

# Predictors of Likelihood of Adoption of Green Practices in Hotels: The Case of Abuja and Lagos, Nigeria

Ladi Muazu (Corresponding author)

School Tourism, Hospitality and Environmental Management

College Of Government, Law and International Studies

University Utara Malaysia, 06010, Uum Sintok, Kedah Darul-Aman Malaysia

E-mail: Mrsladimuazu@Gmail.Com

Basri Rashid & Noor Azimin Zainol

School Tourism, Hospitality and Environmental Management

College Of Government, Law and International Studies

University Utara Malaysia, 06010, Uum Sintok, Kedah Darul-Aman Malaysia

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## Abstract

Despite the high level of awareness of sustainable practices around the globe, and literatures on its adoption in businesses, studies showed very few studies are conducted in less advanced countries like Nigeria. Given the rising consumption of resources, apprehension for the environs and sudden realization among people for practices that are friendlier, the trend is gradually picking up in the Nigerian hotel industry. The hotel is facing challenges accepting green practices due to little information on green practice and its perceived benefits, government inability to enforce regulations on environmental sanitation, and absence of enlightenment promotion of green practice. This study strives to determine factors likely to motivate hotels to adopt innovative ways of operating in Nigeria. Based on Rogers' theory of innovation diffusion, this study decided to establish perceived innovation characteristics, perceived environmental characteristics, organizational characteristics and stakeholders' influence as determinants for likely adoption. Data was collected from General Managers of hotels (363 in number) in Abuja and Lagos. Using Partial Least Squares (PLS) path modelling, the findings indicate all perceived predictors positively correlated to likelihood of adoption.

**Keywords:** Green practice, Adoption of Green Practice, Hotels, Nigeria

## 1. Introduction

The hotel industry is rapidly growing and becoming a leading industry around the world. In 2014, the industry generated about US\$7.6 trillion (WTTC, 2015) and thus boosting the economy of many nations (Esu, 2015). The United Nations World Tourism Organization (UNWTO, 2015) stated that tourism and hospitality industry accounts for 40% of services trade. In Nigeria, the industry accounted for 1.7% (NGN 1,632.8 billion) to total GDP in 2015 and 1.6% (651,000) of employment (UNWTO, 2015). It is further stated that, about seventy to seventy-five percent of annual expenditure of tourists goes to hospitality services (Babalola & Oluwatoyin, 2014). Because the hotel renders intangible and perishable services, it aims towards customer satisfaction, and in the process of ensuring that satisfaction, enormous resources are expended and waste generated; the primary reason studies on sustainability in the industry are receiving attention (Hall & Lew, 2009). The end product of hotel to the environment was estimated to have increased the global gas emissions by 21% (Scot et al., 2008). Energy and water are the main resources commonly consumed (Goosling, Hall & Scort, 2015). This paper focuses on cultivating sustainability of the Nigerian hotels.

Green practice is described as that practice that is carried out to save or safeguard natural resources (Wang, 2012). Chan (2007) described environmental practices as those practices implemented by organizations to tackle the impacts of its operation on the environment. Green practice is a frequently initiative practice engaged by hotels to moderate their operation (Ayuso, 2007). Other authors described green practice as a practice that involves recycling of resources, reducing of excess waste and reutilizing of materials (Mohindra, 2008). Mensah (2013) describes green practice as “a routine practices by organizations to reduce damaging the environment”. Green Hotel Association (2007) compares hotels that are practicing green as businesses introducing sustainable practices. Examples of sustainable practices include preservation of water and recycling program, procuring of home grown or natural products; and conserving energy (Tzschentke, Kirk, & Lynch, 2008).

The hotel industry in Nigeria is rapidly growing; and is generating concerns on its consequence on the environment. This attitude becomes an environmentally friendly issue for the industry because, Nigerian hotels are beset with such environmental problems concerning the excessive utilization of available resources (water), waste disposal issue, noise, and energy issues (Adesina & Ngozi, 2013). Refuse disposal is a foremost environmental problem of hotels and the country at large; waste is produce without adequate provision for disposal (Morakinyo, Iwuala, Nwoke & Ukomma, 2011). The growth of hotels is generating increasing amount of stress, several hotels constructed to cater for travelers soon consumed much of asset that many of the community relied upon (Elkington, 1997). Ironically, these hotels require these resources as an indispensable ingredient for the conception and consumption of services. This is the problem in many locations where tourism activities run into the limits of natural resources. The advances in green practices in the hotel are somewhat novel, and aside the acclamation given to viable tourism, empirical research remains limited. However, the dearth of research in this field has improved recently. Hotel operations often

accompany diverse environmental challenges comprising degradation of the environment and exploitation of resources including food, water, and energy (Bader, 2005; Bohdanowicz, 2005). Some environment effects that frequently go with the proliferation of hotels are degradation and exhaustion of natural resources; water pollution such as wastewater discharge, energy and air emission (Kuuder, Bagson, Prempeh, Mumuni, Adongo & Amoako, 2013). Because hotel operations involve use of many resources, it becomes important to adopt new ways of operating to lower the harmful impact on the environment (Kuuder et al., 2013). It is in light of this recognition that the study intends to survey the dynamics of adoption in Nigerian hotels using the model in the dissemination theory as shown in Figure 1.

## **2. Literature Review**

“The concept of green tourism has been studied by several researchers in recent years (Hall, 2013; Riasi & Pourmiri, 2016; Roly et al., 2015). Research on this topic has frequently focused on issues such as sustainability, environmental protection, tourism consumption, etc.” As a developing industry, tourism entails travelling and staying in hotels, and green practice in hotels is apparently the key towards realizing green development. As a significant section of the global economy, tourism increases the revenue in emerging economies, (UNWTO, 2015). However, many negative effects accompany the benefits gained (Bohdanowicz 2005). Green practice is now an extensively held issue addressed in various organizations (Bader, 2005). As more organizations are now becoming more concerned, and shifting their activities into becoming environmentally friendly such as using energy saving bulbs as recommended by the commission on energy regulatory in Nigeria to search for alternative energy (2016), and conserving water (Kim & Choi, 2005). The implication of this for organizations is severe. The hotel provides shelter to guests who demand for lodging away from home, and occasionally bringing the sole aim to provide comfort and services into conflict with the objective of environmental conservation. Tourism relies greatly on nature and despite its dependence on natural resources, its development has generally occurred with little regard to environment (Pattullo, 2005). The hotel consumes enormous resources for its daily operation, and as it grows, has the social responsibilities of protecting its greatest valued asset - environment (Kasim, 2009).

### *2.1 Environmental Sustainability*

Sustainability is a frequently used word to sensitize businesses over the excessive exploitation of natural resources. Sustainability aims at safeguarding the available resources, reducing pollution, and ensuring the availability of resources for future needs (Brackley, 2007). As stated in the Brundtland report of 1987, the concept of sustainability involves “improving the contemporary condition and conserving for future generation”. Since then, several agendas were developed drawing the attention of the organizations including the hotels towards enhancing their operational practices (Tzenchen, Kirk & Lynch, 2008). In the 1980s, organizations are called upon to take responsibilities for the actions and attitudes on host environments (Butler, 1995, p. 5); and this call led to different methods and concepts such as eco, green, ethical and responsible tourism (Mihalic, 2006). The concept of sustainable tourism was well-defined and encompasses the economic, social and

environmental responsibility of tourism, justice and equity (Inskip, 1991). The study on sustainability had taken a tremendous dimension with many scholars researching on the concept of sustainable practices (TSG, 2012). Discussion on sustainability has drawn the attention of hotels in balancing the need for both commercial and environmental interests.

Thus, it is evident that the environment is the asset that the tourism industry exclusively depended upon. Therefore, the industry must be considerate when using resources and ensuring their conservation against depletion.

Sustainable practice is an important corporate subject for the hotel business. In the past, the service industry has been unconscious of its damage to the environment. However, sudden environmental consciousness amongst the public is being noticed (Bohdahnowicz, 2005). Thus, the concern for the extensive usage of natural resources ushered in the realization of sustainability. Therefore, this idea aims towards preservation of resources. However, the impacts on the environment are occasioned by insensitive approach and ignorance of many hospitality industries, as most do not perceive their activities as threat to the environment. Hence, it becomes essential for hotels to mitigate their effect on the environment, because they are recognized as heavy users of natural resource.

## *2.2 Determinants for Adoption*

Though prior researches have recognized some evidence of the causes of adoption (Bansal & Roth, 2000), to date, few organized and comprehensive analyses of the factors influencing green innovation have been performed in developing countries like Nigeria. Many organizations implement green practices due to government regulations (Mensah, 2005), demand by customers and non-governmental organizations; rising costs resources and waste disposal (Mensah, 2005; Tzchentke et al., 2004). These practices do not only protect the environment, but also translate into economic benefits for the hotel. In fact, it is becoming a prevailing trend (Bader, 2005). Adoption of this trend has been recognized to provide a wide-ranging benefits to the hotel that included profit and cost reduction (Ayuso, 2006; Bohdanowicz, 2005; Kasim, 2007), achievement of better reputation (Ayuso, 2006; Nicholls & Kang, 2012; Park, 2009), better relationships with the broader community, and better staff morale (Bohdanowicz, 2005). Realizations of these benefits encourage other hotels to embark on greening programs. Implementation of green practices is becoming a necessity for hotel that want to increase its financial advantage. As Han, Hsu, Lee, and Sheu (2011) rightly observed, the trend encourages hotels to change towards green practices. In principle, if 'greening' is the foremost innovation for the industry, then what will influence its implementation in the hotel industry? Rogers's innovation theory (1995) provided the outline for this study as shown in Figure 1. The model has been used in many disciplines, socially tested and proven (Rogers, 2003). Innovation is defined as a new idea, practice or concepts perceived as new to the potential adopter (Rogers, 1995). Numerous factors influence the implementation of an innovation, which subsequently lead to the classification of these factors by Rogers (1995; 2003). Determinants for likelihood of adoption are categorized into three key groups: the innovation characteristics; organizational characteristics; and external environmental characteristics with each group having several factors depicting the

corresponding construct. Based on this theory, the followings are studied as likely predictors of adoption:

### 2.2.1 Perceived Innovation Characteristics

For some novel idea, product, or technology to be accepted, its characteristics must be understood and weighed. Several determinants for adoption are discussed including compatibility, complexity, relative advantage, triability and observability (Rogers, 2003). This paper focus on three of the five dimension (compatibility, complexity and relative advantage) because they are consistently found to be determinants for adoption than other elements (Rogers, 2003). Hence, for an innovation or technology to be adopted, its perceived characteristics should be well recognized and noticed. Compatibility is related to green practice adoption, because practices that are easily understood will diffuse easily within the firm especially when the practice is harmonious with existing processes. Complexity relates to how difficult an innovation is to understand and use. As Tornatzky and Fleischer (1990) rightly observed, innovations that are highly complex, require much efforts to study and diffuse. Thirdly, relative advantage is related to the perceived benefits to be derived (Rogers, 2003). This can be measure as social or economic benefits. Hotels that perceive higher economic benefits are likely to adopt an innovation. Potential benefits that could be derived include savings in operational costs, reduced waste and pollution and enhance reputation (Kasim, 2007; Nicholls & Kang, 2012).

Consequently, it is predictable that perceived characteristics of innovation positively affect the adoption of green practices for hotels in Nigeria and propose the following hypothesis:

*H1: Perceived innovation characteristics significantly influence the likely adoption of green practices for Nigerian hotels.*

### 2.2.2 Organizational Characteristics

Hotel growth calls for effective green management policies to help hotel managers implement conservation of resources as an integral plan. Managers can readily contribute to savings that drive profitability by becoming efficient in the use of resources. According to Mensah (2005), Tzchentke et al. (2004), organizations implement green practices due to rising costs of energy, water and clearance of waste (Zhang, Joglekar, & Verma, 2012).

*H2: Organizational characteristics significantly influence the likelihood of adoption of green practices for Nigerian hotels.*

### 2.2.3 Perceived Environment Characteristic

The environment in this research represents the location and surroundings in which the hotel conducts its trade. Earlier papers studied influences (customer pressure, competitive forces and legislation) external to the hotels that determined the adoption of green practices (Kasim, 2007; Le et al. 2006). Hotels are influenced to adopt green practice for several reasons. Reinforced conservational rules have motivated organizations to seek ways of adopting green practices worldwide (Gavronski, Ferrer, & Paiva, 2008). Many organizations adopt and implement green practices because of government regulations (Mensah, 2005), demand by

consumers and non-governmental organizations. Other motivations are regulation, competitive factors, and pressure from non-governmental organizations (Kasim 2007; Le et al. 2006). Bohdanowicz (2005) identified customer demand as an influential reason for hotels adopting practices that safeguard the environment by European hotel industry. Therefore, the following hypothesis is offered:

*H3: Perceived environmental characteristics significantly influence the likely adoption of green practices for Nigerian hotels.*

#### 2.2.4 Stakeholder Influence

According to Henriques and Sadorsky (1999), Alvarez-Gil et al., (2001), stakeholder is described as someone that could affect the accomplishment of a firm’s objectives. They are acknowledge as a group or someone with vast interest in the organization’s undertakings or have the power to affect the organization’s performance (Henriques & Sadorsky 1999; Alvarez Gil et al., 2001). Stakeholders may include owners of companies, managers, employees, government organizations, trade associations, customers, local community, and political groups (Henriques & Sadorsky, 1999). Stakeholders may not be involved with the company, or, alternatively, have no direct relation with the firm’s activities (Tang et al., 2013). Stakeholders are usually considered in green related matters, and literatures have proven stakeholder pressure as one of the prominent factor influencing a company’s green policy (Buysse & Verbeke, 2003; Gonzalez-Benito & Gonzalez-Benito, 2006; Sharma & Henriques, 2005). Therefore, the following hypothesis is projected:

*H4: Stakeholders’ influence significantly influences the likely adoption of adoption green practices for Nigerian hotels.*

#### 2.2.5 Likelihood of Adoption (Dependent Variable)

Likelihood to adopt the green practice is the dependent variable of this study and is described as the use of techniques to support operations, management of processes and policymaking in a business (Rogers, 1995).

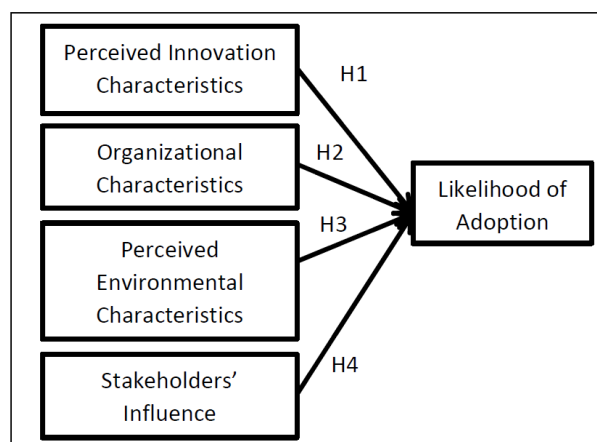


Figure 1. Conceptual Framework with hypotheses



### *2.3 Hotel Green Practices*

Green practice in the hotel industry is observed as a relatively recent phenomenon. As a result, to the increasing importance attached to environmental issues, greening is becoming a significant conservational concern globally (Hu et al., 2010). Therefore, it becomes vital for hotels to go green; because being green means responding to customers' demands and improving the corporate brand image of the hotel (Schubert et al., 2010). Due to extreme consumption of resources, hotels constitute a threat to the environment, generating huge amount of waste (Kasim, 2009; Mensah, 2006; Bohdanowicz, 2005). The four main issues in greening are those of energy efficiency, water preservation, reutilizing of resources, and controlling of fouled air (Kim, Palakurthi, & Hancer, 2012). Water conservation, energy efficiency, and waste reduction are practices that hoteliers rated as highly important and performed well (Wu, Teng & Hung, 2013). Other benefits that hotels enjoyed for adopting green practice include greater levels of innovation, less generation of pollutants, less consumption of resources, enhanced employee morale and public image, better financial performance, and greater competitive advantage (Lovins, 2008).

Based on detailed literature review, this study identified green practices accomplished in hotels in developed countries. Numerous green practices adopted include the use of energy saving devices, water-efficient equipment in the kitchen, restaurant, and the housekeeping department. In the accommodation section, ecologically cleaning detergents are used to prevent degradation of the environment through chemical disposal. Amongst the exceedingly valued green practices implemented by hotels are, water and energy efficiencies, and waste reduction practices (Wu, Teng & Hung, 2013). Likewise, Bohdahnovicz (2006) identified energy and water conservational programs, and responsible controlling of waste as main green undertakings by hotels. Operations in hotels that consume much of the natural assets include accommodation, laundry, landscaping, food and beverage, and laundry that exert pressure on the environment, and eventually, impacts to the environment.

To launch the hotel towards adoption of environmental practices, it becomes necessary to consider a few important issues. Because services provided in the hotel are intangible, perishable and heterogeneous (Kotler et al., 2006), the pressure exerted on hotels to go green diminishes when compared to industrialized outfits owing to its intrinsic characteristics. According to Kasim (2005), these unique features of hotel services contributed to the opinion that the hospitality industry is a "smokeless" industry, because hotel services are simultaneous in operation, and services are consumed immediately. This may be the reason why the industry is disregarded as a contributor to environmental degradation than manufacturing plants.

However, the hotel still consumes a variety of tangible products on a regularly. For example, natural resources are consume at a much higher rate for guests' comfort, with average daily consumption estimated at three times that of residents (Burke, 2007). Other factors for adoption are the nature of hotels, some are profit-oriented companies that render services to customers and whose decisions are influenced by the need to enhance customer pleasure, while others consider their effects on the natural environment. In addition, various motives

and constraints determine whether a company implements or not (Bohdanowicz, 2005; Ayuso, 2007; Tzschentke, Kirk & Lynch, 2008).

#### *2.4 The Nigerian Hotel Industry*

Hotels in Nigeria emerged around the 1940s with the establishment of Airport Hotel in Lagos. The development of hotels continued with more launched round the country. The demand for hotel surges in 1999 due to political stability of the country and influx of investors. The hotel industry in Nigeria is still growing as observed by Dantata (2011) with the finer ones springing up in Abuja - the capital city of Nigeria and Lagos - the commercial nerve centre of the country. To date, the question of transforming the sector towards sustainability has been mainly conceptual. This is the situation in Nigeria, where the trend remains to be picked up fully (Dar, & Comfort, 2012). The development of hotels in the country (Dantata, 2011) therefore makes it imperative to promote the implementation of environmentally friendly practices in the industry.

### **3. Methodology**

This paper adopted the quantitative research approach to measure relationships amongst the variables. The sample frame of this study includes the 4-5 stars hotels in Abuja and Lagos, Nigeria. The study conducted in Nigeria, comprised of general managers of selected hotels. The survey items were administered to the 451 selected managers of hotels and 375 were retrieved after six weeks. The returned survey questionnaire was screened and those found unsuitable for analysis were discarded bringing the total of usable questionnaire to 363. The 5 point likert scale was used to measure the items, 1 being strongly disagree, 2 disagree, 3 is neutral, 4 is agree, and 5 is strongly agree. It was used because; it is considered suitable, consistent, and easier for respondents to select answers and finally, guarantees confidentiality. The measuring instrument was organized to provide respondents with easy fill-in the data. The instrument had two sections. Section 1 is the demographic data collected from respondents while the second section focused on the variables of the study.

The dependent variable (Likelihood of Adoption) was measured with five items; the predictors consist of: perceived innovation characteristics has 14 items, organizational practices had 8 items, perceived environmental characteristics had 6 items and stakeholders' influence had 5 items.

Of the 363 respondents, 74% were males, 26% females; 63% were holders of higher national diploma (HND), 36% were holders of masters while only 1% are national diploma holder. The average age of respondents was 42 years.

#### *3.1 Data Analysis and Presentation*

Reliability of the measurement model was ascertained via PLS algorithm as presented in Figure 2. The internal reliability of reflective constructs is determined using the outer loadings of each construct's indicators. Table 1 presents the cross loadings, average variance extracted (AVE) and composite reliability of the individual items of the study. The individual factor analysis retained all the items for each variable except perceived innovation



characteristics (PIC). This is because, the rules of thumb for the recommended values in cross loadings and reliability is 0.7 and 0.5 for average variance (Fornell & Larcker, 1981; Hair et al., 2014). Following the rule of thumb, seven items of PIC are deleted because they did not meet the minimum acceptable value of 0.7 for composite reliability as presented in the table 1. Therefore, PIC2, PIC7, PIC8, PIC10, PIC12, PIC13, and PIC14 are eliminated. The use of composite reliability in this study is justified by its ability to take into cognisance, the various loading of respective indicators, hence, recommended for PLS analyses (Hair et al., 2014). According to Bagozzi and Yi (1988), convergent validity ought to be supported by composite reliability (CR) and average variance extracted (AVE). The results revealed that none falls short of 0.50 values for the AVE indicating that all the constructs have convergence validity. Specifically, the AVE for the PIC is 0.68, OC 0.62, PEC 0.78 and 0.74 for SI respectively. Hence, the items explained more than 50% of the variance of their respective indicators. Constructs' reliability range from 0.90 to 0.95, exceeding the recommended threshold value of 0.7 (Hair et al., 2010). The t-values for the factor loadings of survey items achieved statistical significance ( $p < 0.05$ ). Regarding the CR, the AVE, and the CFA, results suggest survey items have high reliability and convergent validity, respectively.

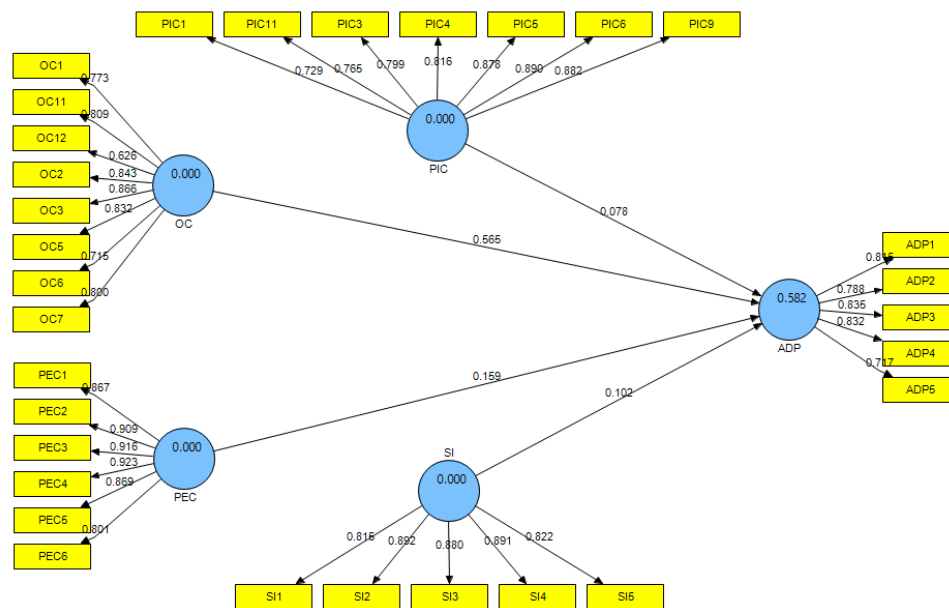


Figure 2. Measurement Model

Table 1. Individual Item Reliability, Internal Consistency and Convergent Validity

Construct	Items	Loadings	AVE	CR
<b>Likelihood of Adoption</b>	ADP1	0.815	0.64	0.90
	ADP2	0.788		
	ADP3	0.835		
	ADP4	0.832		
	ADP5	0.717		
<b>Organizational Characteristics</b>	OC1	0.773	0.62	0.93
	OC2	0.809		
	OC3	0.626		
	OC4	0.843		
	OC5	0.866		
	OC6	0.832		
	OC7	0.715		
	OC8	0.800		
<b>Perceived Environmental Characteristics</b>	PEC1	0.867	0.78	0.95
	PEC2	0.909		
	PEC3	0.916		
	PEC4	0.923		
	PEC5	0.869		
	PEC6	0.801		
<b>Perceived Innovation Characteristics</b>	PIC1	0.729	0.68	0.94
	PIC11	0.765		
	PIC3	0.799		
	PIC4	0.816		
	PIC5	0.878		
	PIC6	0.890		
	PIC9	0.882		
<b>Stakeholders' Influence</b>	SI1	0.815	0.74	0.93
	SI2	0.892		
	SI3	0.880		
	SI4	0.891		
	SI5	0.822		

The discriminant validity in Table 2 shows the correlations for each construct. This indicates that the survey model has attained satisfactory discriminant validity (Hair et al., 2010). It was conducted to assess the level constructs are differentiated in the same model. Using the Fornell Lacker method, discriminant validity was attained when the square root of the construct AVE is higher than its correlation with the remaining constructs in the model. Table 2 presents the discriminant validity results for this study. The result revealed that all the constructs in this study have discriminant validity.

Table 2. Discriminant Validity

Construct	Fornell Lacker Criterion				
	1	2	3	4	5
<b>1 LH Adoption</b>	<b>0.799</b>				
<b>2 Organizational Practices</b>	0.733	<b>0.786</b>			
<b>3 Perc. Env. Characteristics</b>	0.551	0.570	<b>0.882</b>		
<b>4 Perc. Inn. Characteristics</b>	0.397	0.377	0.333	<b>0.825</b>	
<b>5 Stakeholders' Influence</b>	0.479	0.472	0.435	0.520	<b>0.861</b>

### 3.2 Test of hypotheses

PLS was used to test hypotheses of the study, which allowed the researcher to investigate the relationship amongst all the variables. All the hypotheses predicted a positive relationship between them and likelihood of adoption.

H1: Perceived innovation characteristics significantly influence the likely adoption of green practices for Nigerian hotels.

H2: Organizational practices significantly influence the likely adoption of green practices for Nigerian hotels

H3: Perceived environmental characteristics significantly influence the likely adoption of green practices for Nigerian hotels.

H4: Stakeholders' influence significantly influences the likely adoption of adoption green practices for Nigerian hotels.

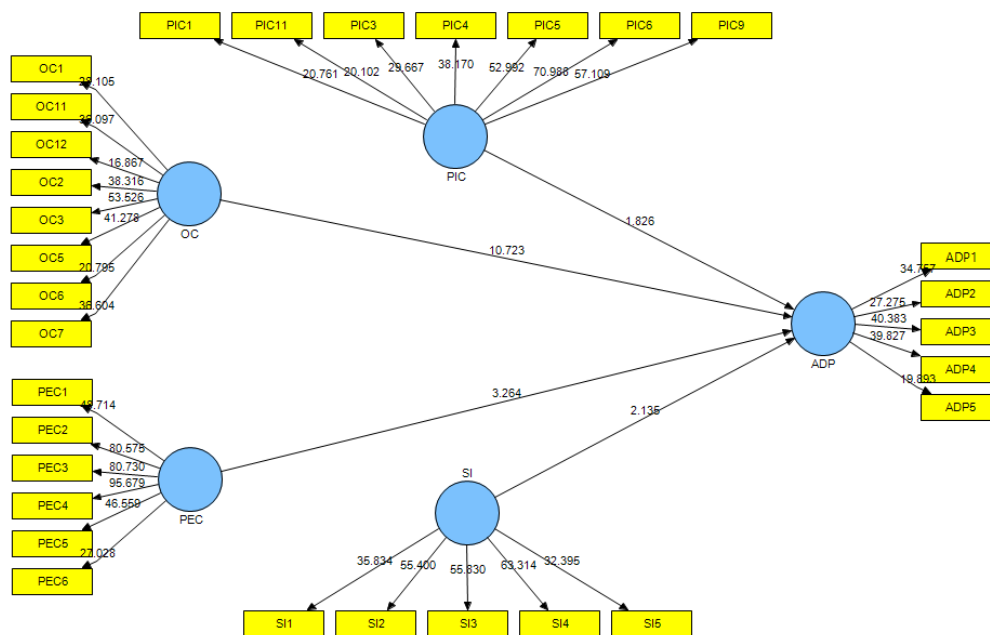


Figure 2. Bootstrapping (Direct Relationship)

Table 3 presents the results of the structural model between the predictors and criterion variable of the study. Hypothesis H1 predicted a positive relationship between perceived innovation characteristics (PIC) and likelihood of adoption (ADP). The multiple regression results revealed that, PIC as hypothesized, was found to significantly influence likelihood of adoption ( $\beta = .078, p < 0.03$ ).

Hypothesis H2 stated that organizational practices (OP) predicted a positive association with likelihood of adoption (ADP). The regression results show that the beta coefficients of OP were statistically significant ( $\beta = 0.564, p > 0.00$ ). Therefore, the hypothesis was supported

Hypothesis H3 predicted a positive relationship between perceived environmental characteristics (PEC) and likelihood of adoption (ADP). The results ( $\beta = 0.159$ ,  $p < 0.00$ ) were consistent with this prediction as evidenced by positive and significant path coefficients towards likely adoption. Thus, this result complemented past research and was supportive of H3. Hypothesis H4 proposed a positive relationship between stakeholders' influence (SI) and likelihood of adoption (ADP). The finding revealed that stakeholders' influence was found to significantly affect likelihood of adoption (ADP) ( $\beta = .102$ ,  $p < 0.02$ ). The hypothesis is significant at level of 0.02, thus, providing support for H4. Hypotheses analysis is presented in Table 3.

Table 3. Test of hypotheses

<i>Structural Model: Test of Significance</i>						
<b>Hypotheses</b>	<b>Relationships</b>	<b>Beta</b>	<b>SE</b>	<b>T Value</b>	<b>P Value</b>	<b>Decision</b>
H1	PIC -> ADP	0.0779	0.0427	1.8256	0.03	Supported
H2	OC -> ADP	0.5648	0.0527	10.7226	0.00	Supported
H3	PEC -> ADP	0.1590	0.0487	3.2641	0.00	Supported
H4	SI -> ADP	0.1024	0.0480	2.1354	0.02	Supported

Similarly the coefficient of determination ( $R^2$ ) of the model which represent the combine effect of the exogenous variables on the endogenous variable is considered as moderate. Though, there is no any standard rule of thumb for the  $R^2$  However, several studies consider the value of 0.75, 0.50, and 0.25 as high, moderate and weak respectively (Hair et al., 2014). Table 4 present the coefficient of determination for this study.

Table 4. Coefficient of Determination R-Square

<b>Construct</b>	<b>R-Square</b>
<b>Likelihood of Adoption</b>	0.58

Based on the above result, the coefficient of determination for this study is 58%. This means that the perceived innovation characteristics, organizational characteristics, perceived environmental characteristics and stakeholders' influence accounts for the 58% of the likelihood of adoption.

#### 4. Discussions

The study produced data from 363 survey instrument, representing 80% of responses from hotels. The outcomes of factor analysis showed all variables falling into their components as one factor respectively. The cronbach alpha values were greater than the suggested 0.70, indicating reliability of factors. Relationship between all constructs was examined through regression analysis and results showed presence of positive relationship between the variables.

The correlation between perceived innovation characteristics and likelihood of adoption, the findings showed a positive relation, thus supporting H1. This outcome ( $\beta = .078$ ,  $p < 0.03$ ) suggests that perceived relative advantage, compatibility, and complexity of green practices will affect the adoption of green practices in the Nigerian hotel industry. This implies that,

innovation characteristics affect a hotel's decision towards adoption especially when some benefits are perceived, innovation is more compatible with current practices, and are easier to learn and use. This study agrees with Le (2006) who claimed that innovation characteristics were significant in the determination of likelihood of adoption. Smerecnik and Andersen (2010) indicated that simplicity (compatibility) was the most strongly associated with adoption; Chou, Chen and Wang (2012) established perceived innovation characteristics to have positive effects on intent to adopt green practices. Accordingly, scholars (Smerecnik & Andersen, 2010), indicated that perceived relative advantage of innovations correlated to a certain point with likelihood of adoption of green practices leading to increased sustainability of hotels.

The correlation between organizational characteristics and likelihood of adoption reveals organizational practices largely contributing to likelihood of adoption, and established to be determinant for adoption. Organizational practices such as efficient use of energy, water conservational processes and effective waste management are established to be great determinants for adoption (Kuuder et al., 2013; Le, 2006; Lee, Abdul Wahid & Goh, 2012). Hypothesis H2 posited that organizational characteristics (OC) have a positive relationship with likelihood of adoption (ADP). The regression results showed the beta coefficients of OC were statistically significant ( $\beta = 0.564$ ,  $p > 0.00$ ). Therefore, the hypothesis was supported. This result affirms the literature whereby resources played as productive assets facilitating firms to accomplish their activities (Lee, Abdul Wahid & Goh, 2012).

Concerning the influence of perceived environmental characteristics, result offered practical support for the impression that legislation from government, customer demand and competition influence green practice adoption (Hsu, Tan, Zailani, & Jayaraman, 2015). The positive correlation between perceived environmental characteristics and likelihood of adoption indicate that hotels must focus on innovations, matching competitors' competencies to attain greater and more effective green innovation outcomes. Regulations must be adhered to by hotels and must look out for new trends regularly. It is essential for hotels to make green management an important issue, be ecologically prepared to adopt green practices. Customer demands can simply be tackle by adhering to legislation and countering pressures from competitors. The relationship between perceived environmental characteristics and likelihood of adoption ( $r = 0.548$ ,  $p < 0.000$ ) indicated a strong relationship. Thus, this result complemented previous study and was supportive of H3. The regression result showed environmental characteristics (government regulations, customer demand and competitive forces) as foremost determinants for adoption. This finding is consistent with Delmas and Toffel (2004). Le et al. (2006); Kasim (2007) who found government regulations, customer pressure and competitive forces as the main factors influencing the likelihood of adoption.

The relationship between stakeholders' influence and likelihood of adoption was significant ( $\beta = .102$ ,  $p < 0.02$ ), thus supporting H4. This result upholds the earlier studies of Buysse & Verbeke (2003); Delmas & Toffel (2008); Gonzalez-Benito & Gonzalez-Benito (2006); Henriques & Sadorsky (1999). The study agrees with Rasi, Abdekhodae and Nagarajah (2012) who claim stakeholders' pressure as a unique factor influencing adoption in a firm. In congruence with Kim and Lee (2012), the result showed substantial relationship between

stakeholders' influence and adoption.

#### *4.1 Suggestions*

Considering the dissenting attitude of hotels towards sustainable practices, government agency like the Nigerian Tourism Development Corporation (NTDC) can now start introducing programs requesting hoteliers to participate, with the efforts of promoting sustainable operations. Government and trade associations e.g. Hotel and Tourism Management Association of Nigeria (HATMAN) must organize environmentally friendly workshops, and awareness campaigns in the tourism businesses through publications. Poorly enforced law by governmental agencies, poor environmental knowledge amongst hoteliers and interested holders in the industry and non-existent pressure from non-governmental groups (NGOs) are issues the industry has to manage with (Kasim, 2009). Cooperation of groups and associations is however necessary to compel hotels to device green initiatives.

Tourism corporations can motivate businesses in the trade by providing Incentives that could entice hoteliers to implement activities that will not harm the environment. Hence, hotels that adapt green practices will get the subsidy on tax. In order for hospitality to hold onto their socially responsible behavior, they must ensure communicating their green initiatives so that, other businesses can take note of how they are actively pursuing their environmentally friendly agenda concerning their business practices (DiPietro, Cao & Partlow, 2013).

#### *4.2 Conclusion*

Going green is an emerging issue driving businesses to unceasingly improve their green capabilities and implement innovative ideas to safeguard the environment and improve business performance. This paper seeks to investigate determinants for likely adoption of green practice in the Nigerian hotel industry. A quantitative methodology was used to attain a deeper understanding of possible adoption of green practices in the Nigerian hotels. The outcomes showed the entire four studied variables correlate with the dependent variable with organizational characteristic making the strongest contribution to likely adoption of green practices in the Nigerian hotel industry. Hotels must therefore adopt green management issues when setting company policies, adapting company structures, and offer rules to follow. It becomes important for hotels to provide clear guidelines and proper monitoring mechanisms for workers to follow. Additionally, continuous research regarding green is important, regardless of whether a hotel is positioning itself as a frontrunner or not in green competencies. Hotel managers must decide when and how much their companies must invest in going green.

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