exist.

Following the methods and procedures as recommended by Cheung and Lau (2008), the bootstrap procedure using Maximum Likelihood estimation (ML) was run in AMOS seeking indirect, direct, and total effects, using 500 bootstrap samples, a bias-corrected confidence level and intervals, and a recommended Bootfactor of 1. Results are displayed in Table 4.9.

**Table 4.9** Results of the Mediation Effect of Menu on EC → RI

| Structural Path | Direct Effect* | Indirect Effect* | Total Effect* | 95% Biased-Corrected Confidence Interval for Indirect Effect | Two-tailed Significance for Indirect Effect |
|---|---|---|---|---|---|
| EC → RI | .069 | .118 | 0.186 | .087 - .294 | .003** |
| *Effects reported are standardized effects | | **Significant at p < .01 | | | |

Using the 95% bias-corrected confidence interval, it is noted that the standardized indirect effect of .118 was significant using the two-tailed test ($p = .003$). After controlling for the indirect effect of Menu, the standardized direct effect of EC on RI was .069 ($p < .01$), thus satisfying the requirement for a partial mediation effect (Byrne, 2001l; Ro, 2012). The effect of Menu on the relationship between EC → RI remained significant in both cases. From these results, it was concluded that there is a significant partial mediation effect of the perception of menu information (Menu) on the relationship between environmental consciousness and the perception of restaurant image (EC → RI). Table 4.9 displays the results of the mediation test using the bootstrapping procedure.

The test for mediation concludes the results of the statistical analyses that were used to answer research questions 1 and 2. The analyses for these questions were based upon a conceptual model that was tested through a series of hypotheses relating to two outcome variables: purchase behavior (Purchase) and perception of restaurant image (RI) (See Figure 2.5). The following section presents the results of the analyses used to answer research questions 3 and 4, which explore the effects of the menu treatments on purchase behavior and restaurant image (research question 3), and the role demographics played on purchase outcome and restaurant image (research question 4).

4.7 THE EFFECTS OF MENU TREATMENT

The analysis on the effects of the menu treatments began with the outcome variable purchase behavior (Purchase) and was followed by the construct of perception of restaurant image (RI). The relationship was analyzed using two different statistical procedures based on the nature of the data. A chi-square test was used to analyze the data with Purchase as the outcome (as both variables in the data were categorical), and

138

ANOVA with the outcome of RI. The results of the chi-square test showed that there were no statistical differences between the menu treatments and their effect on purchase outcome ($\chi^2 = 4.336$, $df = 3$, $p = .227$).

Over the four week time period, a total of 202 out of the 512 participants in the study purchased a local food item, or 39.5% of the sample population. Details of the weekly purchase behavior are outlined in Table 4.10, which shows the proportion of participants who did or did not purchase a local item from the daily special menu over the four week study period. The percentage of local items purchased during each week varied somewhat: 33.3% (or 43 individuals) purchased a local menu item during the control week 1, 42.4% of the participants (56 individuals) bought a local item during the first menu treatment in week 2, 37% (44) bought a local item in the second menu treatment in week 3, and 44.7% (59) during the third menu treatment in the final week 4.

**Table 4.10** Results of Chi-square Test for Menu Treatment by Purchase

| Menu Treatment | Purchased Local Item Count (Percentage of Total) | | |
| --- | --- | --- | --- |
| | No | Yes | Total |
| Week 1-Control | 86 (66.7%) | 43 (33.3%) | 129 |
| Week 2-Basic Wordage | 76 (57.5%) | 56 (42.4%) | 132 |
| Week 3-Descriptive Wordage | 75 (63%) | 44 (37%) | 119 |
| Week 4-Wordage & Imagery | 73 (55.3%) | 59 (44.7%) | 132 |
| Total | 310 (60.5%) | 202 (39.5%) | 512 |

$\chi^2 = 4.336$, $df = 3$, $p = .227$
*Note*: Numbers in parentheses indicate row percentages

The next step examined whether or not the type of menu treatment had an effect on RI. To test this relationship for statistical significance an ANOVA was run. Results

showed that there was no statistical variation in how guests perceived the restaurant's image based upon the menu treatments they were exposed to $F(3,508) = .934$, $p = .424$. Because no significance was found, a post-hoc test was not performed.

The next section presents the findings from the last research question in the study: how the demographic variables of gender, education, and income level relate to the purchase of a local food item in an upscale casual restaurant setting.

4.8 DEMOGRAPHIC VARIABLES

Three difference demographic variables, gender, education, and income, were examined for their relationship with purchase behavior. All results can be found in detail in Table 4.11. The first demographic variable that was examined for its relationship with Purchase was gender. A chi-square test showed that there were no statistical differences between males and females in respect to the purchase of a local item off the daily special menu ($\chi^2 = .156$, $df = 1$, $p = .692$). Out of the 202 total local item purchases, the number of males who purchased a local item was split evenly with the number of females (50% each).

The second chi-square test looked at the relationship between Purchase and education level. Results also showed no statistical difference between groups ($\chi^2 = 5.65$, $df = 4$, $p = .227$). The highest percentage of individuals who purchased a local item had either an undergraduate degree (37.6%) or a graduate degree (44.6%). The last demographic variable that was examined for its relationship to purchase outcome was income level. A chi-square test showed there to be a statistically significant difference between those individuals who purchased a local item and their annual yearly income ($\chi^2 = 12.035$, $df = 4$, $p < .05$). The majority of the respondents who did not purchase a local

140

item were in lower income brackets, with 56% of all those who did not purchase a local

item made an individual yearly income of either $40,000-$69,999 (30.5%) or $39,999 or

less (25.8%).

**Table 4.11** Results of Chi-square Tests for Demographics by Purchase

| Demographic Variable | Purchased Local Item Count (Percentage) | | | | |
|---|---|---|---|---|---|
| | No | Yes | Total | $\chi^2$ (df) | P |
| **Gender** | | | | | |
| Male | 148 (48.2%) | 101 (50%) | 249 | | |
| Female | 159 (51.8%) | 101 (50%) | 260 | | |
| *Total* | 307 | 202 | 509 | .156(1) | .692 |
| **Education** | | | | | |
| < High school degree | 2 (0.6%) | 0 (0%) | 2 (.4%) | | |
| High school degree | 17 (5.5%) | 6 (3%) | 23 (4.5%) | | |
| Some college | 36 (11.7%) | 30 (14.9%) | 66 (12.9%) | | |
| Undergraduate degree | 132 (42.9%) | 76 (37.6%) | 208 (40.8%) | | |
| Graduate degree | 121(39.3%) | 90 (44.6%) | 211 (41.4%) | | |
| *Total* | 308 | 202 | 510 | 5.65(4) | .227 |
| **Individual Income** | | | | | |
| $39,999 or less | 77 (25.8%) | 49 (25.1%) | 126 (25.6%) | | |
| $40,000--$69,999 | 91 (30.5%) | 41 (21%) | 132 (26.8%) | | |
| $70,000--$99,999 | 43 (14.4%) | 42 (21.5%) | 85 (17.2%) | | |
| $100,000--$129,999 | 36 (12.1%) | 16 (8.2%) | 52 (10.5%) | | |
| $130,000 and above | 51 (17.1%) | 47 (24.1%) | 98 (19.9%) | | |
| *Total* | 298 | 195 | 493 | 12.035(4) | .017* |

*p < .05
*Note:* Numbers in parentheses indicate column percentages.

The group that had the lowest amount of local food purchases were those who

made $100,000-$129,999, who collectively represented only 8% of the local item

purchases. The group that had the most local food purchases earned $39,999 or less

(making up 25.1% of the total purchases), followed closely by the individuals who had

made $130,000 or above (24.1% of the total purchases).

141

This concludes the discussion on the results and findings from the data analyses used in the study. A summary of the chapter follows.

4.9 CHAPTER SUMMARY

The primary objectives of this study were to examine the relationships between the independent constructs of environmental consciousness (EC) and the perception of menu information (Menu) on the outcome variable of purchase behavior (Purchase) and the dependent construct of perception of restaurant image (RI) as they relate to local food in an upscale casual restaurant setting. Additionally, this study looked into whether or not the use of local food descriptions on a menu could affect Purchase and RI and how demographic variables played into the relationship. The research was guided by the four following research questions:

1) Does environmental consciousness have an effect on consumers' purchase behaviors and perceptions of restaurant image in an upscale casual restaurant setting?

2) Does the perception of menu information have an effect on consumers' purchase behaviors and perceptions of restaurant image in an upscale casual restaurant setting?

3) Can the type of menu information, specifically the use of local food wordage and imagery, influence consumers' purchase behaviors and perceptions of restaurant image?

4) How are demographic variables, specifically gender, education, and income level related to purchase behavior in an upscale casual restaurant setting?

142

To answer the first two research questions, a conceptual model was developed and hypotheses tested. A summary of the results are presented in Table 4.12. Because of the dichotomous nature of the dependent variable purchase behavior, a logistic regression model tested Hypotheses H1, H2, and H5. All three hypotheses were found to be statistically significant and subsequently supported. To test Hypotheses H3, H4, H6, and H7a-b, which looked at the relationship between latent constructs, a structural model was confirmed and tested using Anderson and Gerbing's (1988) two-step approach to SEM. H3, which tested the path EC → RI was not supported, where EC→ Menu (H4) and Menu → RI (H6) were supported. Hypothesis H7a-b were not supported either, suggesting Menu did not have significant moderation effect on the relationship between environmental consciousness and the two outcomes of purchase behavior and restaurant image (EC → Purchase and EC→RI).

The final component of Chapter 4 addressed research questions 3 and 4, which examined the relationship between the qualitative variables in the study: the type of menu treatment used and the demographic variables of gender, education, and income level, on the two outcomes of Purchase and RI. Results showed that type of menu treatment, basic local wordage, descriptive local wordage, and a combination of wordage and imagery, did not have a statistically significant effect on Purchase or RI. However, when basic local food wordage was added (the first treatment week), the percentage of individuals who purchased a local item from the daily special menu increased by nearly 10% over the control week. Regarding demographic variables and their relationship to purchase behavior, the only significant variation was within individual income, where those who

143

made $100,000-$129,999 were the least likely to purchase a local food item off the daily special menu. The full summary of results are displayed in full in Table 4.12 (see below).

Chapter 5 concludes the study with a detailed review of the results and the comparison to findings from previous research, followed by a discussion on the implications for both academics and foodservice operators, and ends with a discussion on additional limitations to the study, and opportunities for future research.
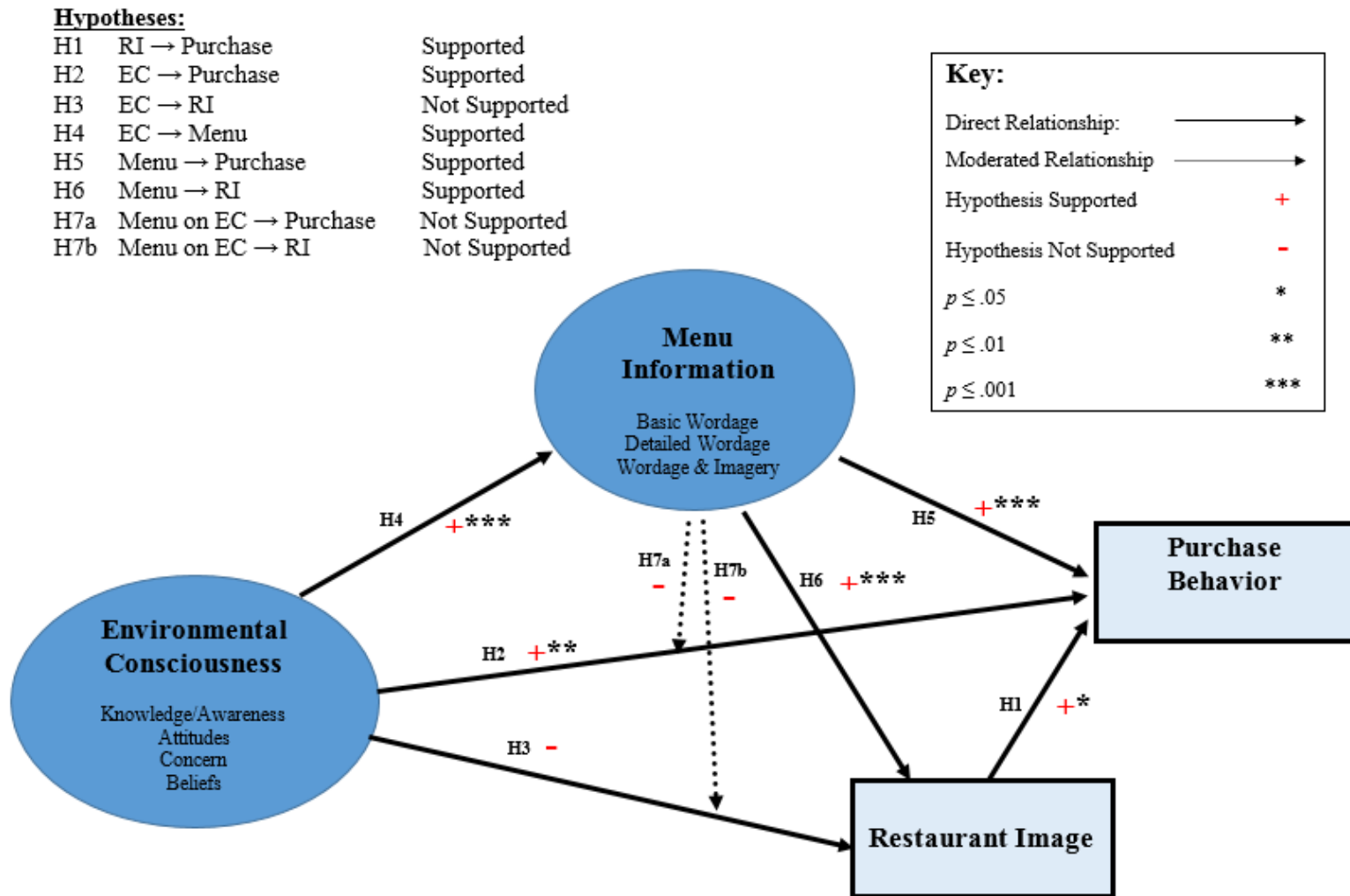
**Figure 4.1** Conceptual Model with Results

**Table 4.12** Summary of Results

| Relationship/Path & Hypotheses | Results | Statistics |
|---|---|---|
| **Research Questions 1-2** | | |
| | | |
| <u>Logistic Regression Models</u> | | |
| RI → Purchase (H1) | Supported | $\chi^2 = 4.825$, $df = 1$, $p = .028$ OR = 1.047* |
| EC → Purchase (H2) | Supported | $\chi^2 = 9.438$, $df = 1$, $p = .002$ OR = 1.031** |
| Menu → Purchase (H5) | Supported | $\chi^2 = 12.711$, $df = 1$, $p < .001$ OR = 1.067*** |
| *p < .05, **p < .01, ***p < .001 | | |
| | | |
| <u>Structural Model*</u> | | |
| EC → RI (H3) | Not Supported | $B = .069$, $t = 1.693$, $p = .090$ |
| EC → Menu (H4) | Supported | $B = .171$, $t = 3.359$, $p < .001$ |
| Menu → RI (H6) | Supported | $B = .687$, $t = 11.269$, $p < .001$ |
| *$\chi^2 = 256.414$, $df = 113$, $\chi^2/df = 2.269$, CFI = .967, NFI = .943, RMSEA = .050, $p < .001$ | | |
| | | |
| <u>Moderation Effects</u> | | |
| Menu on EC → Purchase (H7a) | Not Supported | |
| Menu on EC → RI (H7b) | Not Supported | |
| | | |
| **Research Question 3** | | |
| | | |
| <u>Effects of Menu Treatments</u> | | |
| Menu → Purchase | Not Significant | $\chi^2 = 4.336$, $df = 3$, $p = .227$ |
| Menu → RI | Not Significant | $F(3,508) = .934$, $p = .424$ |
| | | |
| **Research Question 4** | | |
| | | |
| <u>Demographic Relationships</u> | | |
| Gender→ Purchase | Not Significant | $\chi^2 = .156$, $df = 1$, $p = .692$ |
| Education → Purchase | Not Significant | $\chi^2 = 5.65$, $df = 4$, $p = .227$ |
| Income → Purchase | Significant | $\chi^2 = 12.035$, $df = 4$, $p < .05$ |

# CHAPTER 5

## DISCUSSION AND CONCLUSION

This final chapter summarizes the major findings from the current study and discusses the contributions to theory and academic research, followed by implications for the foodservice industry. Limitations and suggestions for future research are discussed as well.

### 5.1 STUDY SUMMARY

The current study had two primary objectives: first, to investigate if an individual's personal level of environmental consciousness (an assemblage of attitudes, values, beliefs, and intentions regarding pro-environmental and sustainable practices) is actualized into concordant purchase behavior; Second, to determine if marketing the use of a single sustainable practice—specifically the use of local food on a menu—can influence a consumer's purchase behavior and their perceptions of restaurant image in an independent, upscale casual restaurant setting. Guided by prominent attitude-behavior theories primarily rooted in the Theory of Planned Behavior (TPB) and the Values-Beliefs-Norms (VBN) theory, and in speculation of the existence of a gap between pro-environmental attitudes and behaviors, this study investigated the theoretical and empirical evidence of the relationships among the constructs environmental consciousness (EC), perception of menu information (Menu), and perception of

147

restaurant image (RI), with the outcome variable purchase behavior (Purchase). In addition, this study used a quasi-experimental design to examine the effects of using various menu item descriptions and imagery relating to local food on Purchase and RI in an upscale casual dining setting.

The following research questions guided the current study:

Research Question 1: Does environmental consciousness have an effect on consumers' purchase behavior and perception of restaurant image in an upscale casual restaurant setting?

Research Question 2: Does the perception of menu information have an effect on consumers' purchase behavior and perception of restaurant image in an upscale casual restaurant setting?

Research Question 3: Can the type of menu information, specifically the use of local food wordage and imagery, influence consumers' purchase behavior and perception of an upscale casual restaurant?

Research Question 4: How are demographic variables, specifically gender, education, and income level related to purchase behavior in an upscale casual restaurant setting?

To answer the research questions framing this study, hypotheses were developed and tested in a conceptual model that was grounded in existing theoretical frameworks and based upon extensive review of the literature (see Figure 5.1 shown below). A survey instrument was developed based upon established and reliable constructs that had been identified in the extant literature and previously tested in the field: Environmental Consciousness (EC), Perception of Menu Information (Menu) and Restaurant Image (RI).

After the instrument was pre-tested in a one week pilot study, it was refined and administered to eligible guests dining at an independent, upscale casual restaurant. Survey data were collected over a four week time period, during which the daily special menu was altered weekly to feature different wordage and imagery specifically relating to local food (see Appendix A). A total of 512 surveys were completed, roughly125 per week, and used in the data analysis.
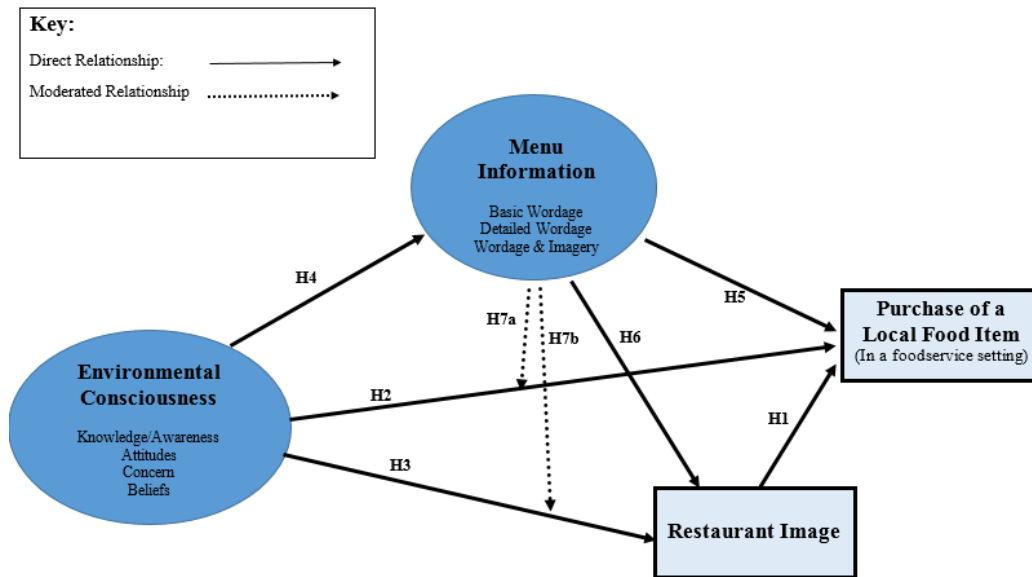


**Figure 5.1** Conceptual Model and Hypothesized Paths

The remainder of the chapter starts by briefly summarizing and recapping the results from each research question and its accompanying hypotheses (when applicable). After the results are briefly summarized, the subsequent section discusses how the key findings from each research question contribute to theory and academics, and how the findings from the current study support or refute findings from previous research. The final section discusses the implications for foodservice industry practitioners. The chapter

149

ends with a review of the limitations to the current study and opportunities for future research.

5.2 SUMMARY OF RESULTS: RESEARCH QUESTIONS 1 AND 2; HYPOTHESES 1-7A-B

To answer research questions 1 and 2, a conceptual model was developed and hypotheses tested for significance among the relationships. The first relationship in the model, which looked at the independent construct RI and the outcome variable of Purchase (specifically the selection of a local food item off of the daily special menu), was examined using logistic regression analysis as the first hypothesis in the proposed conceptual model (H1) Results showed a statistically significant positive relationship ($\chi^2$ = 4.825, $df$ = 1, $p$ = .028; OR = 1.047, $p$ < .05), and H1 was supported. However, the odds ratio (OR) value was very close to one (OR = 1.047). Because the OR is a measure of the strength of association between the independent and dependent variables, interpreted similarly to an $r^2$ value in linear regression, a value close to 1 indicates that the predictor variable explained a very small amount of the variability in the outcome (Huck, 2004). This demonstrated that an individual's RI did not strongly predict Purchase, and that only a small portion of the variance in Purchase could be explained by RI. Just because they perceived the restaurant image highly did not make them much more likely to purchase a local food item.

The second part of the conceptual model looked at the relationship between the independent construct EC and the outcome Purchase. To test the associated hypothesis (H2) and address the specific research question, a logistic regression analysis was again conducted because of the dichotomous nature of the outcome variable Purchase (e.g. did you purchase an item from the daily special menu: yes or no). The relationship showed to

be statistically significant, suggesting that environmental consciousness had a positive influence on whether or not an individual purchased a local food item ($\chi^2 = 9.438$, $df = 1$, $p = .002$; OR = 1.031, $p < .05$). However, the odds ratio was very close to one (OR = 1.031). This OR value demonstrated that those who were more environmentally conscious were only 1.031 times more likely to purchase a local food item off the daily special menu. Though the relationship was statistically significant, the odds that an environmentally conscious individual would purchase a local menu item over a regular menu item were only slightly higher. Therefore, the hypothesis that environmental consciousness positively influenced the purchase of a local food item (H2) was supported.

EC was also examined in the conceptual model for its relationship with the dependent construct RI (H3). Because each of the variables under examination in this part of the analysis were considered latent constructs and measured as such, SEM was the preferred statistical method. Results showed that EC did not have a significant effect on RI, and thus H3 was not supported ($B = .069$, $t = 1.693$, $p = .090$). This suggested that consumers' perceptions of restaurant image were independent from their environmental consciousness, and that a consumer's environmental attitudes played an insignificant role in the formation of their perception of restaurant image.

Like the first research question, the second research question was also examined via hypothesis testing through the same conceptual model. Because of the differing nature of the data for the outcomes in the hypothesized paths, different statistical procedures were performed. H4 used SEM to test for the relationship between EC and Menu and found a positive and significant relationship ($B = .171$, $t = 3.359$, $p < .001$).

151

This result demonstrated that a significant amount of variance in a consumer's perception of menu information was explained by their environmental consciousness, and that environmentally conscious consumers had higher perceptions of the menu information.

Like H1 and H2, a logistic regression model was used to test H5 (the direct relationship between Menu → Purchase) because of the dichotomous outcome purchase behavior. The relationship was statistically significant and the hypothesis supported ($\chi^2 = 12.711$, $df = 1$, $p < .001$; OR = 1.067, $p < .001$). However an OR of 1.067 (again, was very close to 1) suggested that higher perceptions of menu information had minimal effect on whether an individual purchased a local food item or not.

H6 tested the direct relationship between Menu → RI. This relationship was statistically significant, and Menu explained nearly 70% in the variation in RI ($B = .687$, $t = 11.269$, $p < .001$). This finding provided strong evidence which showed that the more information an individual perceived from the menu, the higher their perceptions of restaurant image were. Given this evidence, a post-hoc test for the mediation effect of Menu on the relationship between EC → RI was conducted. Results showed that Menu had a partial-mediating effect on the relationship between EC → RI, demonstrating that environmentally conscious individuals had higher perceptions of the information presented on the menu, and that the perceptions of the menu information significantly increased their perception of restaurant image.

The last component of research question 2 looked for the potential moderating effect of Menu on the relationship between EC → Purchase (H7a), and EC → RI (H7b). The tests for a moderating effect of perception of menu information on both relationships (EC→Purchase and EC→RI) were insignificant, meaning that the individual perception

152

of menu information did not significantly strengthen the relationship between environmental consciousness and purchase behavior (EC → Purchase) nor the relationship between environmental consciousness and perception of restaurant image (EC → RI).

In review, research questions 1 and 2 were examined through a conceptual model that tested for significance among the relationships (see Figure 5.2 below). Research questions 3 and 4 utilized different statistical procedures and were not included in the conceptual model that was tested. The results of research questions 3 and 4 are summarized next.
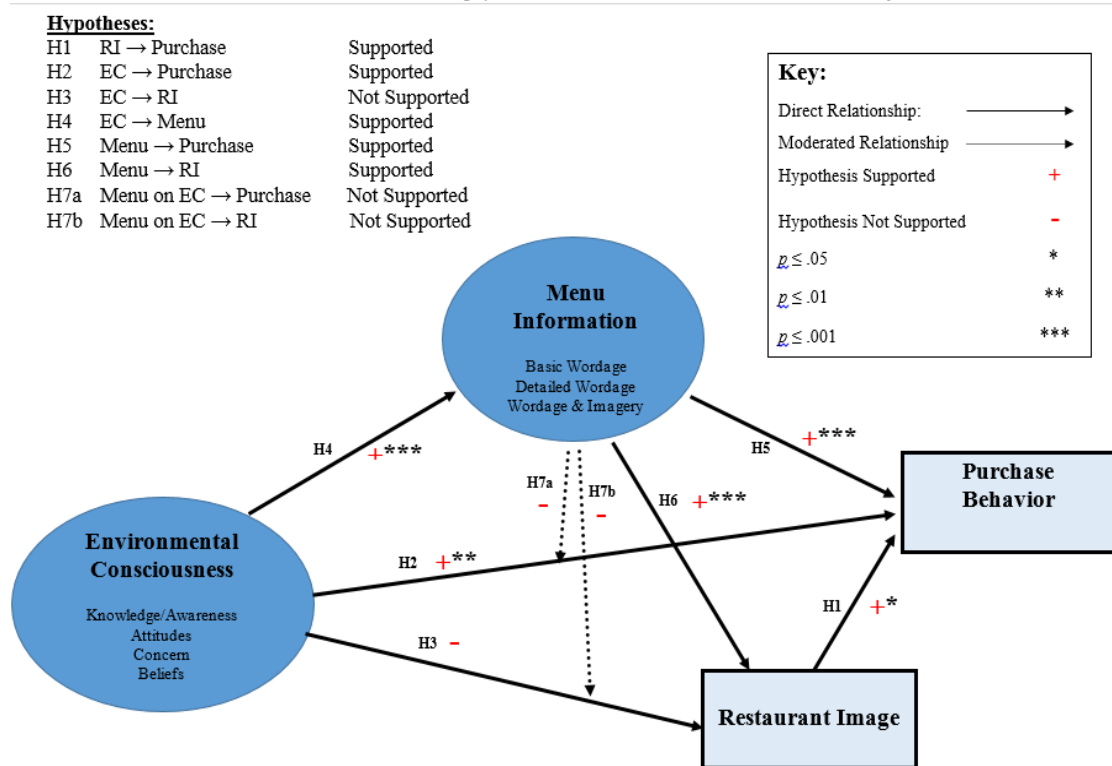


**Figure 5.2** Conceptual Model with Results

To answer research question 3, a quasi-experimental design was employed. After a week-long control period, the daily special menu was adjusted weekly to feature basic local food descriptions, detailed local food wordage, and then a combination of both the detailed wordage along with imagery (see Appendix A). The effects of the varied menu treatments on purchase behavior and perception of restaurant image were examined using two different statistical procedures. Using a chi-square test, the results of the first analysis showed that there were no statistically significant differences in consumers' purchase behavior based upon the type of menu treatment ($\chi^2 = 4.336$, $df = 3$, $p = .227$), meaning the type of menu treatment had minimal influence on the decision to purchase a local food item or not. However, though there was no statistical difference in the purchase of local food between the menu treatments and the control period, the percentage of local items purchased during the second week, or the first experimental week after the control period when basic local food wordage was introduced to the daily special menu, the percentage of individuals who purchased a local item increased nearly 10% (from 33% of the respondents to 42%). For the second analysis, an ANOVA looked at the variations in the outcome RI and if individuals' perceptions varied by the type of menu treatment used. Results were insignificant ($F(3,508) = .934$, $p = .424$), demonstrating that the style in which the menu was designed, and the way the menu presented information about local food, had little effect on individuals' RI.

The last research question looked at how demographic variables related to the outcome purchase of a local food item. Using chi-square tests, gender, education, and income level were examined for their relationship with the outcome purchase behavior.

154

Results showed that there were no differences in purchase behavior based on a respondent's gender or their education level. There was a statistically significant difference in purchase behavior based on annual income, which showed that one group, those who made between $100,000 -$129,999, were significantly less likely to purchase a local food item off the daily special menu compared to individuals in other income brackets.

The following section discusses the theoretical contributions from the current study and how each of the major findings compares to other findings from similar research on consumer behavior, especially as it relates to sustainability, local food, and the foodservice industry.

5.4 ACADEMIC AND THEORETICAL CONTRIBUTIONS: KEY FINDINGS FROM RESEARCH QUESTION 1

To answer the first research question, a conceptual model was developed and hypotheses tested for significance among the relationships. The results to the first hypothesis showed that RI had a significant but weak effect on Purchase, thus H1 was supported. However, research on the specific relationship between RI and Purchase is limited and the findings from previous research are varied. A majority of the research has looked at either the effects of the construct image (e.g. store image, brand image, corporate image, green image and restaurant image) or the physical environment (e.g. servicescape or store atmosphere) on different outcomes, such as customer loyalty and satisfaction, or behavioral intentions like revisit intention and spreading positive word-of-mouth, (Andreassen & Lindestad, 1998; Bloemer & Reyter, 1998; Liu & Jang, 2009; Ryu et al., 2012).

155

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The consensus from the existing research is that a consumer's perception of image (including the perception of the physical atmosphere and the servicescape) positively influences the formation of loyalty, satisfaction, and behavioral intentions. But research on the direct effects of image on actual behavior has been largely unexplored. The results from this research study supported the hypotheses that image significantly influenced behavior. RI was a significant predictor of Purchase, but the relationship was weak. Though there are several possible explanations for the weak relationship, perhaps the specific outcome, the decision to purchase a local food item, was too heavily influenced from other components that were not measured or accounted for in the current study, such as price of the dish, the ingredients used, or whether the diner was alone or with a group.

The significance of the relation between RI and Purchase can perhaps be explained by the importance of the specific items used to measure RI. The three items in the construct that showed the most significance related to the restaurant's food quality and freshness, and cleanliness. What can be concluded from this finding is that if a consumer perceived the restaurant's food to be fresh and higher in quality, and the restaurant to be clean, they were more likely to purchase a local food item. The weakness in the relationship might be considered due to the fact that restaurant image and perceptions of the surrounding environment are more effective in influencing customer satisfaction, loyalty, and behavioral intentions (which then influence to behavior), rather than behavior itself as found in other studies (Andreassen & Lindestad, 1998; Bloemer & Reyter, 1998; Liu & Jang, 2009; Ryu et al., 2012). Though the current study's findings

156

are helpful in building a better understanding of the relationship between the independent construct of restaurant image and purchase behavior, further research is warranted.

The current study was framed by prevalent attitude-behavior theories, specifically the Theory of Planned Behavior (TPB), the Values-Beliefs-Norms theory, and other theoretical variations and adaptations that have built upon the two theoretical frameworks, which ultimately posit that behaviors are a result of attitudes, values, intentions, beliefs, and personal norms. Much of the previous research on pro-environmental or green consumer behavior using these theoretical frameworks has shown that environmental consciousness, or an individual's collective attitudes, beliefs, intentions, and concerns as they relate to the environment, is a significant predictors of pro-environmental behaviors (Grob, 1995; Iyer & Kashyap, 2007; Kaiser et al., 2005; McKenize-Mohr, 2013; Oreg & Katz-Gerro, 2006; Stern, 2001; Tanner & Wölfing Kast, 2003). However, a growing body of research has acknowledged the inconsistencies in the effectiveness of looking at pro-environmental attitudes, beliefs, values, and intentions to predict or explain concordant behavior, and posit the existence of an attitude-behavior gap (Barber et al., 2014; Barr et al., 2011; Diamantopoulos et al., 2003; Kollmuss & Agyeman 2002; Mainieri et al., 1997; Pickett-Baker & Ozaki, 2008).

The current study also looked at the relationship between the independent construct environmental consciousness (EC) and the outcome (Purchase) (H2). The relationship was statistically significant, and the hypothesis was supported. Despite the fact that the majority of the sample showed a higher overall level of environmental consciousness (out of seven measures ranked on a Likert-type scale where 1= "Strongly

157

disagree" and 7 = "Strongly agree," M = 4.964 SD = 1.326), EC did not significantly affect Purchase.

These results indicate the presence of an attitude-behavior gap, at least as it relates to individuals' environmental consciousness and the purchase of a local food item in an upscale casual restaurant setting. Previous research has shown that restaurant consumers, especially those who dine at upscale or upscale casual restaurants, strongly prefer the use of locally sourced ingredients and say that they are willing to pay more for them (DiPietro et al., 2013; Lillywhite & Simonsen, 2014; Namkung & Jang, 2013; NRA, 2014; NRN, 2104a; Schubert et al., 2010). However, when presented the opportunity to purchase a local food item, individuals with higher environmental consciousness (e.g. those individuals who prefer restaurants to source local food and use green practices) were only slightly more likely (1.031 times) to purchase a local food item compared to the less environmentally conscious individual. What this finding ultimately suggests, is that those individuals who purchased a local food item were more likely to be the individuals with higher environmental consciousness. However, an individual who had higher environmental consciousness did not strongly influence or predict the purchase of a local food item.

The presence of an attitude-behavior gap support similar findings made by Barr et al. (2011), Mainieri et al. (1997), and Pickett-Baker and Ozaki (2008), who showed that individuals who stated they were committed to supporting the environment and sustainability (specifically through their purchase behavior), or said they were willing to pay more for sustainable products and practices, did not extend those beliefs and behaviors to a greater extent outside of the home or when making an actual purchase

158

decision. However, the findings from the previous research suggesting the existence of a gap between consumers' pro-environmental attitudes and their supporting behaviors did not look at actual purchase behavior as an outcome, instead looking at self-reported behaviors and hypothetical choice models as outcomes (Barber et al., 2014; Barber & Bishop, 2015; Barber, Kuo, Bishop, & Goodman Jr, R., 2012; Mainieri et al., 1997; Pickett-Baker & Ozaki, 2008). In regards to the current study, it is possible that in this scenario the purchase of a local food item was not considered a sustainable act or behavior like recycling or conserving energy, and that an individual's environmental consciousness was not activated through the offering of local food items. Or perhaps individuals who considered themselves to be environmentally conscious, because they recycled at home or preferred environmentally-friendly products and practices, did not even know that buying local food could be considered a sustainable act. Certainly other factors could have played a role in showing a weak relationship between EC and Purchase and the existence of an attitude-behavior gap, and thus provides a significant opportunity for future research.

The following section discusses the implications from the findings regarding research question 2.

5.5 ACADEMIC AND THEORETICAL CONTRIBUTIONS: KEY FINDINGS FROM RESEARCH QUESTION 2

Research question 2, which also involved testing hypotheses in a conceptual model, examined of the influences of the perception of menu information (Menu) on purchase behavior (Purchase) (H5) and on the perception of restaurant image (H6). However, the examination of Menu as a unique construct is a relatively unchartered area

159

in the extant literature. Previous research has measured constructs similar to the construct Menu, and its subsequent effect on behavior and perceptions of the restaurant, but rarely specifies Menu as a unique, independent construct. For example, some research has looked specifically at the servicescape or restaurant atmospherics (which include measures of the perception of signage and the menu within the constructs) and its effects on behavioral intentions and perceptions of a restaurant or service environment (Bitner, 1992; Heung & Gu, 2012; Jang & Namkung, 2009; Kim & Moon 2009). Similarly, other research has looked specifically at the perception of visual information, such as product packaging or digital signage, and its effect on purchase behavior and the formation of attitudes and intentions (Dennis et al., 2010; Onozaka & McFadden, 2011; Rokka & Uusitalo, 2008).

In the current study, H5 tested the direct relationship between the independent construct of Menu on Purchase. The hypothesis that a direct, positive relationship existed between Menu → Purchase was supported. The findings showed that those individuals who purchased a local food item were more likely to have higher perceptions of the menu information, as indicated by a statistically significant, positive relationship between Menu → Purchase. These findings support the theory that providing information about a product to the consumer can directly influence their purchase behavior (Bettman, 1970; Bloch et al., 2003; Murray, 1991), and support other research that has shown the provision of product information regarding local or sustainable food can influence purchase outcome (Dennis et al., 2010; Onozaka & McFadden, 2011; Rokka & Uusitalo, 2008).

160

However, having higher perceptions of menu information was not a strong predictor of the purchase of a local food item, as indicated by an OR that was only slightly higher than 1 (1.067). This finding could be explained by the fact that consumer purchase behavior in a restaurant setting can be very unpredictable, and is influenced by countless variables. The reasons why an individual may have declined to purchase a local item range widely. Perhaps they may not have favored some of the ingredients in a dish, or the price of an item was too high for them, or they were craving a favorite or alternative dish than what was featured on the daily special menu.

In a space that was left open on the survey for respondents to explain why they did not choose a local item, many respondents said they did not purchase a local menu item because they had a pre-determined menu item in mind that they were going to order before they even arrived. This suggests that overall, perception of information was a significant component to the purchase of a local item, but the odds of someone purchasing a local item over a non-local item based upon their perceptions of the menu information were almost even (OR = 1.067).

Hypothesis 6, which examined the direct relationship between Menu → RI, was fully supported, and demonstrated that an individual's perception of menu information played an important role in their perception of restaurant image. This finding suggests perceptions of information work to strengthen restaurant image, and that individuals used the information on the menu to form their perception of restaurant image. This conclusion is also supported by the finding of a partial-mediation effect between Menu → RI, which showed that the environmentally conscious consumer actively sought out menu information, and that once the information they were seeking was perceived it

161

significantly strengthened the perception of restaurant image. These findings support similar research, especially that which looked at the effects of the servicescape (which included information about the menu and signage within the service environment), which found positive perceptions of information (from the servicescape specifically) positively influenced perceptions of the restaurant image, customer satisfaction and loyalty, and behavioral intentions towards the restaurant (Ryu & Jang, 2007, 2008; Ryu et al., 2008, 2012).

The theoretical/academic implications from the major findings from the remaining research questions and how they contribute to the existing body of research are discussed next.

5.6 ACADEMIC AND THEORETICAL CONTRIBUTIONS: KEY FINDINGS FROM RESEARCH QUESTIONS 3 & 4

Research on menus and menu information has varied widely and has yielded mixed results as to the specific effects on purchase behavior and the perception of restaurant image. For example, Ozdemir (2012) found empirical evidence that supported the association between item selection and the item's corresponding label and description. McCall and Lynn (2008) found that the information provided on the menu significantly influenced purchase behavior. However, there is a paucity of research that looks at how menu presentation, specifically the style, wordage, or the description of a menu item, can affect purchase behavior and perception of restaurant image. To examine these specific relationships, two different statistical tests were conducted. Results of both procedures showed that the type of menu presentation, basic wordage, descriptive

wordage, or a combination of wordage with imagery, had little to no effect on purchase behavior or perception of restaurant image.

These results contradict some of the existing theories and conclusions made from previous research regarding visual stimuli and the effects on perceptions and behavior. For example, MacInnis and Price (1987) found theoretical support showing imagery had a unique cognitive effect on perception of information, which was used to guide behavior. The findings from the current study also refute evidence that has shown the use of unique menu designs can positively influence purchase behavior and perceptions of the restaurant (Bowen & Morris, 1995). On the contrary, the results of this research question also support findings from similar research. For example, Wansink, Painter, and Van Ittersum (2001) tested the use of descriptive menu labels in an experimental setting and found that there was no significant difference between purchase outcome based on the type or design of the menu.

Demographic variables were also examined for their relationship to purchase behavior of local foods. Previous research has yielded mixed results as well. Some research has shown certain demographic characteristics, such as gender (females specifically), higher levels of education, and higher income level to be significant antecedents to pro-environmental behavior (Fraj & Martinez, 2006; Iyer & Kashyap, 2007), whereas other research has found demographics to be weak and complicated predictors to pro-environmental behavior (Diamantopoulos et al., 2003; Tanner & Wölfing Kast, 2003). Results from this study supported the inconclusiveness to the issue, showing that neither gender nor education level had a significant impact on the purchase

163

of a local food item, whereas statistical variations were found between consumers' income level.

The last portion of the discussion section looks at the how the findings from this study have significant industry implications, and addresses how the results can aid practitioners in the foodservice industry. A discussion of the limitations of the current study and future research that can continue to aid practitioners and academics in this field of study.

5.7 IMPLICATIONS FOR PRACTITIONERS AND THE FOODSERVICE INDUSTRY

The results from this study have major implications for foodservice industry practitioners. Implications are addressed by the key findings from each research question and how they can translate to useful information for foodservice operators.

In regards to increasing perceptions of restaurant image, results from this study showed that the highest rated items for perception of restaurant image were perceived food quality and freshness, and the cleanliness of the restaurant. This suggests to foodservice operators that more attention should be paid to conveying food quality and freshness to the consumer in order to improve the customers' perception of restaurant image. One way to do this is through the use of a daily special menu. Because a menu that rotates frequently requires constant changing of ingredients and dish components, the use of a daily special menu can also demonstrate to the consumer that the restaurant is committed to using fresh, high quality ingredients (Bernstein, Ottenfeld, & Witte, 2008).

Beyond using the menu to increase perceptions of restaurant image by communicating the use of fresh, high quality ingredients, foodservice operators can also build perceptions of restaurant image by broadcasting updated announcements about

164

fresh ingredients and special menu items via social media sites or a company website. By building consumers' perception of restaurant image, restaurants can increase consumers' overall satisfaction, loyalty, behavioral intentions, and the likelihood of affecting consumers' purchase (Ryu et al. 2008, 2012).

Despite showing higher levels of environmental consciousness, the relationship between a consumer's environmental consciousness and their likelihood of purchasing a local item was weak. This conclusion demonstrates the presence of a gap existing between consumers' attitudes and behaviors as they related to local food. However, it is possible that the consumer did not really associate environmental consciousness with the purchase of a local food item. Many people don't know that purchasing local food can be considered a sustainable act, or that their personal level of environmental consciousness is more associated with more traditional and common sustainable behaviors like recycling.

Though the results showed a weak OR (OR= 1.031), suggesting that an individual's EC was not a very strong determinant of purchase behavior, the relationship between EC → Purchase was statistically significant, showing that the individuals who did buy a local item were more likely to have higher levels of EC. This suggests to practitioners that further efforts need to be made to activate consumers' environmental consciousness in order to increase their concordant behavior, thereby narrowing the attitude-behavior gap. As it has been shown in previous research, and demonstrated in the findings of this study, environmentally conscious consumers actively seek out environmental information and knowledge to better inform their actions and decisions and in formation of their attitudes. Therefore, foodservice operations should attempt to

further demonstrate their commitment to sustainable restaurant practices whenever possible, and provide information about sustainable practices directly to the consumer in order to turn consumers' environmental consciousness into associated behavior.

This can be done in many ways. The first method of communication would be through the menu, such as describing the use of sustainable ingredients or listing all the sustainable practices the operation employs in a message or note to the consumer. Additionally, signage can be placed in and around the restaurant (on the front doors or windows, posters, in an A-frame stand on the dining table) that further communicates the use of sustainable practices and provides clear information to the consumer. Messages about sustainability that are intended to activate environmental consciousness can also be delivered by the restaurant's wait staff, or through social media sites such as Facebook and Twitter where updated information can be delivered directly to the consumer.

The last major finding from this study that has implications for practitioners is the important role that perception of menu information played on the perception of restaurant image. A restaurant's image, and a consumer's perception of restaurant image, can have a significant effect on the formations of behaviors and behavioral intentions to dine out at a particular restaurant (Han & Ryu, 2009; Stevens et al., 1995). What this means is that in general, if a consumer has higher perceptions of restaurant image, the more likely they are to revisit that restaurant, build brand loyalty, spread positive word of mouth, and increase overall satisfaction with that establishment. The findings from this study suggest that perception of menu information had a significant and direct effect on the perception of restaurant image. Ultimately, consumers used the information on the menu to form their perceptions of restaurant image. What this suggests for practitioners is that as much

166

information about the restaurant as possible should be provided on the menu and in a clear and concise manner. The information on the menu should try to include as many elements as possible without overloading the page (which could confuse and overwhelm the consumer), and should include details such as dish preparation and ingredient description, price point, atmosphere, and segment type. By emphasizing focus on increasing consumers' perception of menu information, a restaurant can increase its perception of restaurant image and more directly influence purchase behavior.

Lastly, though there was no statistical difference between the menu treatments featuring local food descriptions (basic wordage, descriptive wordage, and a combination of wordage and imagery) and the control week (which had no local wording at all), results showed that once local food wordage was added to the daily special menu (in week 2, or the first treatment week), the proportion of individuals who bought a local item increased by nearly 10% and stayed at a higher percentage than the control week throughout the study period. Additionally, the week that had the highest proportion of local food items purchased (44.7%) came in the third treatment when imagery was added to the wordage on the menu in week 4, underscoring the value of the menu as a communication tool. The week that saw the least amount of local food items purchased came in week 1, the control, when there was no local food wordage at all. This information could be useful for restaurant operators in the menu design process and when deciding how to word a menu. What the results from the current study show, is that if a restaurant operation decides to source local ingredients, some type of wordage should be included that specifically identifies and highlights the use of local food. Though it is

167

difficult to tell which particular method of wordage is the most influential, it is clear that adding local food wordage to the menu can increase the purchase of local food items.

This concludes the discussion on the research findings and the implications for academics and practitioners. The next section of the chapter discusses limitations to the research, and concludes with future research opportunities and conclusions.

5.8 LIMITATIONS OF RESEARCH

There were multiple limitations to the current study that need to be addressed. One major limitation to this study was the attempt to explain and predict food consumption behaviors, especially in an experimental context. The full explanation of individual purchase behavior in a restaurant setting is nearly impossible. In addition to countless situational and contextual variables, which can range from menu prices to the time of day, what makes the prediction of food choice even more difficult is the inability to control for personal taste preferences.

Also, because this study took place in an experimental setting, certain factors within the test-site were uncontrollable. There were some instances where fluctuations in the availability of certain ingredients on the menu, thus changing the components of the dish, could have affected consumers' purchase outcome. For example, one of the items on the daily special menu was a particular fish local to the area (Sheepshead). It had run out mid-week, so it had to be changed to a similar fish that was also locally caught (Wahoo). There is a chance that some of the guests who might have preferred the one fish did not prefer the other, and thus it may have dissuaded them from purchasing the dish.

Another limitation to the current study is its lack of ability to generalize the findings across restaurant segments. Since the study took place in only a single,

168

independent, upscale casual restaurant, the findings from this study cannot be generalized to other restaurant segments such as QSR or fast-casual, where consumers' needs, selection criteria, and demographic characteristics can vary by segment. Additionally, the geographic location of the sample population, the southeastern U.S., also limits blanket conclusions on the greater dining population. For example, consumers in the pacific Northwest, where the sustainable food movement has strong roots, might perceive sustainable restaurant practices much differently than consumers in the southern regions, who tend to be more conservative and less environmentally conscious.

Another limitation to the current study is the fact that the all the factors affecting consumers' purchase behaviors and perceptions of a restaurant's image cannot be fully accounted for. For example, weather could have played a role in determining food choice (e.g., the onset of springtime weather could have possibly influenced consumers to buy lighter menu items, like salads, and avoid more heavier items like pork belly ). Moreover, personal and contextual factors, such as someone's hunger level, taste preferences, or current financial situation might have also factored into a purchase decision and could not have been controlled for. Other uncontrollable, situational variables such as the wait-staff's interaction with the guest or other servicescape factors (such as odor or poor presentation of menu information) could have also influenced purchase decision or the overall experience.

The last major limitation to the current study is the potential for response bias, especially social desirability bias. Social-desirability bias is the tendency of an individual to respond to survey items in such a way as to present themselves as appearing socially acceptable in order to gain the approval of others (King & Bruner, 2000). The tendency

for a participant to respond in a socially desirable manner can be evoked for multiple reasons, such as the nature of the test setting, individual motives of the participant, or the participants' expectations on how the consequences of their behavior will be evaluated by others (King & Bruner, 2000). However, research has shown that in studies relating to pro-environmental attitudes and behaviors, the potential for participants to be influenced by social desirability bias is high (Ewert & Galloway, 2009). In an environmentally related research context specifically, there is the possibility that individuals may be responding to certain questions designed to measure attitudes about the natural environment in a way that reflects a perception of social or political correctness, leading the participant to wanting to provide the 'right answer', as opposed to their genuine perceptions and beliefs (Ewert & Galloway, 2009).

5.9 FUTURE RESEARCH OPPORTUNITIES

There are several opportunities for future research that are presented as a result of the findings from the current study. First, the finding of the presence of an attitude-behavior gap has significant implications for future research on sustainability and pro-environmental behaviors, especially as it relates to the foodservice industry and the purchase of local food. As the research on the attitude-behavior relationship continues, the theories using attitudes, values, intentions, and beliefs as predictors for behavior will have to be reexamined in more detail to address this potential gap. In addition to the specification of new antecedent and contextual variables influencing behavior, the measurement of actual purchase behavior provides significant future research opportunity.

170

As the current study was constrained to looking at a single, independent restaurant in a single segment of the restaurant industry (upscale casual), the opportunities arise to extend the current research to look at chain restaurants and restaurants in other segments where there has been less research on sustainability initiatives, such as fast-casual and casual restaurants. As the characteristics of the consumers' vary by segment, understanding how these segments perceive and behave towards sustainability initiatives is important.

Additionally, this research focused heavily on a consumer behavior perspective as it related to sustainability and foodservice operations, and leaves substantial room for research that takes an operational approach. There is still much work and research to be done on how to effectively integrate sustainability initiatives into operations on a national and global scale. It is also imperative to have a better understanding of restaurant managers' perceptions and intentions regarding sustainability, as well as researching better ways to further disseminate sustainability into operations and better understanding operational barriers.

## 5.10 CONCLUSION

The call for more sustainable consumption behavior is urgent. In March of 2014, the United Nation's Intergovernmental Panel on Climate Change (IPCC)—an international group of top scientists and policy makers, released a report (compiled of data inputted from over 400 authors and 1000+ expert and governmental reviewers) outlining the reality of global climate change and specifying the urgent need to make drastic changes in human behavior or else suffer major, yet unpredictable consequences (e.g., rise in sea levels, major drought, and food shortages) (Gillis, 2014).

171

Seeing that the majority of industries and the United States' overall economic vitality are driven by continuous, large-scale resource production and consumption, and the subsequent burning of fossil fuels, the potential for serious environmental consequences is great. Water is getting scarcer (and more expensive) and the cost of food continues to rise (USDA ERS, 2014; Taylor, 2014). One industry that could be significantly affected in the near future is the foodservice industry. Because the foodservice industry is entirely reliant on natural resources, it has a significant impact on the environment. Not only does it require a substantial amount of energy and water to operate and maintain a foodservice facility, but the product itself—the food—requires even more energy to be grown/raised, harvested, processed, shipped and stored. Additionally, waste output, both in the form of pre-and-post consumer food waste, is considerably high. And, as more American's continue to eat away from home, the foodservice industry is experiencing more demand than ever before (USDA ERS, 2014).

Though perhaps more urgent than before, the warnings on climate change and environmental consequences are not new. Furthermore, the foodservice and hospitality industries have been aware of their environmental impact for several years now, and have been making efforts towards becoming more sustainable in the operations and employing green initiatives (Choi & Parsa, 2006; Peregrin, 2011; Wang, 2012). However, one of the biggest obstacles in achieving a more sustainable system of consumption is getting people to change their behavior (Barr et al., 2011). Not only does it become more important to understanding how and why consumers value sustainability initiatives and "green" practices, but which consumers value it and what are their differences. If we can understand how, if, or why consumers value sustainability, and in what context or

172

capacity, then we can work towards identifying the characteristics of pro-sustainable attitudes and behaviors and where further focus needs to be pursued.

This study hopes to contribute positively to the overall understanding of consumer behavior as it relates to engaging in sustainability initiatives in an upscale casual restaurant setting. However, the barriers affecting sustainable behavior are always changing, and can affect each consumer in a different way. To identify every barrier preventing the engagement or participation in sustainable practices or a sustainable behavior would be futile.

There has been countless research on pro-environmental behavior and the factors and variables influencing attitudes, values, beliefs, and intentions. However, the research on the gap between the formation of these pro-environmental attitudes and the behaviors that support or justify these beliefs is far more limited. The research is even less prevalent regarding sustainability and consumer behavior, and almost non-existent in the context of foodservice. The current study helps to close that gap in understanding, and provide a model that allows for generalizability and application to other restaurant segments where sustainability and green practices are relevant.

The room for research on this subject matter is vast. Yet, the sense of urgency for developing strategies that encourage sustainability is growing. By first identifying the variables that affect sustainable behavior, we can then examine the barriers that are preventing the sustainable values, beliefs, and attitudes from turning into concordant actions. This research hopes to narrow the gap in understanding and increasing sustainable behavior, and hopes to aid academics and practitioners in future studies to come.

173

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183

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# APPENDIX A

## A. Menu for Control Period—Week 1

**Mixed Green Salad**
*Mixed Greens, Beets, Goat Cheese, Candied Pecans, Sherry Vinegar Dressing*
$10

**Shrimp and Cheddar Cheese Grits**
*Shrimp, Creamy Cheddar Cheese Grits, Bacon, Micro Greens*
$12

**Grilled Pork Chop with Cherry Demi-glaze**
*Grilled Pork Chop, Mashed Parsnips, Braised Collard Greens. Cherry Demi-glaze*
$23

## B. Menu for Treatment 1—Week 2

**Mixed Green Salad**
*Local Mixed Greens, South Carolina Beets, Southern Goat Cheese, Candied Georgia Pecans, Sherry Vinegar Dressing*
$10

**Shrimp and Cheddar Cheese Grits**
*Carolina Shrimp, Creamy Local Cheddar Cheese Grits, South Carolina Bacon, Locally Produced Micro Greens*
$12

**Grilled Pork Chop with Cherry Demi-glaze**
*Grilled South Carolina Pork Chop, Mashed Local Parsnips, Braised Georgia Collard Greens.*
*Cherry Demi-glaze*
$23

194

## C. Menu for Treatment 2—Week 3

**Mixed Green Salad**

*Rawls Farms (Lexington, SC) Mixed Greens, City Roots (Columbia, SC) Organic Roasted Beets, South Carolina Trail Ledge Farms Goat Cheese, South Carolina Candied Pecans, Sherry Vinegar Dressing*
$10

**Shrimp and Cheddar Cheese Grits**

*South Carolina Shrimp, Creamy Adluh Grits (Columbia, SC) with Wil-Moore Farms Cheddar Cheese, Caw-Caw Creek Bacon, City Roots (Columbia, SC) Organic Micro Greens*
$12

**Grilled Pork Chop with Cherry Demi-glaze**

*Carolina Tea Braised Caw-Caw Creek Pork Chop, Mashed Bosvelt Farms (Irmo, SC) Parsnips and Braised Bosvelt Farms (Irmo, SC) Collard Greens with a Cherry Demi-glaze*
$23

## D. Menu for Treatment 3—Week 4



**Mixed Green Salad**

*Local Mixed Greens, South Carolina Beets, Southern Goat Cheese, Candied Georgia Pecans, Sherry Vinegar Dressing*
$10

**Shrimp and Cheddar Cheese Grits**

*Carolina Shrimp, Creamy Local Cheddar Cheese Grits, South Carolina Bacon, Locally Produced Micro Greens*
$12

**Grilled Pork Chop with Cherry Demi-glaze**

*Grilled South Carolina Pork Chop, Mashed Local Parsnips, Braised Georgia Collard Greens. Cherry Demi-glaze*
$23

# APPENDIX B

## SURVEY INSTRUMENT

**Please indicate your level of disagreement or agreement with the following statements:**

| | **Strongly Disagree** | | | **Neutral** | | | **Strongly Agree** |
|---|---|---|---|---|---|---|---|
| Q1--This restaurant offers quality food | O | O | O | O | O | O | O |
| Q2--This restaurant offers a variety of menu items | O | O | O | O | O | O | O |
| Q3--This restaurant offers fresh food | O | O | O | O | O | O | O |
| Q4--The price of the food corresponds with its quality | O | O | O | O | O | O | O |
| Q5--I found the interior design and décor unpleasant | O | O | O | O | O | O | O |
| Q6--I was satisfied with the cleanliness of the restaurant | O | O | O | O | O | O | O |
| Q7--I would like to come back to this restaurant again | O | O | O | O | O | O | O |
| Q8--I would recommend this restaurant to others | O | O | O | O | O | O | O |
| Q9--I would say positive things about this restaurant to others | O | O | O | O | O | O | O |

**Please indicate your level of disagreement or agreement <u>regarding the DAILY SPECIAL MENU</u>:**

| | **Strongly Disagree** | | | **Neutral** | | | **Strongly Agree** |
|---|---|---|---|---|---|---|---|
| Q10--This restaurant's menu provides adequate information | O | O | O | O | O | O | O |
| Q11 --This restaurant's menu is unique from other restaurants offering similar cuisine | O | O | O | O | O | O | O |
| Q12 --The wordage on this menu is interesting | O | O | O | O | O | O | O |
| Q13--This restaurant's menu strongly influenced my purchase decision | O | O | O | O | O | O | O |
| Q14--I noticed the specific local-food wordage on the menu | O | O | O | O | O | O | O |

**Please indicate your level of disagreement or agreement with the following statements:**

| | **Strongly Disagree** | | | **Neutral** | | | **Strongly Agree** |
|---|---|---|---|---|---|---|---|
| Q15--I feel frustrated and angry when I think of industries that pollute the environment | O | O | O | O | O | O | O |
| Q16--When two products are similar, I tend to select the one that harms the environment less, even if it costs more | O | O | O | O | O | O | O |
| Q17--I refuse to purchase products sold by companies that seriously damage the environment | O | O | O | O | O | O | O |
| Q18--When purchasing products, I always select the ones that have some type of environmental certification, even if they are more expensive | O | O | O | O | O | O | O |
| Q19--I follow the key points of recycling and separate recycled waste at home | O | O | O | O | O | O | O |

197

Q20--I am often concerned about
    and seek environmental
    knowledge and information      O     O     O     O     O     O     O

Q21--It is important to me that a
    restaurant does its part to
    minimize environmental harm      O     O     O     O     O     O     O

Q22--There is not much that any
    one individual can do about
    the environment      O     O     O     O     O     O     O

Q23--The conservation efforts of
    one person are useless as long as
    other people refuse to conserve      O     O     O     O     O     O     O

Q24**--Did you purchase an item from the <u>DAILY SPECIAL MENU</u> today?    Yes ___No ___**

    <u>If NO</u>, briefly describe why_____

Q25--**Do you currently live in state?    Yes ____No __**

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Q26  **Education level:**

Less than high school degree_____

High school degree_____

Some college _____

Undergraduate degree_____

Graduate degree_____

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Q27 **Individual yearly income level:**

$39,999 or less_____

$40,000--$69,999 _____

$70,000--$99,999 _____

$100,000--$129,999 _____

$130,000 and above _____

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Q28 **Gender:**

Male_____

Female_____

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Q29 **Birth Year**:

_____