

Measuring Importance, Performance, and Frequency of Green Initiatives among North Carolina Bed and Breakfast Operators: A Pilot Study

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Abstract

A bed and breakfast (B&B) is a house or small hotel where someone can rent a room for a price that includes breakfast the next morning (Bed and Breakfast, 2012). According to Tsai (2008), green hotels are lodging facilities that use “operation techniques that have a low impact on the environment, while maintaining their business environment, to provide clients with green products (meals), green services (housekeeping), and living environments that are natural, healthy, clean, and comfortable” (p.286). In order to better understand the adoption of green practices within the NC B&B industry, the purpose of this study was to investigate, not only how important green initiatives are to owner/operators, but also how frequently they are performed. The research design that this study employed was a cross-sectional design, and an importance-performance analysis (IPA) was used to analyze the data. From the data gathered for this study, a list of most frequently used green practices of North Carolina B&Bs was generated. The results of the study showed that NC B&Bs are implementing green practices well in all categories, except for marketing.

Keywords: Bed and Breakfast (B&B), North Carolina (NC), Importance-Performance Analysis (IPA), Green Initiatives, Pilot Study

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Introduction

The green movement has become a business staple in industries throughout the economy. The 2009 GB Summit focused on “responsible leadership for a sustainable future” (p.1), with a focus on sustainable growth and climate change (Responsible Leadership for a Sustainable Future, 2009). The summit also discussed the encouragement of clean energy and energy efficiency (Responsible Leadership for a Sustainable Future, 2009). The New York Times has even created a blog specifically for the implementation of green initiatives. One blog entry stated that New Yorkers receive a tax rebate for utilizing low-flow toilets (Navarro, 2012). Another post gave tips to young consumers for smart energy consumption techniques (Witkin, 2011). A third entry discussed the harm each person’s plastic footprint leaves behind (Wassener, 2011). This current topic warrants research within the different industries of our economy, including bed and breakfasts.

A bed and breakfast (B&B) is a house or small hotel where someone can rent a room for a price that includes breakfast the next morning (Bed and Breakfast, 2012). The United States B&B industry is worth approximately \$3.4 billion, with about 17,000 inns in existence (Professional Association of Innkeeper International, 2010). According to Lanier and Berman (1993), a reasonable return on investment for B&Bs can be achieved by having a minimum of five rooms for people to rent on the property. The typical B&B has between four and eleven rooms, with six being the average number of rooms available for rent (Professional Association of Innkeeper International, 2010).

An importance-performance analysis (IPA) was completed to better understand the strengths and weaknesses of the North Carolina B&B industry in regards to green

practice implementation. A list of most frequently used practices was also generated from the data collected by the sample. In order to better understand the adoption of green practices within the NC B&B industry, this study sought to investigate, not only how important green initiatives are to owner/operators, but also how frequently they are performed.

Literature Review

Definition of a Bed and Breakfast

Lanier and Berman (1993) found that there are three main types of B&Bs. They are as follows:

Bed and Breakfast: A residence that is divided almost equally between home and lodging, with lodging given a higher priority. Usually offering four or five rooms, the majority are historical buildings. Bed and Breakfast Inn or Lodge: An accommodation with a primary use of providing transient lodging. Ranging in size from two to twenty rooms, such properties usually require large capital investment for renovations and amenities. Country Inn: Bed and breakfast inns that offer full meal service in addition to breakfast, often to persons who are not lodging guests (p. 16).

According to Lanier and Berman (1993), the majority of properties were originally built or purchased as private residences, but were later renovated into business establishments. Their research found that owners are usually well-educated, married couples with high family incomes. Lanier and Berman (1993) also discovered that there are three “generations” of bed and breakfast guests:

First generation guests are adventurers who would stay anywhere but never return to the same place twice. Second generation guests prefer to follow recommendations and demand certain features in their B&B. Third generation guests are the people that always return to the same inn (p. 18).

A typical innkeeper is between the ages of 30 and 65, with a higher concentration

between the ages of 40 and 50 years old (Lanier & Berman, 1993). In 1993, over three-fourths of the innkeepers surveyed were college graduates (Lanier & Berman, 1993). Also, most innkeepers were part of a couple and were resident owners of the property (Lanier & Berman, 1993). In fact, 72% of present-day inn owners are couples and 79% of owners live on premise (Professional Association of Innkeeper International, 2010).

According to Lanier and Berman (1993), the bed and breakfast industry has shown a slow, but steady growth in value. It has been found that 29% of American B&Bs are in rural locations, 23% are in urban locations, 5% are in suburban locations, and 43% are described as village locations (Professional Association of Innkeeper International, 2010). It is predicted that its lack of urban client base is the reason that the south's B&B industry will grow faster than that of other areas (Lanier & Berman, 1993). This prediction called the current research study to purpose, as North Carolina bed and breakfasts are a part of the rural south.

In addition, many bed and breakfast establishments are historic properties, or at the very least, are located in the historic district of the town in which they are situated. In fact, 36% of American B&Bs have achieved an "historical designation" by a local, state or national historic preservation organization (Professional Association of Innkeeper International, 2010). One interesting impact of B&Bs is that by turning old buildings into viable businesses, they make historic preservation affordable. Building preservation is a type of green practice, as it requires the reuse of an established product.

Defining a Green Hotel

According to Tsai (2008), green hotels are lodging facilities that use "operation techniques that have a low impact on the environment, while maintaining their business

environment, to provide clients with green products (meals), green services (housekeeping), and living environments that are natural, healthy, clean, and comfortable” (p.286). Han and Kim (2010) defined a green hotel as, “an eco-friendly lodging property that has implemented various green practices and institutes sound and environmentally friendly programs to protect the environment and reduce operational costs,” (p. 660). Jin-Soo, Li-Tzang, Heesup, and Yunhi (2010) included management decision making in their definition, “green hotels are environmentally friendly properties whose managers are eager to institute programs that save water, save energy, and reduce solid waste – while saving money – to help protect our one and only earth” (p. 902).

According to Pizam (2009), the green movement is “not a fad that will disappear in a short period of time” (p. 28). Some hotels market themselves as green in order to increase profit margins and clientele, while others do it conscientiously because they feel it is the right thing to do for the environment, as well as for future generations. The majority of lodging facilities market themselves as a green venue because “they can save money and get valuable recognition from customers and the community at large” (Pizam, 2009, p. 28). However, it is evident that with the high costs of energy and the depletion of the planet’s resources, hotels, like most other businesses, will have no other choice but to become green establishments; continuing the growing trend that will ultimately become a permanent feature of the lodging industry (Pizam, 2009).

In order to be economically viable, the green initiatives that hotels execute must create value for customers and improve profit margins, but not increase the operating costs of the establishment (Robinot & Glannelloni, 2010). Cost savings can be made by reducing the use of detergents, energy, and water, and by buying foods from local

producers (Robinot & Glannelloni, 2010). For example, the green practice of discouraging customers from changing their linens and towels every day is one that plays a dual role in the eco-friendly movement. Though the practice is designed to reduce the amount of detergent used and thereby reduce pollution, it also produces savings in terms of cleaning and housekeeping.

According to Tzschentke, Kirk, and Lynch (2008), the decision to become environmentally involved is a journey, influenced primarily by the development of environmental consciousness. Their study found that there is still a gap that remains between concern and behavior, as a high degree of environmental consciousness does not necessarily translate to the implementation of eco-friendly behaviors (Tzschentke, Kirk, & Lynch, 2008). The study suggests that the development of an environmental conscious alone will not cause an establishment to become eco-friendly. Rather, it is the development of an eco-friendly conscious, the use of eco-friendly methods in the home and then bringing them to the workplace, as well as a pure concern for the environment that causes small lodging entities to go green (Tzschentke, Kirk, & Lynch, 2008).

Client Response to Green Practices and Green Hotel Advertising

There have been many studies that have focused on the target market of a green lodging establishment. For example, it has been found that women are more likely than men to pay for an eco-friendly hotel (Han, Hsu, & Lee, 2009; Lanier & Berman, 1993). For women clientele, B&Bs appeal to a desire for safety and intimacy (Lanier & Berman, 1993). Females were found to be more open to the green movement because they are usually more sympathetic, open-minded, and tender-hearted than men (Han, Hsu, & Lee, 2009). Older consumers are interested in the green movement because they think it is the

right thing to do for future generations to come (Han, Hsu, & Lee, 2009). These studies suggest that older consumers and female consumers should be the target audience of all green hotel advertising campaigns.

According to Lanier and Berman (1993), business clientele seek a “home away from home” when they choose to stay at a B&B. Their research was supported by the research of Millar and Baloglu (2011); who found that business travelers were more willing to pay higher rates to stay at a green hotel. However, most business travelers do not pay for their own accommodations. Therefore, they may be less sensitive to the hotel’s average daily rate than leisure travelers (Millar & Baloglu, 2011).

According to Han, Hsu, Lee, and Sheu (2011), the eco-friendly attitudes of customers favorably affect hotel guests’ intentions to visit a green hotel, to spread positive word-of-mouth, and pay more for the initiatives. This means that if a consumer practices green initiatives at home, then they are more willing to stay in a green lodging establishment and refer their friends to a green hotel. Environmentally conscious customers are more likely to be female, younger, more educated, and earn more money than the average American (Han, Hsu, Lee, & Sheu, 2011). Also, experienced green consumers were found to be more enthusiastic about staying in a green hotel than inexperienced green consumers (Han, Hsu, Lee, & Sheu, 2011).

From previous research, we can conclude that older consumers, females, business travelers, and experienced green consumers are the audience of choice when trying to market an eco-friendly establishment. Hu (2012) indicated that the most effective strategy would be environmental advertising centered on the creation of emotional responses and environmental claims (Hu, 2012). This means that pictorial campaigns about how green

establishments help save the environment could be the best method of choice when trying to advertise to the specific audiences.

Another way to market a green lodging facility is to let it sell itself. The findings of Han and Kim (2010) suggest that service quality, satisfaction, and overall image have a significant positive relationship with revisit intention. Also, a customer's intention to revisit a green hotel becomes stronger with an increase in the number of prior visits to the hotel (Han & Kim, 2010). Their research was supported by a study conducted by Jin-Soo, Li-Tzang, Heesup, and Yunhi (2010) that investigated how a hotel's green image can influence behavioral intentions. They found that a green hotel's overall image does, in fact, contribute to (1) intention to revisit, (2) intention to offer a positive recommendation, and (3) willingness to pay a premium (Jin-Soo, Li-Tzang, Heesup, & Yunhi, 2010). Therefore, image and the overall quality of a guest's stay can influence the success of a green lodging establishment. Let the property and service of the green hotel sell itself to the audience of choice.

B&B Green Initiatives

According to Dodds and Holmes (2011), small hospitality businesses usually take part in recycling programs, water conservation programs, energy efficiency, air and water filtration systems, and the use of organic, local, and natural-grown food products.

According to DeFranco and Weatherspoon (1996), there are three major categories that lodging establishments should include in their list of green initiatives: energy, solid waste, and water. Those three categories can then be broken down even further into the nine key areas of an accommodation firm: guest-rooms, public areas, housekeeping, administration, general maintenance, appliance purchasing, laundry, grounds

maintenance, and vehicle maintenance (DeFranco & Weatherspoon, 1996). Some specific examples of green initiative techniques of the B&B industry are full washer/dryer laundry loads, temperature control programs, reusable utensils rather than disposable, paper reduction practices, and the purchase of eco-friendly cleaning products (DeFranco & Weatherspoon, 1996).

East Carolina University's Center for Sustainable Tourism (2011) found twelve key areas of eco-friendly initiatives in the lodging industry. These areas consist of, but are not limited to, solid waste management, freshwater consumption reduction, wastewater management, energy efficiency, and responsible purchasing (East Carolina University Center for Sustainable Tourism, 2011). This publication suggested a specific list of possible green practices in the lodging industry. These practices consist of, but are not limited to, placing recycling bins throughout the property, integrating green building designs for new construction and remodeling, buying products from local vendors, and purchasing energy efficient electronics, lighting, and appliances (East Carolina University Center for Sustainable Tourism, 2011).

Adoption of Green Initiatives by B&B Operators

Studies have found that the adoption of sustainability practices are more prevalent in larger companies, and that smaller companies, like B&B's, are lagging behind (Van Haastert & De Grosbois, 2010). According to Van Haastert and De Grosbois (2010), there are three major types of barriers dealing with the adoption of environmental practices in small hospitality businesses: budgetary constraints, lack of knowledge, and conflict with customer attitudes and expectations. Since the owners cannot identify the benefits, they have trouble justifying the initial cost of starting these practices. Some

barriers for B&Bs that keep them from becoming more active in the green movement include: time, effort, frustration, money, lack of resources, lack of customer demand, and lack of knowledge (Van Haastert & De Grosbois, 2010). The concept of a lack of customer demand supports the research of Tsai and Tsai (2008), who stated that most people have higher expectations for the quality of services offered by hotels, and that luxuries not directly associated with daily life are demanded by travelers. Therefore, B&B operators may be afraid to implement green initiatives, as they may dampen the customer's perspective about the quality of the Inn.

According to Graci and Dodds (2008) there are a significant number of B&Bs and inns that do not see the benefit, cost, or otherwise of implementing environmental initiatives. However, they believe that despite the start up costs and the possible lengthy return on investment associated with several green initiatives, the economic benefits over time can offset the cost of implementation (Graci & Dodds, 2008). O'Neill and Alonso (2009) stated that, while larger companies have introduced comprehensive programs to tackle a whole range of environmental issues, smaller hospitality enterprises have been slow to react to the need for change. Their results pointed out that while there is a high level of awareness of the importance of environmental sustainability in the B&B industry, there was a low level of understanding in terms of how this could best be carried out (O'Neill & Alonso, 2009). The result of Nicholls and Kang's (2012) research supports this claim, stating that there can be substantial differences between the perceived importance of environmental initiatives and their actual adoption or implementation.

There are also some motivators that cause B&B operations to go green. Han, Hsu, Lee, and Sheu (2011) found that green management could create tremendous competitive

advantage for a hotel by enabling brand differentiation, cultivating customer loyalty, and improving a hotel's reputation. The research of Van Haastert and De Grosbois (2010) supported this claim as well, stating that "the motivation for B&B's to practice green initiatives are a competitive advantage, cost savings, improved image of the business, reduced pollution, increased recycling, and the ability to apply for sustainability related discounts on insurance premiums" (p. 182). According to Tzschentke, Kirk, and Lynch (2004), B&B involvement in environmental activities may be driven by ethical and economic considerations. They found that many small inns adopt green practices as a way to save money, operate efficiently, and to simply do their part for society (Tzschentke, Kirk, & Lynch, 2004).

Lack of Research in the B&B Industry Regarding Green Initiatives

Dodds and Holmes (2011) showed that the highest levels of awareness and activity were in the traditional areas of reduction of waste, reduction of energy use, and water conservation, but that there is a lack of knowledge in other fields of eco-friendly practices. They also stated "there is a need for more information, research, and tools for owners in the B&B industry" (Dodds & Holmes, 2011, p. 492).

There is a misconception in the lodging industry that green initiatives are expensive to implement, but many eco-friendly projects require little expense at all (United States Small Business Administration, 2008). However, the return on investment can be substantial (Phillips & Phillips, 2011). For example, small businesses that invest strategically can cut utility costs 10% - 30% without sacrificing service, quality, style, or comfort – while making significant contributions to a cleaner environment (United States Small Business Administration, 2008). This cut in utility costs is only one of the many

ways that money and the environment can both be saved simultaneously. However, small enterprises, like B&B's, don't see the return on investment as quickly as large-chain hotels do.

According to Graci and Dodds (2008), there is a gap between green attitude and green action in the hotel industry. There seems to be awareness and intention in the B&B industry to pick up and utilize more green initiatives, but the number of inns that are actually carrying out those initiatives are low (Graci & Dodds, 2008). The research by Nicholls and Kang (2012) support this claim by finding that there can be substantial differences between the perceived importance of environmental initiatives and their actual adoption or implementation. In fact, they found that the properties surveyed appeared to be failing to put their principles into practice in the case of most environmental management techniques (Nicholls & Kang, 2012).

Theoretical Underpinning: The theory of planned behavior (Ajzen, 1991) states that attitudes toward a behavior, subjective norms, and perceptions of control impact intentions to perform/not perform a behavior and actual performance of a behavior (p. 179). This study seeks to better understand B&B owners/operators and their perception of the importance of green initiatives as well as their level of performance of these green initiatives (behaviors). As Azjen (1991) states, "it is at the level of beliefs that we can learn about the unique factors that induce one person to engage in the behavior of interest and to prompt another to follow a different course of action" (p. 206). Therefore, this study uses the theory of planned behavior as the foundation for investigating beliefs about the importance of green initiatives in the B&B industry and the level of performance of these practices.

There is a lack of research that has focused on the B&B industry, specifically that of green initiatives within the B&B lodging sector. However, since bed and breakfasts have over 17,000 establishments scattered throughout the U.S., worth an estimated 3.4 billion dollars, there is a need to research this sector of our economy (Professional Association of Innkeeper International, 2010).

An aim of this study is to bridge the information gap and make bed and breakfast operators more aware about green practices that they could be utilizing in their businesses. In order to better understand the adoption of green practices within the NC B&B industry, this study seeks to investigate, not only how important green initiatives are to owner/operators, but also how frequently they are performed. Therefore, the research questions for this study are as follows:

- RQ1: What is the relative importance of practicing green initiatives to NC B&B owners/operators?
- RQ2: What is the relative level of performance of NC B&B owners/operators in practicing green initiatives?
- RQ3: What are the most frequently used green initiative practices of NC B&Bs?

Methods

Research Design

The research design that this study employed was a cross-sectional design, which is used to study a subset of a population at one specific time in order to compare the differences among the results (cross-sectional study, 2013). The study also used an importance-performance analysis (IPA) to analyze the data. IPA breaks down a value

intention by classifying its most important attributes in two dimensions, that is, the importance of each attribute and judgments of its performance (Arbore & Busacca, 2011). The IPA research design fit the scope of this study well as it answered all three of the research questions that were posed.

Using the information given by the surveyed individuals, the importance-performance analysis plots each attribute on a cross-sectional grid (Arbore & Busacca, 2011). This approach to the importance-performance map is divided into quadrants once the mean importance and performance scores for each attribute are calculated and plotted (Eskildsen & Kristensen, 2006). Importance is on the x-axis of the grid, while performance is on the y-axis of the grid (Koh, Joanne, & Boger, 2010).

The upper left quadrant shows excellence in terms of importance, but lacks performance. Therefore, variables that fall into the upper left quadrant (quadrant I) require more concentration and attention from the organization, as the performance levels of the items in question are low. The upper right quadrant (quadrant II) shows excellence in both importance and performance. Consequently, all variables that are placed in this quadrant can be maintained within the organization. Variables that fall into the lower left quadrant (quadrant III) have a low priority within the organization, as they lack both importance and performance. The lower right quadrant (quadrant IV) could be considered possible overkill within the business, as the variables placed into this quadrant are performed well by management, but are not deemed important (Martilla & James, 1977).

Performance is typically evaluated on a rating scale whereas importance can be either rated by the respondents or estimated on the basis of performance (Eskildsen & Kristensen, 2006). This study used the rating method for both importance and

performance. Conclusions drawn on the importance/performance map are usually based upon the assumption that the performance of an attribute can be changed without this affecting the importance of the attribute (Eskildsen & Kristensen, 2006).

Sample

The sample for this study consisted of geographic representations from all three North Carolina regions: coastal plain, piedmont, and mountains. Forty-one inns represented the coastal plain region of North Carolina, 43 inns represented the piedmont region, and 131 inns represented the mountain region of the state. A total of 215 North Carolina bed and breakfasts were surveyed for this study. The high volume of B&Bs represented by the mountainous region of NC may have stemmed from the numerous tourism locales in the area that support the B&B industry.

Recruitment: The recruitment of bed and breakfast properties throughout the state was conducted via email. A database of North Carolina inns was generated after an extensive web search was completed. This database listed the name of the property, their email address, and the region where it is located.

From the database that was created, an introductory email was sent out to inform the owners/operators of the purpose of the research, as well as some basic information about what the survey would entail (i.e. length of time needed to complete the survey, how to access it, etc.). A week after the introductory email was sent out, the first round of surveys were dispersed. Each inn was sent the hyperlink needed to access the survey online. After the initial round of the survey was launched, two reminder emails to complete the survey were sent, followed by a note of thanks.

The 215 surveys were distributed, 71 were completed, and a response rate of 33% was achieved. Of the 71 surveys that were completed, 41 were usable. Jeong (2004) found that, “Survey Sampling, Inc. (SSI), a Connecticut-based research company specialized in survey sampling and administration, reported that a typical online survey resulted in response rates of 3-8 percent on the basis of its experience with more than 600 electronic surveys,” (p.37). Therefore, the response rate for this research study was deemed acceptable.

Survey Instrument

The survey for this study was created from three pieces of literature: Go Green: An Environmental Checklist for the Lodging Industry (DeFranco & Weatherspoon, 1996), Sustainable Tourism Practices Checklist: for the Lodging Industry (East Carolina University Center for Sustainable Tourism, 2011), and Trash Talk: Waste Reduction at Bed and Breakfasts (East Carolina University Center for Sustainable Tourism, 2012). The first two publications were examples of green practices that would be applicable to the lodging industry as a whole, while the third publication set the framework of what was relevant to bed and breakfasts in particular.

The survey consisted of 29 items for the bed and breakfast owners/operators to rate for their properties based on the two variables of importance and performance. The survey questioned the green practices that are important to them, as well as how well they perform the initiatives for their properties. A 5-point Likert scale was used throughout the survey. The importance scale was anchored at (1) not important to (5) very important. The performance scale was anchored at (1) do not practice to (5) excellent. Based on

average rankings from the sample, a list of most frequently used green initiative techniques and IPA plots were generated.

The survey also collected demographic information. There were 11 items in this portion of the survey. Some of the demographic questions included the number of guestrooms on the property, occupancy percentage for 2012, average daily rate for 2012, and the owners' years of experience within the B&B industry.

Reliability & Validity: Face validity was assessed before the survey was sent out to the sample. The Penguin Dictionary of Psychology defines face validity as “validity assessed by having experts or lay people review the contents of a test to see if they seem appropriate on the surface. It really is a rather fuzzy procedure for validating a test, and, because of inherent subjectivity, is typically used only during the initial phases of test construction” (validity, face, 2009).

In order for face validity to be achieved, a draft of the survey was sent out during the preliminary stages of the research to five different individuals, composing the expert panel. Two panel members were survey design experts, two panel members were sustainable tourism experts, and one member was an innkeeper and B&B industry expert. The opinions and edits of all five members were considered, and changes were made to the survey before sending it out to the sample.

Reliability was assessed with Cronbach's alpha. This reliability coefficient usually ranges between 0 and 1. The closer the coefficient is to 1, the greater the consistency of the variable. George and Mallery (2003) provide the following rules of thumb when interpreting the Cronbach's alpha reliability coefficient: “ $\alpha > .9$ – Excellent, $\alpha > .8$ – Good, $\alpha > .7$ – Acceptable, $\alpha > .6$ – Questionable, $\alpha > .5$ – Poor,

and $\alpha < .5$ – Unacceptable” (p.231). For this study’s 29-item instrument, Cronbach’s alpha was 0.934, thus supporting its reliability. Table 1 shows the reliability coefficients for each of the green initiative categories, as well as the instrument as a whole.

Table 1: Reliability Coefficients

Category	Reliability Coefficient
Energy Efficiency	0.870
Water Conservation	0.855
Solid Waste Management	0.848
Local Community Efforts	0.807
Marketing	0.853
Total Study	0.934

Data Analysis Techniques

Statistical Package for the Social Sciences (SPSS) was the data analysis program used for this study. There are three basic steps involved in data analysis using SPSS (Brace & Snelgar, 2000). The first step is entering the raw data into the software package and saving it to a file. The second step is selecting and specifying the analysis that the study requires. And, the third step involves examining the output produced by SPSS (Brace & Snelgar, 2000). Descriptive statistics, specifically means and standard deviations, were calculated for all 29 green initiatives. These were then plotted on the IPA grid and used to develop a list of the most frequently used green practices. Demographic factors were also analyzed and are reported below.

Results

Sample

Approximately 78% of the North Carolina innkeepers that were surveyed were between the ages of 50 and 69. The sample also reported to have industry experience of up to 23 years, with six months being the shortest amount of experience. Roughly 56% of

the innkeepers surveyed have been a part of the B&B industry for 2-7 years. Tables 2 and 3 reflect the responses given by the sample for the demographic questions of age and industry experience.

Table 2: NC B&B Owner/Operator Ages (N = 41)

Age Range	Percentage
20 – 29	2.5%
30 – 39	5.0%
40 – 49	7.5%
50 – 59	47.5%
60 – 69	30.0%
70 – 79	5.0%
80+	2.5%

Table 3: NC B&B Owner/Operator Industry Experience (N = 40)

Years of B&B Industry Experience	Percentage
< 1 year	2.4%
1 – 2 years	16.9%
3 – 4 years	9.6%
5 – 6 years	24.2%
7 – 8 years	12.1%
9 – 10 years	4.9%
11 – 12 years	4.9%
13 – 14 years	4.9%
15 – 16 years	2.4%
17 – 18 years	7.3%
19 – 20 years	4.9%
> 20 years	2.4%
No Response	3.1%

The properties contained different numbers of guestrooms, ranging from 2 – 17. Approximately 68% of the properties surveyed had 4 – 8 rooms. Though the properties were built between 1790 and 2005, precisely 50% of the sample claimed to be a historic or landmark property. All of the B&Bs surveyed were non-smoking establishments. Tables 4 – 6 reflect the responses given by the sample for the demographic questions of number of guestrooms, when the properties were built, and other property attributes.

Table 4: NC B&B Number of Guestrooms (N = 40)

Number of Guestrooms	Percentage
1 – 2	7.2%
3 – 4	26.4%
5 – 6	28.8%
7 – 8	16.8%
9 – 10	2.4%
11 – 12	2.4%
13 – 14	2.4%
15 - 16	4.8%
17	4.8%
No Response	4.0%

Table 5: When NC B&B Properties Were Built (N = 40)

Year Property Was Built	Percentage
1790 – 1839	9.7%
1840 – 1889	10.8%
1890 – 1899	12.0%
1900 – 1910	15.7%
1911 – 1920	12.0%
1921 – 1930	9.6%
1931 – 1940	4.9%
1941 – 1950	0.0%
1951 – 1960	0.0%
1961 – 1970	0.0%
1971 – 1980	2.4%
1981 – 1990	2.4%
1991 – 2000	12.0%
2001 – 2010	4.8%
No Response	3.7%

Table 6: Property Attributes (N = 41)

Property Attribute	Percentage
Historic or Landmark Property	50.0%
Non-Historic or Landmark Property	50.0%
Smoking Permitted on Property	0.0%
Smoking Not Permitted on Property	100.0%

While the properties' occupancy percentages ranged from 20% - 89%, roughly 49% of the sample has occupancy percentages between 30% and 59%. The mean

occupancy percentage for this study was 47.6%. The average daily rate (ADR) of the properties surveyed ranged from \$80 - \$300. Approximately 61% of the average daily rates for the study's sample were between \$90 and \$159. The mean ADR for this study was \$140.60. Tables 7 and 8 reflect the responses given by the sample for the demographic questions of occupancy percentage and ADR.

Table 7: NC B&B Occupancy Percentages (N = 31)

Occupancy Percentages	Percentage
20% – 29%	9.6%
30% – 39%	12.0%
40% – 49%	19.2%
50% – 59%	16.8%
60% – 69%	9.6%
70% – 79%	2.4%
80% – 89%	4.8%
No Response	25.6%

Table 8: NC B&B Average Daily Rate (ADR) (N = 34)

Average Daily Rate	Percentage
\$80 – \$99	9.6%
\$100 – \$119	21.6%
\$120 – \$139	14.4%
\$140 – \$159	16.8%
\$160 – \$179	9.6%
\$190 – \$209	4.8%
\$270 – \$309	4.8%
No Response	18.4%

The sample of this study was questioned about how green they consider themselves, as well as their properties. Approximately 2.4% of the sample stated that they were not green individuals. Most NC B&B owners/operators (56.1%) were somewhat green individuals. A good portion of the sample (36.6%) considered themselves to be green individuals, and 4.9% claimed that they were very green individuals. Roughly 4.9% of the sample claimed that they did not have green properties. The majority of the sample

(63.4%) claimed that they were somewhat a green property. A total of 26.8% considered themselves to be green properties, and 4.9% of the sample stated that they are very green properties. Tables 9 and 10 reflect the responses given by the sample for the demographic questions related to the level of personal green practice implementation in the homes of the owners/operators, as well as at their properties.

Table 9: Green Implementation Level of NC B&B Owners/Operators (N = 41)

Green Level of the Individual	Percentage
Not Green	2.4%
Somewhat Green	56.1%
Green	36.6%
Very Green	4.9%

Table 10: Green Implementation Level at NC B&B Properties (N = 41)

Green Level of the Property	Percentage
Not a Green Property	4.9%
Somewhat a Green Property	63.4%
A Green Property	26.8%
A Very Green Property	4.9%

Assessing the Research Questions

There were 29 green practices that were analyzed to identify the importance and performance levels of each initiative. The results of this analysis are displayed in Table 11. There were five major categories from which the 29 practices were distributed: energy efficiency, water conservation, solid waste management, local community efforts, and marketing.

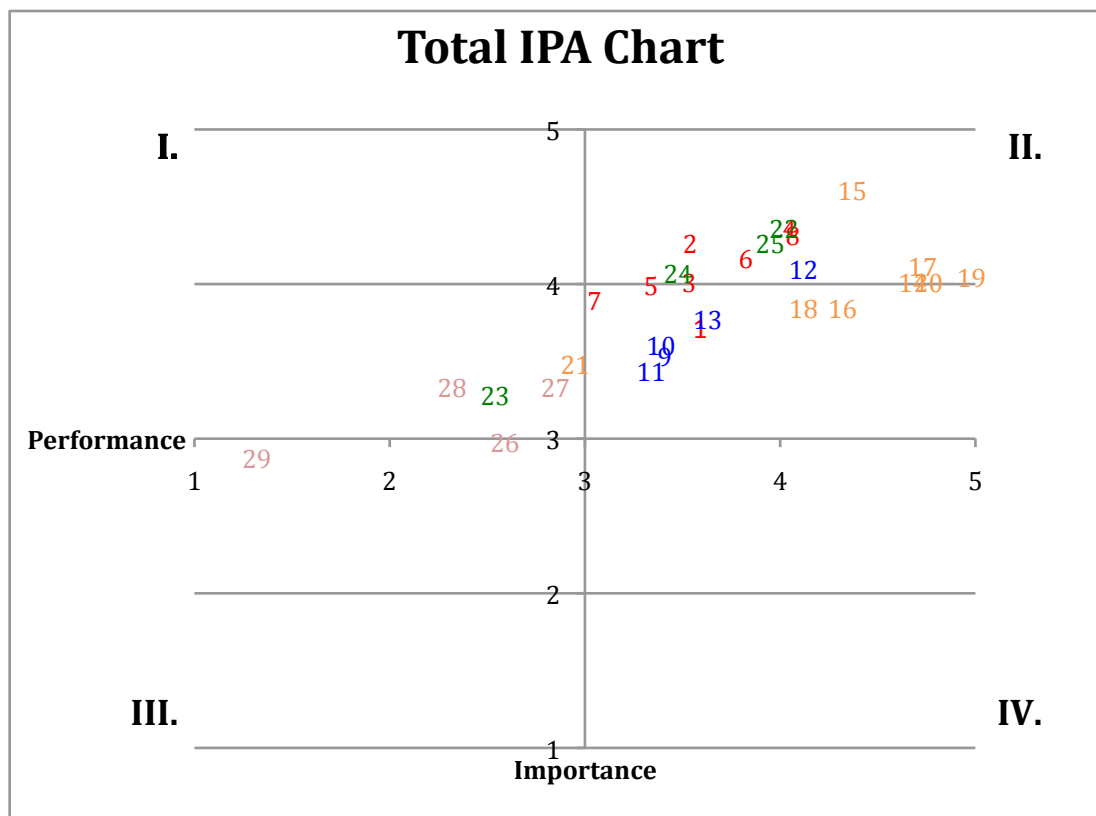
Table 11: Survey Item Results

	Survey Item	Mean Importance Rating	Importance Standard Deviation	Mean Performance Rating	Performance Standard Deviation
Energy Efficiency					
1	Energy consumption monitored	3.73	1.025	3.59	0.999
2	Energy efficient window techniques	4.27	0.633	3.54	1.120
3	Temperature control program	3.98	1.084	3.51	1.325
4	Efficient electricity consumption	4.37	0.662	4.05	0.921
5	Renewable and/or efficient systems	4.00	1.000	3.34	1.153
6	Energy efficient lighting	4.17	0.892	3.83	0.946
7	Integrate green building techniques	3.90	1.114	3.05	1.431
8	Buy energy efficient electronics & appliances	4.32	0.789	4.07	0.959
Water Conservation					
9	Low-flow showerheads in guestrooms	3.54	1.306	3.41	1.360
10	Low-flow toilets throughout property	3.61	1.202	3.39	1.394
11	All appropriate faucets have aerators	3.44	1.163	3.34	1.389
12	Towel & linen reuse program in guestrooms	4.10	1.068	4.12	1.187
13	Use water efficient irrigation practices	3.78	1.235	3.63	1.479

Solid Waste Management					
14	Use reusable housekeeping products	4.02	0.961	4.68	1.474
15	Use of a recycling program	4.61	0.703	4.37	1.318
16	Provide & publicize recycling bins	3.85	1.333	4.32	1.903
17	Implement paper reduction practices	4.12	1.144	4.73	1.467
18	Use of eco-friendly products	3.85	1.236	4.12	1.418
19	Bulk purchasing	4.05	0.893	4.98	1.012
20	Responsible purchasing of durable goods	4.02	1.012	4.76	1.374
21	Implement a composting program	3.49	1.344	2.95	2.061
Local Community Efforts					
22	Purchase local foods, products, & services	4.37	0.915	4.02	0.851
23	Allow local artists to sell and/or display their art	3.29	1.383	2.54	1.567
24	Form partnerships with local businesses	4.00	1.140	3.49	1.267
25	Give donations to local charities	4.27	0.923	3.95	1.048
Marketing					
26	Promotion of green practices via signage	2.98	1.313	2.59	1.500
27	Green claims are verifiable by customers	3.34	1.087	2.85	1.459
28	Advertising of green practices via website	3.34	1.153	2.32	1.439
29	Participate in a green certification or recognition program	2.88	1.187	1.32	0.934

Importance-Performance Maps: The importance-performance map for the complete set of data is provided in Figure 1. The four quadrants must be considered before beginning the analysis. Most of the items for this study fell into quadrant II (keep up the good work). This quadrant exhibits that the B&B is performing the practices well and that the owners/operators find the initiatives important to their business. Only a few of the variables fell into quadrant I (concentrate here), two variables fell into quadrant III (low priority), and zero items were placed into quadrant IV (possible overkill). This demonstrates that the sample of the study is doing well in the performance of the practices that they found to be important.

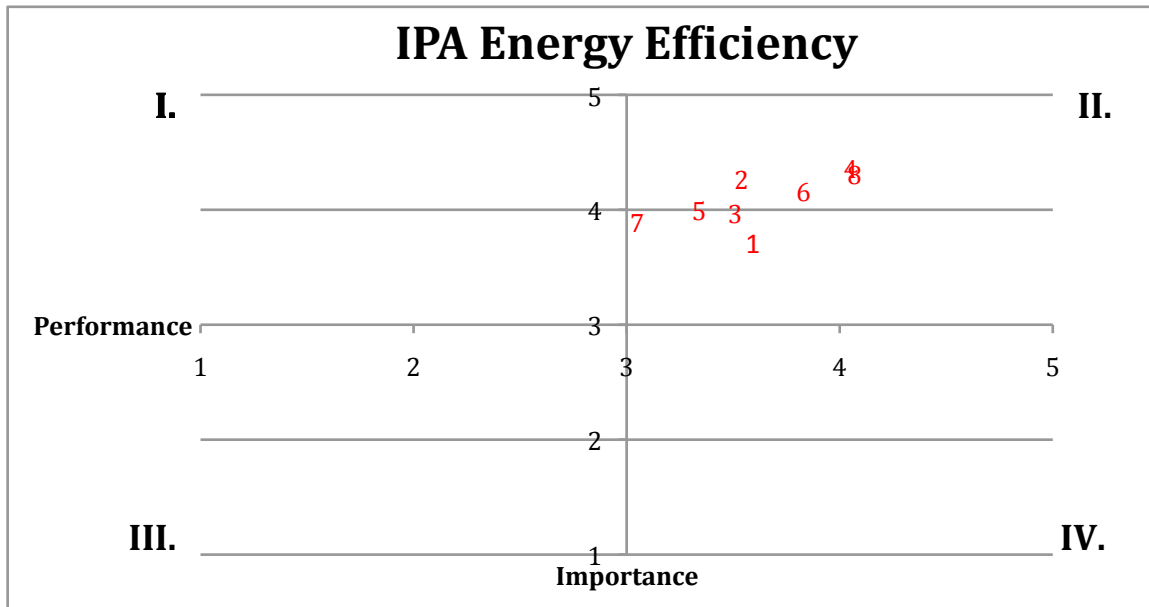
Figure 1: Total IPA Chart



Since a lot of the values for this study were similar, each of the five categories (energy efficiency, water conservation, solid waste management, local community

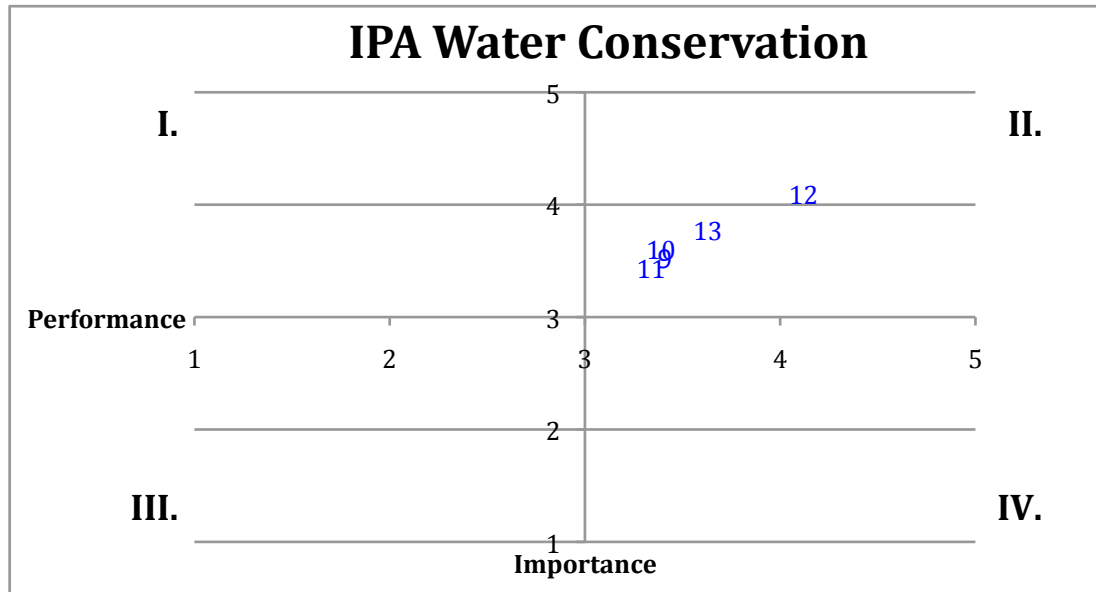
efforts, and marketing) will be displayed separately in Figures 2 – 6. This will ensure clarity of the results. The importance-performance chart of energy efficiency can be found in Figure 2.

Figure 2: IPA Energy Efficiency



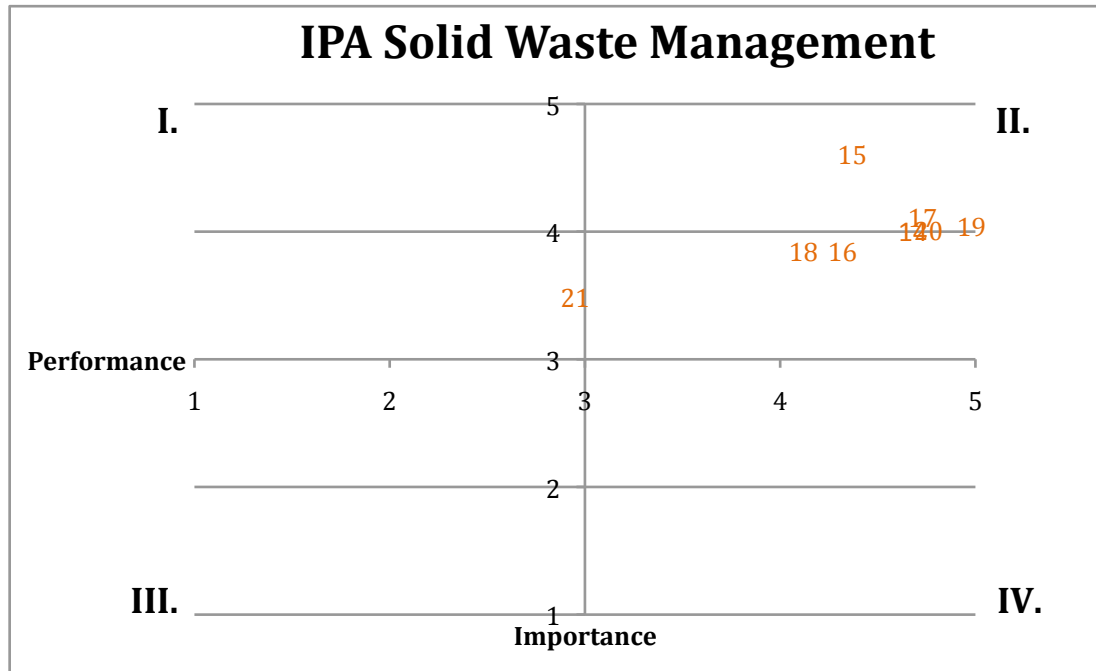
All of the items for energy efficiency fell into quadrant II (keep up the good work). This demonstrates that NC B&B owners/operators feel that energy efficiency is important and perform the practices of this initiative effectively. Figure 3 is the importance-performance plot of water conservation.

Figure 3: IPA Water Conservation



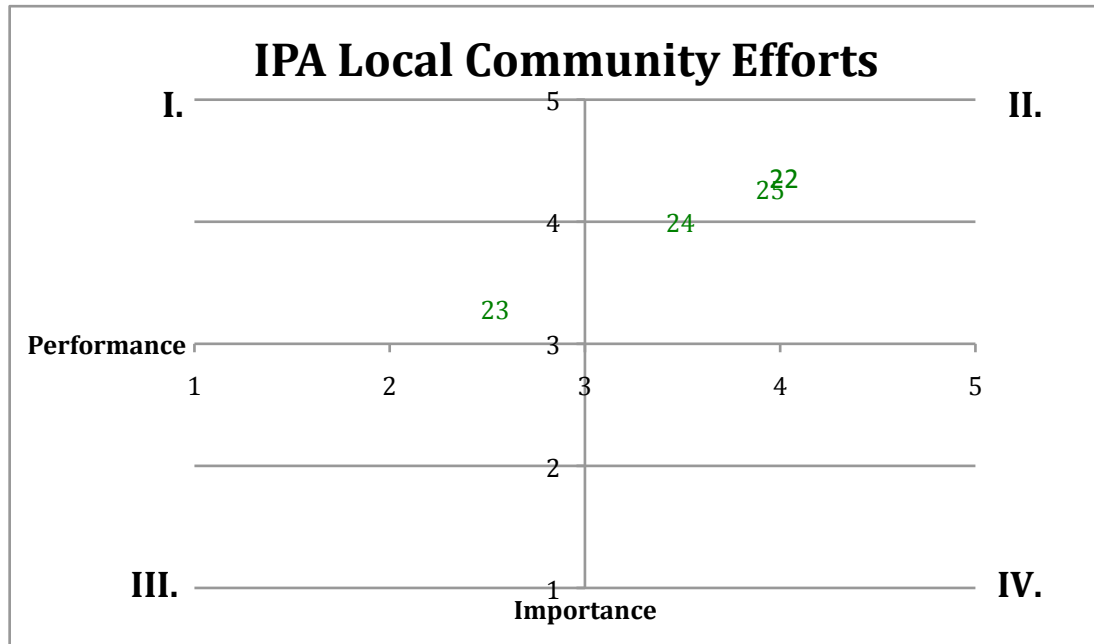
All of the items for water conservation were placed into quadrant II (keep up the good work). This exhibits that B&B properties of North Carolina are conscientious about conserving water, just as they are about energy efficiency. This demonstrates that NC B&B owners/operators feel that water conservation is important and perform the practices of this initiative effectively. The importance-performance chart of solid waste management can be found in Figure 4.

Figure 4: IPA Solid Waste Management



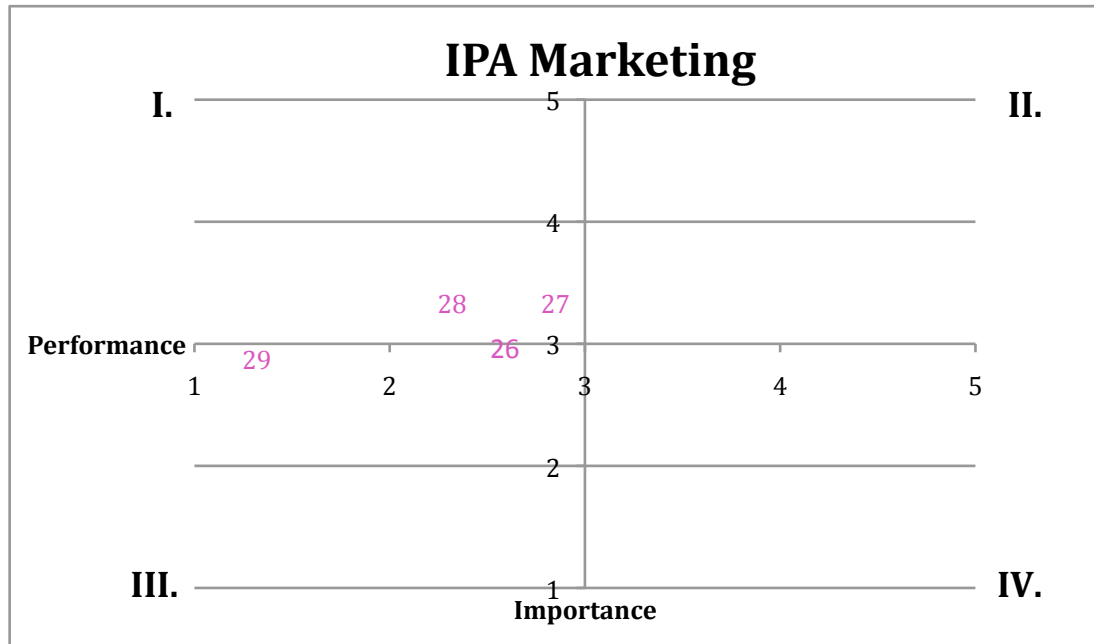
Only one of the eight items in the solid waste management category was placed outside of quadrant II (keep up the good work). Item 21, the implementation of a composting program, was placed into quadrant I (concentrate here). For the majority of items in this category, the properties showed high levels of importance and performance. The IPA map for local community efforts can be found in Figure 5.

Figure 5: IPA Local Community Efforts



Only one of the four variables in the local community efforts category fell outside of quadrant II (keep up the good work). Item 23, allowing local artists to display and/or sell their handicrafts at the property, was found in quadrant I (concentrate here). For the sample of this study, the use of local products, goods, and services was found to be both important and performed well. Figure 6 displays the IPA chart for the marketing category of this study.

Figure 6: IPA Marketing



Two of the four items in the marketing category fell into quadrant I (concentrate here), while the other two fell into quadrant III (low priority). This category of the study displays a lack of importance and performance in the area of green initiative marketing within the sample of NC B&Bs. Item 29, participating in a green certification or recognition program, ranked the lowest of all in terms of priority to the property. Item 26, the promotion of green practices via signage, was also placed in quadrant III (low priority). Items 27, green claims are verifiable by customers, and 28, advertising of green practices via website, require a little more focus and attention from the NC B&B sample. The owners/operators of the properties felt that it was important for their green claims to be verifiable by their customers, but their performance of that practice was relatively low. This supports previous research that found a gap between the intention and awareness of green initiatives and the actual adoption and implementation of the practices (Nicholls & Kang, 2012; Graci & Dodds, 2008). The operators also felt that it is important to promote

the property's green practices via the B&B's website, but their performance level of this item was low as well.

Most Frequently Used Practices: From the data gathered for this study, a list of most frequently used green practices of North Carolina B&Bs was generated. For the category of energy efficiency, efficient electricity consumption ranked highest. A total of 97.6% of the sample ensures that their properties are efficiently consuming electricity. One example of the way they monitor this is by making certain that lights, radios, and televisions are turned off in all unoccupied rooms. Additionally, the lowest ranked practice in the category of energy efficiency was the integration of green building techniques into new construction, remodeling, and restorations. This item was performed by only 73.2% of the sample.

For the category of water conservation, a guestroom towel and linen reuse program was the most prevalent initiative to NC B&Bs. This practice ranked highest in the category of water conservation and is executed by 92.7% of the sample in this study. The lowest ranked practice of the water conservation category was the use of efficient irrigation techniques. This item was performed by 80.5% of the properties surveyed.

For the category of solid waste management, bulk purchasing was ranked the highest out of that group. Again, 97.6% use bulk purchasing within their B&B business. The lowest ranked initiative of the solid waste management category was the use of a composting program. This item was only performed by 58.5% of the sample.

For the category of local community efforts, giving donations to local charities ranked highest among the B&Bs of this study. As the highest local community effort, this practice is used by 97.6% of the sample. The lowest ranked item within the category of

local community efforts was allowing local artists to display and/or sell their handicrafts and artwork onsite at the property. Only 58.5% of the sample allowed local artists to do so.

The marketing category of this study ranked low overall. The highest ranked practice of making green claims verifiable by customers is only used by 65.9% of the sample. On the other end of the spectrum, the lowest ranked practice of participating in a green certification or recognition program is only carried out by 14.6% of the properties that were surveyed. A complete list of the green practices in question, and their rankings in the list of most frequently used initiatives, can be found in Table 12.

Table 12: List of Most Frequently Used Green Practices for NC B&Bs

Green Initiative Ranking	Green Practice	Green Practice Category	Percent of the Sample that Implements the Practice
1	Efficient electricity consumption	Energy Efficiency	97.6%
2	Bulk purchasing	Solid Waste Management	97.6%
3	Give donations to local charities	Local Community Efforts	97.6%
4	Energy efficient window techniques	Energy Efficiency	95.1%
5	Renewable and/or efficient systems	Energy Efficiency	95.1%
6	Energy efficient lighting	Energy Efficiency	95.1%
7	Buy energy efficient electronics & appliances	Energy Efficiency	95.1%
8	Use of a recycling program	Solid Waste Management	95.1%
9	Responsible purchasing of durable goods	Solid Waste Management	95.1%
10	Purchase local foods, products, & services	Local Community Efforts	95.1%
11	Energy consumption monitored	Energy Efficiency	92.7%
12	Towel & linen reuse program in guestrooms	Water Conservation	92.7%
13	Use reusable housekeeping products	Solid Waste Management	92.7%
14	Implement paper reduction practices	Solid Waste Management	92.7%

15	Use of eco-friendly products	Solid Waste Management	92.7%
16	Form partnerships with local businesses	Local Community Efforts	90.2%
17	Low-flow showerheads in guestrooms	Water Conservation	87.8%
18	Low-flow toilets throughout property	Water Conservation	87.8%
19	Temperature control program	Energy Efficiency	85.4%
20	All appropriate faucets have aerators	Water Conservation	82.9%
21	Provide & publicize recycling bins	Solid Waste Management	82.9%
22	Use water efficient irrigation practices	Water Conservation	80.5%
23	Integrate green building techniques	Energy Efficiency	73.2%
24	Green claims are verifiable by customers	Marketing	65.9%
25	Implement a composting program	Solid Waste Management	58.5%
26	Allow local artists to sell and/or display their art	Local Community Efforts	58.5%
27	Promotion of green practices via signage	Marketing	58.5%
28	Advertising of green practices via website	Marketing	53.7%
29	Participate in a green certification or recognition program	Marketing	14.6%

Discussion

Synopsis

This research project sought to answer questions about the importance and performance of green initiatives in NC B&Bs. IPA grids were compiled and the results of the analysis will be discussed below. While compiling the IPA analysis results, the study also created a list of most frequently used green initiatives of the NC B&B industry. Therefore, in order to better understand the adoption of green practices within the NC B&B industry, this study sought to investigate, not only how important green initiatives are to owner/operators, but also how frequent and well they are performed.

Assessing the Research Questions

The first research question of this study asked what the relative importance of practicing green initiatives was to NC B&B owners/operators. From the data that was compiled via the electronic survey, an IPA grid was generated. From all of the items in question, only two fell below the importance midpoint (< 3) on the IPA grid. The first item was number 26, the promotion of green practices via signage. This item was deemed slightly unimportant by the B&Bs that were surveyed, which may be because the owners/operators didn't want to take away from the aesthetic appeal of the property. Signage can add to a B&B's charm when used in the correct way. But, since most of the sample for this study owned historic properties, they may not want the corporate-look of green signage displayed throughout their inns. Additionally, the promotion of green practices was not carried out well in general among the sample. Therefore, using signage as a marketing tool is likely not a priority.

The second item that fell below the importance midpoint on the IPA grid was number 29, the participation of the B&B with a green certification or recognition program. This item may have been deemed unimportant because the owner/operator may have a lack of understanding of what is involved, the expense, and resultant benefits of being affiliated with a green certification/recognition program. Also, becoming a member of such a program may come with too many challenges or too hefty an initial investment for historic inns to deem necessary for their businesses. Furthermore, the sample of this study may not be concerned with meeting a 3rd party's set of standards. They may simply practice green initiatives because they believe it is the right thing to do. This presents an opportunity to state granting offices to educate and promote their certification programs and its benefits to the community.

The second research question of this study asked what the relative performance level was of NC B&B owners/operators practicing green initiatives. Only 6 of the 29 items on the electronic survey fell below the performance midpoint (< 3) on the IPA grid. The first item that fell short in terms of performance was number 21, the implementation of a composting program. The lack of performance with this item may be because of a spacing issue on the property or a lack of knowledge in how to create, build, or implement a composting program into their businesses. Another barrier to the implementation of this practice could be the time investment that it takes to create a compost. There is a misconception that composts take up lots of land and valuable space, when in fact they can be as small as a few feet in each direction. The second item that was performed poorly was number 23, allowing local artists to sell and/or display their art or handicrafts. The sample of this study may be performing this item poorly because

they do not want the liability of the artwork on their properties, as well as the space it takes to display the artists' handiwork.

Number 26, the promotion of green practices via signage, was the third item that fell short of the performance midpoint. This item may have fallen short in terms of performance because it also fell below the importance midpoint on the IPA grid. Therefore, since it was not deemed important to the B&B owner/operators that were surveyed, they also did not perform the practice well. The fourth item that was performed poorly was number 27, the practice of making sure that green claims are verifiable by customers. This practice makes sure that the B&B is being honest with its claims. Therefore, even though the sample thought that this practice was important to their business, they did not perform it as well as they could have. However, the owners/operators may not have performed this practice well because they haven't asked any customers to verify or complete a survey attesting to the implementation of the businesses' green initiatives. Also, the B&B owners/operators may not have ever been asked by guests to verify their green claims; therefore they may feel as if they do not perform the practice well.

The fifth item that fell short of the performance midpoint was number 28, the advertisement of green practices via website. Promoting the utilized green practices on the property's website would certainly be a marketing tool, but the B&Bs that were surveyed did not deem this practice necessary to perform well. A connection between utilizing green practices and marketing the property has not been made. Many owners/operators use their websites to promote and market their properties, and connecting with their prospective clientele is of the utmost importance. Green initiatives

and environmental stewardship are two great ways to do so. The sixth and final item that fell below the performance midpoint (< 3) was number 29, the participation of the B&B with a green certification or recognition program. This item, like number 26, may have fallen short of the performance midpoint because it also fell short of the importance midpoint in the IPA grid. Therefore, since this practice was not deemed important by the sample, the item was also not performed well.

The third research question of this study asked what the most frequently used green initiatives were of NC B&Bs. A full listing of the ranked 29 items can be found in the results section of this study. However, the top ten most frequently used practices will be discussed in depth below. The top-ten list of green initiatives for NC B&Bs can be found in Table 13.

Table 13: Top Ten List of Most Frequently Used Green Practices for NC B&Bs

Green Initiative Ranking	Green Practice	Green Practice Category	Percent of the Sample that Implements the Practice
1	Efficient electricity consumption	Energy Efficiency	97.6%
2	Bulk purchasing	Solid Waste Management	97.6%
3	Give donations to local charities	Local Community Efforts	97.6%
4	Energy efficient window techniques	Energy Efficiency	95.1%
5	Renewable and/or efficient systems	Energy Efficiency	95.1%
6	Energy efficient lighting	Energy Efficiency	95.1%
7	Buy energy efficient electronics & appliances	Energy Efficiency	95.1%
8	Use of a recycling program	Solid Waste Management	95.1%
9	Responsible purchasing of durable goods	Solid Waste Management	95.1%
10	Purchase local foods, products, & services	Local Community Efforts	95.1%

The initiatives listed above, in descending order of implementation percentage, represent the top ten practices of the sample of NC B&Bs. These ten practices may be the most popular because they are familiar, easy to implement, save money, and produce a return on investment. The energy efficiency category took up 50% of this list. This may simply be because these practices help save the most money and have the quickest return on investment. The use of energy efficient window techniques, such as blinds, drapes, and weather-stripped windowsills, are cost effective and usually produce immediate results that are quantifiable on an energy bill. Therefore, it wasn't a surprise that this category took up most of the top-ten list.

The solid waste management category had three items in the top-ten list. This may be because the use of a recycling program is very familiar and the purchasing durable goods is an easy practice to perform. Bulk purchasing also helps tremendously in terms of cost savings. One of the most common green practices, recycling, may have become so prevalent because most cities assist the initiative via specific recycling pickup days and separate recycling bins from regular household waste bins. Overall, solid waste management was expected to be performed well and implemented frequently.

The local community efforts category took two spots in the top-ten list. The successful implementation of the initiatives in this category made sense because the B&Bs are investing in the communities in which they serve. The purchasing of local foods, products, and services benefits the local economy and, inadvertently, the business of the B&B. However, perhaps the most influential reason that motivates B&Bs to support the local economy is because it has become so popular and effortless to do so.

Programs such as Locavore influence the consumption of foods that are produced within a 100-mile radius. The green movement has introduced Americans to the “farm to table” mindset; where products are produced naturally and sold fresh to local consumers. The NC B&B industry has caught on to this trend and has rightfully followed suite.

It was interesting to find that the water conservation category wasn't a part of the top-ten list. The use of a towel and linen reuse program in guestrooms was the closest by taking the #12 spot. Though this practice is common in the lodging industry, some inns may not utilize this initiative because they don't want to take away from the experience that their guests have become accustomed. Also, some of the other practices in the water conservation category have a high initial investment cost that some properties may not deem necessary. For example, purchasing new faucet aerators and a new low-flow irrigation system may produce a cost too hefty for the inn to adopt and implement.

Though it was surprising to find water conservation practices outside of the top-ten list, the marketing category's lack of importance and performance to the sample in answering the first two research questions posed in this study were precursors to the low level of implementation in the list of most frequently used green practices. The practice of making green claims verifiable by customers was the highest-scoring initiative of the marketing category; which took the #24 spot out of 29 practices. The marketing category's implementation rates varied from 65.9% - 14.6%. These results support the research conducted by Dodds and Holmes (2011), which claimed that B&Bs lacked knowledge in eco-friendly fields outside of the realms of waste reduction, energy efficiency, and water conservation. This study also supports the idea that marketing needs to be a focus of NC B&B businesses in order for growth to occur (Hu, 2012; Hudson &

Gilbert, 2006). As previously stated, a connection between the use of green practices and marketing among NC B&B properties has not been made. However, the promotion of green initiatives and environmental stewardship may be a great way for NC B&Bs to better connect with environmentally focused clients.

Implications

One suggestion that could be made from the conclusion of this study is for green agencies (sustainable tourism firms, eco-friendly lodging firms, and green 501c3 nonprofits) to become more engaged in the green actions of B&Bs. For example, sustainable leaders in the state of North Carolina could try to encourage NC B&B owners/operators to make knowledgeable choices about adopting new green initiatives, such as composting or participating in a green certification or recognition program. North Carolina green agencies should engage the NC B&B industry, as they are an active and dynamic sustainability group of the economy. If the state would make such a relationship with this industry, the B&Bs could carry the sustainability message to other tourism locales.

Another conclusion from this study is that NC B&Bs are practicing green initiatives simply because they feel it is the right thing to do. Their low implementation percentage of participating in a green certification or recognition program could be embedded in the fact that they may not be concerned with meeting a 3rd party's set of standards. Therefore, an internal motivation to adopt the green movement into their businesses could be the NC B&B industry's sole motivation for implementation.

A final implication of this study is the need of NC B&B owners/operators to use their competitive advantage to market and sell the B&B. A connection between the

consumer and the benefits of the product should include environmental stewardship and green practices. Guestroom amenities such as wireless internet access and the size of the bed are often mentioned on the property's website. However, green practices should also be an attribute that NC B&Bs strive to capitalize. Green initiatives can be used as a marketing tool and an avenue of connecting better with their green-conscious clientele. Nevertheless, since NC B&Bs aren't marketing their green attributes, owners/operators may just be implementing them because they feel it is the right thing to do. This connects back to the thought that their utilization of green initiatives is internally motivated and not externally driven.

Limitations

The sample size was a limitation of this study. Even though the response rate of the study was 33%, the sample size was not big enough to allow the results to be generalizable. In addition, the concentration of this study to one location makes the results less generalizable to the B&B industry as a whole. The scope of the study was limited to just the state of North Carolina. As such, the results may have been different if the entire North American B&B industry was included. This study also did not seek non-respondent information. With this information, the study would have gained a better understanding of why NC B&Bs are motivated to implement green initiatives. Single-source bias was the final limitation of this study.

Future Research

There are many possible research topics that could expand on this study. The instrument for this study was supported as reliable and valid and therefore should be used in future studies focusing on green initiatives of B&B owners/operators. Moving this

pilot study forward and using this instrument, this research should be reproduced throughout the continental United States. After this replication occurs, many comparisons could be made and a better understanding of the national scope of green practices among B&B owners/operators could be garnered. If the B&B industry deemed it necessary, this study could even be imitated in other countries in order to attain a better understanding of the international scope of green initiatives being utilized in B&Bs around the world.

Furthermore, this research study could be modified in order to ask the sample of B&Bs what motivates them to practice green initiatives. Though this study concluded that internal motivation is the driving force behind NC B&B green practice implementation, the stimulus for B&Bs in other regions around the world may be completely different.

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