HOTEL ENVIRONMENTAL PRACTICES AND WILLINGNESS TO PAY: THE ROLE OF ENVIRONMENTAL CONCERN AND DEMOGRAPHIC MODERATORS

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Abstract

Purpose – The study explores the relationship between hotel environmental practices, environmental concerns (self, others, biosphere), and customer's willingness to pay a premium while also assessing the interactive effects of Age and Gender.
Design/Methodology/Approach – The research adopts a mixed-methods approach. Initially, a qualitative exploratory study was conducted across six hotels in Goa, India, to assess the adoption of green practices. Subsequently, a structured questionnaire was administered to customers staying in these establishments. Structural equation modelling was performed using IBM SPSS AMOS version 22. The study's findings are interpreted through the lens of diffusion of innovation theory.
Findings – Results indicate that environmental concern for self does not translate into financial support for sustainable hotel practices. Consumers above 35 years are more willing to pay for sustainable hotel practices. Younger men are less likely to pay a higher price for hotels that follow sustainable practices than other groups.
Originality of the research – Previous research has evaluated environmental concern as a single construct. This research contributes to the literature by disaggregating environmental concerns into three distinct dimensions and analysing their influence on sustainable consumption behaviour. The study also evaluated customer's willingness to pay based on demographic factors like age and gender.
Keywords environmental practices, willingness to pay, hospitality, hotels, sustainability, moderated moderation

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INTRODUCTION

Hotel environmental practices (HEP) refer to the initiatives the hotels take to reduce their carbon footprint and encourage responsible business operations. These include energy conservation, waste and emissions reduction, and resource conservation. A hotel's environmental responsibility can increase its occupancy and profitability (Damigos, 2023). HEP also impacts the hotel's overall image, provides a competitive advantage and influences positive customer perceptions. HEPs are essential to meet the demands of eco-conscious consumers, comply with regulations, and ensure long-term sustainability. They provide a differentiating factor for hotels in the marketplace, which adds to the company's image (Luo & Bhattacharya, 2018). Berezan et al. (2013) found that hotels that integrate green attributes can often employ premium pricing strategies. Customers perceive additional value in environmental conservation, and many are willing to pay extra (Li & Zainal, 2025). Miller et al. (2015) suggest that eco-certifications, like LEED or Green Seal, serve as a credible commitment to environmental practices, often justifying a higher price point in customer's minds. Organisations are developing and implementing green capabilities by investing their time and resources to reap the benefits of the green certifications (Dias et al., 2025).

Consumer's rising attention to environmental issues and sustainability encourages hotel managers to transform their business by implementing environmentally friendly practices (Cronin et al., 2011; Li & Zainal, 2025). Han et al. (2010) discuss how green hotel practices create customer value, especially among environmentally conscious segments. They propose that customers are willing to pay more when they observe unswerving benefits from the hotel's environmental practices, like improved air quality, organic food options, or non-toxic cleaning products. Hilton's care program analysis found that younger generations and women are more inclined to pay extra for hotels engaged in environmental sustainability practices, highlighting the need for targeted marketing strategies (Bohdanowicz et al., 2011). González-Rodríguez et al. (2020) noted a positive relationship between HEP, environmental concern (EC) and willingness to pay (WTP) a higher price. Their study also discussed the mediating role of the hotel's image and HEP on customer's EC and WTP.

The present study extends the research by González-Rodríguez et al. (2020) by disaggregating EC into three distinct dimensions and assessing the relationship between HEP and WTP in developing countries. The study in a developing country provides a different perspective, as the concern for price precedes EC. Damigos (2023) and Arun et al. (2021) reported fewer studies in Asian countries. Damigos (2023) found India to be one of the countries with the lowest rate of willingness to pay a higher price for green practices. Furthermore, authors report less understanding of the value associated with EC among consumers (Damigos, 2023; González-Rodríguez et al., 2020). Hence, the objectives of this research are

a. To investigate the influence of HEP on customer's WTP at a higher price for sustainable accommodations.
b. To examine the role of EC for self, others, and the biosphere in shaping the relationship between HEP and WTP.
c. To explore whether demographic factors such as age and gender affect the relationship between HEP and the customer's WTP.

The analysis uses the diffusion of innovation theory (DOI) to explain how new ideas or behaviours spread within a population (Rogers, 2003). The theory will help comprehend how hotel environmental innovations influence customer behaviour, particularly their WTP. The analysis through the DOI theory will help organisations and policymakers devise segmenting, targeting and positioning (STP) strategies. Organisations could use integrated marketing communication (IMC) elements to attract prospective customers. The study contributes to the growing body of academic literature by a) addressing the knowledge gap by exploring the relationship between HEP and customer's willingness to pay a higher price in the context of developing countries. b) evaluate the moderated effect of age and gender on the HEP and the customer's WTP. c) The DOI theory and customer value perceptions reaffirm the results. For practitioners, the study contributes by underscoring the importance of customised marketing strategies using STP and IMC to create relative advantage and value.

1. LITERATURE REVIEW

The literature review explores the relationship between HEP and willingness to pay and the relationship between EC and WTP. It also looks at the effect of age and gender on WTP. The review also familiarises the DOI theory.

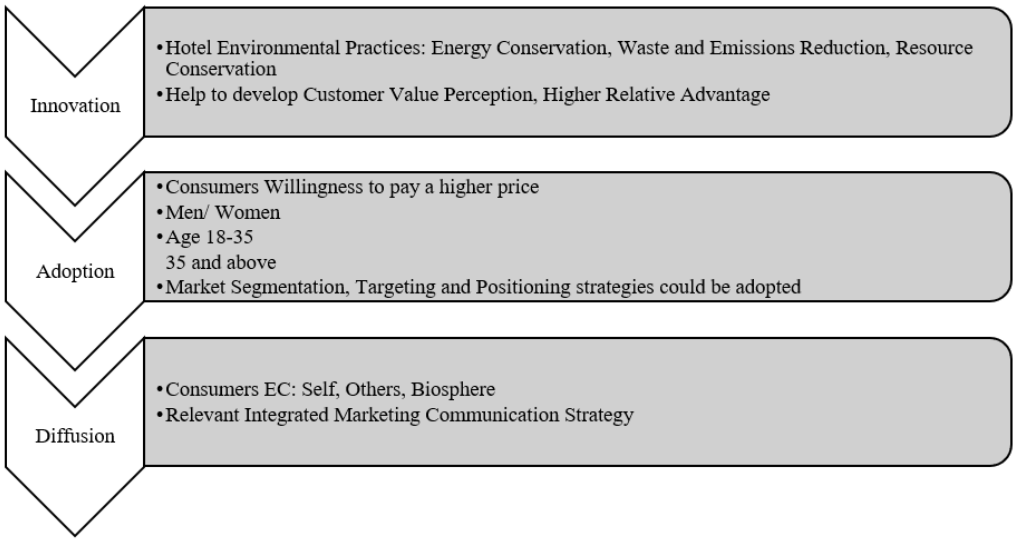
1.1 Theoretical Perspective

The adoption of eco-friendly practices by hotels and consumer's WTP for environmentally conscious accommodations spans a range of theoretical viewpoints. The most used theories are the theory of planned behaviour (Ajzen, 1991), value–belief–norms (Stern et al., 1999) and social identity theory (Tajfel & Turner, 2004). Arun et al. (2021) suggest innovation resistance theory (Ram & Sheth, 1989) or behavioural reasoning theory (Westaby, 2005). Scholars believe these theories are better conceptualised to capture a consumer's negative and positive reasoning before engaging in a behaviour. Studies are grounded in DOI theory to evaluate HEP and customer adoption (Khonje et al., 2020; Kumar & Sheoran, 2021; Tiwari & Thakur, 2021; Sharma & Chen, 2023). The adoption of green hotels using value theory and DOI theory was evaluated by Kamboj et al. (2022). The authors stress that utilitarian value is the most substantial value, followed by biospheric and hedonic values.

The DOI offers a structured analysis involving four dimensions, i.e., innovation, adoption, diffusion, and relative advantage, to comprehend how new ideas or products are introduced, accepted, and integrated into society. It serves as a tool to analyse the factors influencing the rate at which innovations are adopted (Rogers & Williams, 1983). An innovation could range from a groundbreaking invention to a minor enhancement to something that already exists. Innovations with higher chances of adoption are compatible, less complex, quickly tried, carry low risk, and demonstrate benefits within the current system. Diffusion explains the way innovation is accepted in the social system. It encompasses stages like awareness, interest, evaluation, trial, and adoption. Rogers (2003) suggests that the diffusion of green hotel innovations is not uniform but is shaped by the interplay between individual adopter characteristics and perceived innovation attributes. Individuals or organisations introducing or using the innovations are categorised as innovators, early adopters, early majority, late majority, and laggards. Relative advantage refers to how the innovation compares with existing alternatives.

The DOI theory is applied to assess how HEP can contribute to consumer's WTP. Figure 1 explains how the theory can be applied to assess customer value, STP strategies, and IMC elements. The environmentally friendly initiatives of the hotels are perceived as innovations that enhance customer value perception and offer a higher relative advantage than other hotels. A few innovations within HEP are implementing energy-saving measures, reducing waste, using sustainable materials, or promoting eco-friendly policies (Khonje et al., 2020). If these innovations align with consumer's EC and values, they are adopted more readily. Authors found that the perceived relative advantage and trialability of sustainability innovations were key factors in their adoption (Hjalager, 2010; Khonje et al., 2020; Kumar & Sheoran, 2021; Ruiz-Fernández et al., 2025; Tiwari & Thakur, 2021). Smerecnik and Andersen (2011) indicated that perceived simplicity significantly predicted the adoption of sustainability innovation. Innovators and early adopters are more attuned to EC and might actively seek and support hotels with sustainability initiatives. Older consumers resemble early adopters (Hjalager, 2010). Scholars suggest that hotels can target specific segments of consumers through IMC elements to develop high-value perception and relative advantage (Kliatchko, 2008; Marin-Garcia et al., 2025)

Figure 1: **Application of Diffusion of Innovation Theory**



Source: Authors

1.2 HEP and customer's willingness to pay a higher price

The relationship between HEP and customer's WTP has garnered considerable attention. Several studies suggest that a hotel's commitment to environmental sustainability can significantly influence customer perceptions and willingness to pay (Berezan et al., 2013; Han et al., 2010; Rivera-Camino, 2007). Kim et al. (2022) evaluated the relationship in the restaurant context, while de Araújo et al. (2022) analysed the perception of Portuguese tourists. The studies found a positive and significant relationship between hotel environmental practices and customer willingness to pay. The willingness can be influenced by several factors, including customer awareness, perceived value, demographic variables, and eco-certification presence (Miller et al., 2015). Galati et al. (2021) discussed that consumers are willing to accept a 5% price premium globally to stay in green hotels. Italian travellers are willing to pay up to 28% higher premiums to stay in Italian hotels, whereas, in India, the rate is lowest at 4-6% (Manaktola & Jauhari, 2007). Hence, it is proposed that

H1: HEP positively and significantly impacts customer's WTP a higher price for sustainable accommodation.

1.3 Environmental Concern (EC)

EC refer to an individual's apprehensions towards the environment, such as climate change, pollution, deforestation, waste, and biodiversity. The value-belief-norm theory (Stern et al., 1999) helps assess an individual's EC and behaviours based on their values, beliefs, and social norms. Schultz (2001) proposed three types of environmental concerns: egoistic, altruistic, and biospheric. The author stressed that three concerns directly result from an individual's values towards self, others, or the biosphere. Individuals prioritising environmental sustainability as a core value are more likely to engage in environmentally friendly behaviours. If individuals believe that their actions can positively impact the environment and that environmental issues are significant and urgent, they are more likely to take proactive steps toward sustainability (Boronat-Navarro & Pérez-Aranda, 2020; De Leaniz et al., 2018; González-Rodríguez et al., 2020). Customers declaring a high degree of concern about environmental issues are more likely to show a willingness to pay a higher price for environmental services (González-Rodríguez et al., 2020; Kang et al., 2012). The research investigates the effect of environmental concern for self, others and the biosphere, respectively, on the relationship between HEP and WTP. The following hypotheses are drawn.

H2a: EC for self, moderates the relationship between HEP and WTP
H2b: EC, for others, moderates the relationship between HEP and WTP
H2c: EC for biosphere moderates the relationship between HEP and WTP

1.4 Role of Gender and Age

Several scholars have investigated the moderating role of gender on green environmental practices and WTP (Han et al., 2011; Moise et al., 2021; Moon, 2021). The authors found that women are more concerned about green environmental practices (Chan, 2013). However, the scholars also stress that their participation in paying a price premium is low (Wang et al., 2018). In contrast, some scholars found that men are more willing to pay a price premium (Damigos, 2023; Jurado-Rivas & Sánchez-Rivero, 2019; Kang et al., 2012) or conclude that gender does not significantly influence environmental concern (Alibeli &

White, 2011; Fuentes-Moraleda et al., 2019; Galati et al., 2021; Namkung & Jang, 2017; Sevilla-Sevilla et al., 2019). Thus, in line with mainstream literature, the study evaluates the effect of Gender on the moderation effect of EC for self, others and the biosphere in the relationship between HEP and WTP. The following hypothesis is proposed.

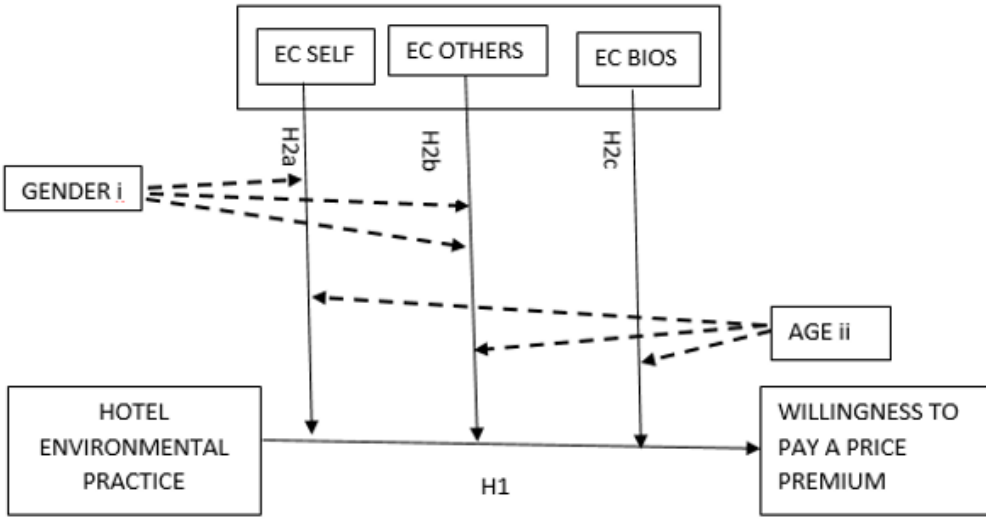
H2a i: Gender moderates the moderation effect of ECS on HEP and WTP
H2b i: Gender moderates the moderation effect of ECO on HEP and WTP
H2c i: Gender moderates the moderation effect of ECB on HEP and WTP

Concerning age, authors have found contrasting results among the younger and older population's willingness to pay (Damigos, 2023). While some support that the younger generation is more concerned about the environment (Chan, 2013; Dimara et al., 2017; Pomarici & Vecchio, 2014; Fuentes-Moraleda et al., 2019; Wang et al., 2020), others found that older consumers are more willing to pay extra for green hotels (Han et al., 2010). The authors also found no statistical relation between age and willingness to pay a higher price (Jurado-Rivas & Sánchez-Rivero, 2019; Galati et al., 2021; Han et al., 2011; Kang et al., 2012. Arun et al. (2021) suggested measuring the moderating effect of age on green hotel adoption behaviour. The study thus evaluates the effect of age on the moderation effect of EC for self, others and the biosphere in the relationship between HEP and WTP. The following hypotheses are proposed.

H2a ii: Age moderates the moderation effect of ECS on HEP and WTP
H2b ii: Age moderates the moderation effect of ECO on HEP and WTP
H2c ii age moderates the moderation effect of ECB on HEP and WTP

The proposed model is represented in Figure 2.

Figure 2: **Proposed Model**



Source: Authors

2. METHODOLOGY

2.1 Qualitative Exploratory Study

The initial study involved a web search to identify 5-star hotels in Goa following green practices. The search was narrowed down to six hotels that communicated about their sustainable practices on their websites. The managers of these hotels were contacted and interviewed to learn about their policies on the use of plastic, availability of seasonal and organic food, water and energy-saving practices, waste reduction, segregation and recycling. The managers were also asked about hotel policies concerning guest involvement in environmental practices. A semi-structured interview was employed to allow descriptive responses. Six interviews lasting 30-45 minutes were conducted. The answers were recorded on paper and analysed meticulously by comparing the answers to the questions individually.

This initial exploratory study was essential as sustainability practices in the hospitality sector vary widely across regions and property types (Khatter et al., 2019; Legrand et al., 2022). In a tourism-dependent destination like Goa, where environmental degradation due to mass tourism is a growing concern, it was crucial to confirm whether hotels implement green practices before assessing guest perceptions and willingness to pay. Interviewing managers of six different resorts helped understand the environmental initiatives of the hotels. It made the subsequent analysis valid and relevant by eliminating potential bias from guests staying in hotels without any sustainability initiatives.

2.2 Survey

2.2.1 Instrumentation

A structured online questionnaire was developed, recognising its effectiveness in gathering data promptly, at minimal expense, and from a geographically dispersed sample (Palinkas et al., 2015). The questionnaire had four sections. The first section contained socio-demographic details like gender, age, marital status, annual income, and qualifications. The second section contained seven items to measure the HEP. The third section contained three items to measure WTP. The second and third sections were adapted from González-Rodríguez et al. (2020). The fourth section contained 12 items to measure EC, adapted from Schultz (2001). All three scales were formulated based on a 5-point Likert scale from 'strongly disagree' - 5 to 'strongly agree' – 1. Adopted scales are tested for rigour in prior studies, ensuring their reliability and validity, enhancing the accuracy of the results, and being recognised and trusted within the academic community (DeVellis & Thorpe, 2021; Sardesai & Gore, 2025). Confirmatory factor analysis during the study can be used to verify construct validity in the new sample (Hair et al., 2014).

2.2.2 Data Collection

Purposive sampling was employed, and guests from the six hotels were contacted when they visited nearby beaches and shacks by asking them if they were staying in these hotels. Purposive sampling improves methodological rigour and trustworthiness in qualitative research by aligning with the research methodology, aims, and objectives, enhancing credibility, transferability, dependability, and confirmability (Kambhoj et al., 2022; Memon et al., 2024). A random sample risked a low participation rate from individuals possessing the essential experience, potentially rendering the findings less valid. Therefore, using purposive sampling allowed the study to target the specific population segment capable of providing rich and relevant insights in line with the study's objectives (Zhao, 2021).

The study is based in Goa. Goa is a prominent tourist destination that gets a diverse demographic of tourists. Its tourism ecosystem includes major luxury hotel chains and budget accommodations (Economic Survey, 2025; Gore et al., 2024). Most luxury hotels in Goa have adopted environmentally sustainable practices in response to regulatory policies, consumer expectations and the desire to enhance their green credentials. Smaller hotels and resorts are also following suit. This made it feasible to select real-world examples of hotels for the study and gather authentic consumer responses based on actual experiences. The results of the study can be replicated at other tourist destinations or regions actively promoting sustainable tourism.

The survey was conducted from September 2024 to December 2024. The tourists were intercepted at the Colva, Benaulim, Cavelossim, Varca, Majorda, and Sernabatim beaches, as well as the shacks outside the hotels. 52% of tourists (272 out of 440) were willing to answer the questionnaire. These tourist were asked to share their mobile number or email. The questionnaires were administered through WhatsApp and email. The structure of the questionnaire, the objective, and the rating scheme were explained to the respondents initially, and they were assured of the confidentiality of their responses. Two hundred and seventy-two respondents answered the survey, of which 18 were incomplete and discarded. The sample comprised 134 (52.5%) males and 120 (47.2%) females. The demographic information is provided in Table 1.

2.2.3 Data Analysis

The analysis began with assessing the structural model (Figure 3), which ensured the construct's reliability and validity (Table 2). Reliability refers to the consistency of the measurements, ensuring that the instruments used produce consistent results over time. Validity, on the other hand, ensures that the constructs measure what they are intended to measure. Validating the measurement model ensures that the observed variables rightly represent their underlying latent constructs. The structural model was further assessed to evaluate the proposed hypotheses and discern the strength and direction of relationships between the latent constructs (Table 3). The IBM SPSS AMOS version 22 was used to test the hypotheses. The model fit indices were checked (Table 4). After validating the measurement mode, the hypotheses were tested using structural equation modelling. The hypotheses were tested by path analysis based on the relationships between the constructs in the model. The interaction term method was used for moderation testing since the moderator is a continuous variable. First, the variables were mean-centred by finding the variable's mean value and then deducting it from the variable. Next, an interaction variable was created between the centred independent variable and the centred moderator. A path model was drawn in AMOS from the independent variable, the moderator and the mean-centred interaction variable to the dependent variable. Moderation is proven if the effect of the interaction variable on the dependent variable is significant (Collier, 2020).

3. FINDINGS

3.1 Findings of the interviews

The interviews with hotel managers in all six hotels revealed a strong and growing commitment to environmentally sustainable practices across several operational areas. These were sustainability initiatives and commitment, strategic and financial considerations, guest's environmental engagement and perceived willingness to pay. Common sustainability initiatives include eliminating single-use plastics, in-house water bottling plants, using glass bottles, organic and seasonal food offerings, waste segregation, and energy-saving mechanisms such as solar heating and low-flow water fixtures. Hotels have also adopted green procurement strategies and use eco-labelled products. They encourage guests to practice sustainability through various means, including keeping brochures in the room, in-room signage, digital platforms, and property tours. The hotels provide bicycles and promote local environmental or cultural activities.

The managers discussed the financial considerations in adopting sustainability practices. While some managers viewed sustainability as a long-term investment that leads to operational savings, others expressed concerns about the high initial costs and uncertainty around financial returns. A few hotels had a sustainability team, whereas other hotels relied on engineering staff to lead green initiatives. Guest's engagement emerged as a recurring theme. While some guests actively participated in eco-friendly behaviours like reusing towels or switching off appliances, others were less responsive, highlighting the need for more precise and more consistent messaging. Managers expressed mixed views about guest's willingness to pay a premium for sustainability. Many believe environmentally aware guests, especially from younger or international segments, are willing to pay a premium. Others noted that for most Indian tourists, price and comfort still outweigh sustainability.

3.2 Survey Respondent's Profile

Of the 254 respondents, 134 are males and 120 are females. Most respondents are graduates (73%) with an annual income of more than five lakhs (61%). 3% of respondents were foreigners, and the rest were Indians from the states of Karnataka (12%), Maharashtra (41%), Delhi (14%), Kerala (10%), Hyderabad (5%) and others (15%).

Table 1: **Demographic Profile**

Demographic		Frequency	Percentage
Gender	Male	134	52.8
	Female	120	47.2
Age	18-35 years	123	48.4
	36-above	131	51.6
Qualification	Graduate	185	73
	Post Graduate	69	27
Marital Status	Single	95	37
	Married	114	45
	Others	45	18
Annual Income	Up to 5 lakh	98	39
	5 lakh and above	156	61

Source: Primary Data

3.3 Measurement Model

Reliability, convergent and discriminant validity were measured for the model. Convergent validity was observed by factor loadings greater than 0.7, composite reliability (CR) values above 0.7, and average variance extracted (AVE) above 0.5. Tables 2 and 3 show the factors, reliability, and correlation analysis. It was observed that the factor loading was above 0.7, composite reliability (CR > 0.7) and average variance extracted (AVE > 0.5) values of all the constructs are above the minimum threshold, indicating the reliability and validity of the measurement model. The discriminant validity is analysed by examining whether the square root of the AVE of each variable is greater than the correlations with other variables. The statistical results indicate that the significance levels of all square root values of AVE are greater than those of the correlation values.

Table 2: **Factor and reliability analysis**

Construct	Item		Factor Loadings	AVE	Alpha	CR
HEP	HEP1	The hotel protects the environment	0.837	.880	0.51	0.87
	HEP2	The hotel reduces its consumption of natural resources	0.829			
	HEP3	The hotel recycles	0.853			
	HEP4	The hotel communicates its environmental practices to its customers	0.68			
	HEP5	The hotel uses renewable energy	0.553			
	HEP6	The hotel conducts annual environmental audits	0.567			
	HEP7	This hotel participates in environmental certifications	0.575			
Customer's WTP	WTP1	It is okay to pay a higher price to stay at a hotel that has environmentally friendly practices	0.892	.894	0.74	0.90
	WTP2	I am willing to pay a higher price to stay at an environmentally friendly hotel.	0.888			
	WTP3	I am willing to spend more to support a hotel's environmental sustainability efforts	0.801			
Environmental concern - self	ECS1	I am concerned about the environment because of its consequences for me	0.911	.935	0.80	0.94
	ECS2	I am concerned about the environment because of its consequences for my health	0.922			
	ECS3	I am concerned about the environment because of its consequences on my lifestyle	0.89			
	ECS4	I am concerned about the environment because of its consequences for my future	0.842			
Environmental concern - others	ECO1	I am concerned about the environment because it affects all people	0.925	.967	0.89	0.97
	ECO2	I am concerned about the environment because it affects all children	0.972			
	ECO3	I am concerned about the environment because it affects my children	0.929			
	ECO4	I am concerned about the environment because it affects people in my country/community	0.938			
Environmental concern - biosphere	ECB1	I am concerned about the environment because it affects animals	0.945	.974	0.91	0.98
	ECB2	I am concerned about the environment because it affects plants	0.976			
	ECB3	I am concerned about the environment because it affects marine life	0.949			
	ECB4	I am concerned about the environment because it affects birds	0.945			

Source: Primary Data

Note: CR- composite reliability; AVE- Average variance extracted.

Table 3: **Correlation Matrix**

	CR	AVE	MSV	ASV	ECS	HEP	WTP	ECO	ECB
ECS	0.939	0.795	0.575	0.352	**0.891**				
HEP	0.832	0.627	0.575	0.332	0.758	**0.792**			
WTP	0.897	0.743	0.523	0.269	0.623	0.723	**0.862**		
ECO	0.969	0.887	0.736	0.306	0.512	0.370	0.298	**0.942**	
ECB	0.975	0.908	0.736	0.272	0.427	0.306	0.273	0.858	**0.953**

Source: Primary Data

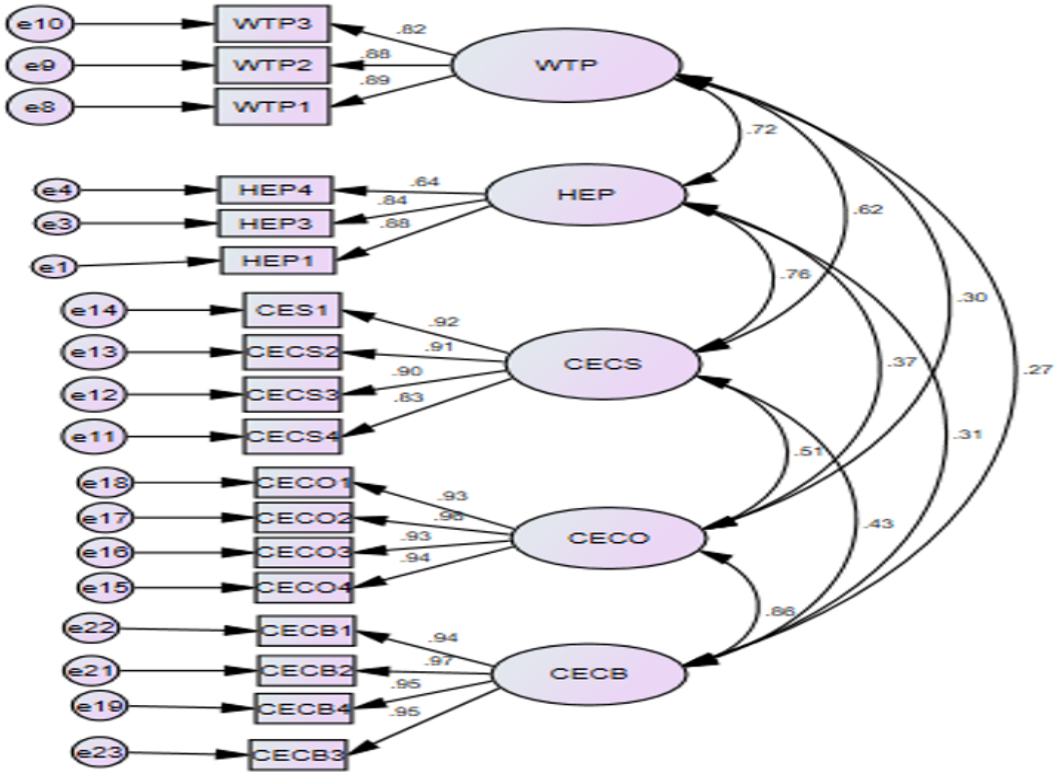
(CR: composite reliability; AVE: average variance extracted; MSV: maximum shared square variance; ASV: average shared variance; ECS: environment concern for self; HEP: hotel environmental practices; WTP: willingness to pay; ECO: environment concern for others; ECB: environment concern for biosphere)

Note: The diagonal value in bold indicates the square root of AVE of the construct; values below the diagonal are correlations (Cronbach Alpha)

3.4 Structural Model

The structural model shows a good fit (Lim et al., 2024). The results and the threshold values are presented in Table 4. Figure 3 shows the structural path model.

Figure 3: **Structural Model**



Source: Primary Data

Table 4: **Measurement Model Fit**

Fit Indices Threshold limit	CMIN/DF >3	RMR near 0	GFI close to 1	AGFI close to 1	TLI 0.95	CFI 0.95
Values	2.895	0.037	0.873	0.826	0.946	0.956

Source: Primary Data
CMIN/DF: Chi-square value/ degree of freedom; RMR: Root Mean Residual; GFI: Goodness of fit; AGFI: Adjusted goodness of fit; TLI: Tucker Lewis Index; CFI: Comparative fit index

3.4 Hypothesis Testing

The hypotheses are tested based on path analysis, and the results are shown in Table 5.

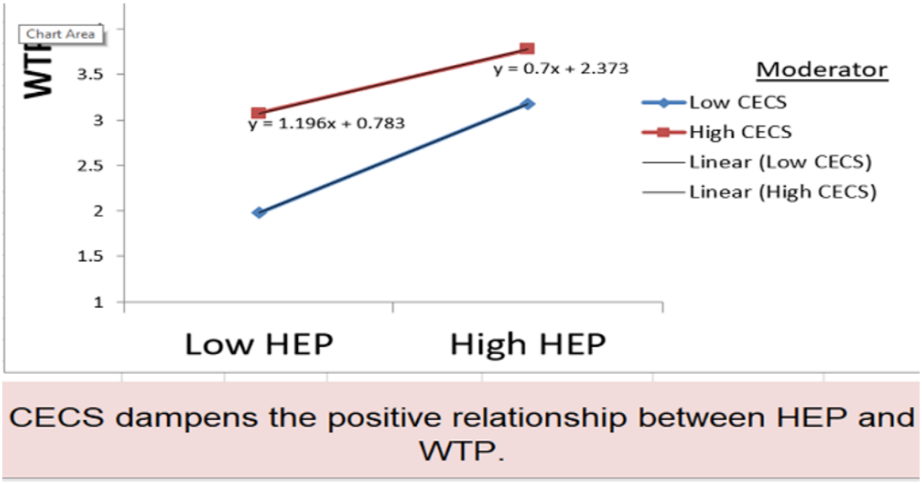
3.4.1 Relationship between HEP and WTP

The results show a positive and significant relationship (β=0.719, P<0.05) between HEP and the customer's WTP at a higher price. The model explains 52% of the variance in customer's WTP suggesting that HEP is a significant driver of WTP, though other factors (income, travel motivations, cultural values, or service quality) may account for the remaining 48% of variance.Therefore, *H1, i.e., HEP positively and significantly impacts the customer's WTP a higher price for sustainable accommodation,* is supported.

3.4.2. Moderation Effect

The study evaluated the effect of EC on self, others, and the biosphere on the customer's WTP at a higher price for green environmental practices. The results of the moderation analysis show a significant negative moderation for self (β= -0.138, P<0.10. The hypothesis *H2a, EC for self, moderates the relationship between HEP and WTP*, and is supported, suggesting that customers who focus on EC for self may not be willing to pay extra for sustainable hotel practices. The lowest association (flattest slope) between HEP and WTP happened for high EC for self, and the highest (steepest slope) between WTP and HEP happened for low EC for self. For low levels of EC for self, the relationship between HEP and WTP strengthens; for high levels of EC for self, the relationship between HEP and WTP weakens. Figure 4 shows the interaction analysis.

Figure 4: **Interaction analysis**



Source: Primary Data

Hypothesis H2b, EC for others, moderates the relationship between HEP and WTP, is not supported (β= 0.017, P>0.10). Hypothesis H2c, *EC for biosphere moderates the relationship between HEP and WTP*, is also not supported (β= 0.033, P>0.10). While individuals may express concern for the well-being of others (children, the community, or future generations) or the biosphere (nature, flora, fauna, and the planet), these concerns do not significantly influence their WTP to pay more for environmentally responsible hotel practices.

3.4.3 Moderated Moderation

A moderated moderation analysis was performed to check if age and gender further moderate the moderation effect of EC on the relationship between HEP and WTP.

3.4.3.1 Environmental Concern for Self with Gender and Age

For Gender, the results show that the values are negatively significant for males (β= -0.191, P<0.10). Hence, hypothesis *H2a i, Gender moderates the moderation effect of ECS on HEP and WTP*, is supported and suggests that men are more concerned about the environmental impacts on self, but are less willing to pay a premium. For age, the results showed that the values were negatively significant for respondents below 35 years (β= -0.237, P<0.10). Hence, hypothesis *H2a ii, age moderates the moderation effect of ECS on HEP and WTP,* is supported, implying that younger consumers with high EC for self are less willing to pay for environmentally friendly hotel practices.

3.4.3.2 Environmental Concern for Others with Gender and Age

For Gender, the result is not significant. Hence, the hypothesis *H2b i, Gender moderates the moderation effect of ECO on HEP and WTP*, is not supported. It indicates that the impact of EC on others (community, children, society) in terms of how hotel environmental practices influence willingness to pay is not significantly different between males and females. However, EC for others (community, children, society) plays an important role in the lives of older consumers. For individuals aged 35 and above, the EC for others (β= 0.115, P<0.10) exhibits a positive and significant moderation effect on the relationship between HEP and the customer's WTP. Hence, hypothesis *H2b ii, which posits that age moderates the moderation effect of ECO on HEP and WTP, is supported. It suggests that for individuals above 35, greater concern for the welfare of others enhances the positive impact of HEP and WTP at higher prices*.

3.4.3.2 Environmental Concern for Biosphere with Gender and Age

For Gender, the result is not significant. Hence, hypothesis H2c i, *Gender moderates the moderation effect of ECB on HEP and WTP,* is not supported, implying that men and women who care about broader environmental issues are not necessarily more willing to pay a higher price for sustainable hotels. However, EC for the biosphere (community, children, society) plays a vital role in the lives of older consumers. For individuals aged 35 and above, the EC for biosphere (β= 0.110, P<0.10) exhibits a positive and significant moderation effect on the relationship between HEP and the customer's WTP. Hence, hypothesis *H2c ii, which posits that age moderates the moderation effect of ECO on HEP and WTP, is supported. It suggests that for individuals aged 35 and above, greater concern for the biosphere enhances the positive impact of HEP on their WTP at higher prices*.

Table 5: **Overall Results**

Hypotheses	**Relationship**	**Path-coefficient**	**t-statistic**	**R^2**	**p-value**	**Outcome**
H1	HEP→WTP	0.719	11.23	0.52	<0.05	Supported
H2a	ECSxHEP→WTP	- 0.138	- 1.841	-	<0.1	Supported
H2b	ECOxHEP→WTP	0.017	0.320		>0.1	Not Supported
H2c	ECBxHEP→WTP	0.033	0.632		>0.1	Not supported
H2a i Gender	Males ECSx-HEP→WTP	-0.191	-1.792	-	<0.1	Supported
	Females ECSx-HEP→WTP	-0.135	-1.261		>0.1	Not Supported
H2a ii Age	Below 35 ECSx-HEP→WTP	-0.237	-2.046	-	<0.1	Supported
	Above 35 ECSx-HEP→WTP	0.008	0.085		>0.1	Not Supported
H2b i Gender	Males ECOx-HEP→WTP	-0.010	-0.132	-	>0.1	Not Supported
	Females ECOx-HEP→WTP	0.002	0.024		>0.1	Not Supported
H2b ii Age	Below 35 ECOx-HEP→WTP	-0.069	-0.826	-	>0.1	Not Supported
	Above 35 ECOx-HEP→WTP	0.115	1.685		<0.1	Supported for Moderation
H2c i Gender	Males ECBx-HEP→WTP	0.108	1.524	-	>0.1	Not Supported
	Females ECBx-HEP→WTP	-0.071	-0.924		>0.1	Not Supported
H2c ii Age	Below 35 ECBx-HEP→WTP	-0.021	-0.255	-	>0.1	Not Supported
	Above 35 ECBx-HEP→WTP	0.110	1.651		<0.1	Supported for Moderation

Source: Primary Data

4. DISCUSSION

The study examined the relationship between the hotel's environmental practices and their impact on customer's willingness to pay higher prices. Previous literature has established the relationship between hotel environmental practices and willingness to pay a higher price (Berezan et al., 2013; Han et al., 2010; Rivera-Camino, 2007). The relationship is also supported in different contexts (Kim et al., 2022; de Araújo et al., 2022). The findings of this study also support the idea that hotel environmental practices positively and significantly impact customers. Customers are willing to pay more than usual to stay in hotels that have green practices. The finding is significant, considering that the Indian market is highly price-sensitive. Damigos (2023) noted that 15% of consumers in India were willing to pay more for a green hotel compared to acceptance rates in Mexico, Ghana, Hong Kong and Indonesia.

The research then evaluated the effect of environmental concern on the relationship between HEP and Customer's WTP. Previous studies show that customers who pay a higher price for eco-friendly services value the well-being of the environment (biosphere) (González-Rodríguez et al., 2020; Kang & Nicholls, 2021; Kang et al., 2012). Social benefits (contributing to the community or future generations) also influence WTP but are less predictive than biospheric concern (Nelson et al., 2021; Kang & Nicholls, 2021). Authors also noted that while personal benefits (such as health or comfort) can play a role, the willingness

to pay is more strongly driven by identification with environmental values and the belief that individual actions contribute to environmental protection (Boronat-Navarro & Pérez-Aranda, 2020; De Leaniz et al., 2018; González-Rodríguez et al., 2020; Stern et al., 1999). This study found that individuals who prioritise environmental concern for themselves are less likely to pay a premium for sustainable hotel practices, indicating a significant negative relationship between environmental concern for self and WTP. Concerns for others and the biosphere did not significantly impact WTP, implying that these concerns did not strongly influence consumer decisions to pay higher prices.

The negative association of EC for self on the relationship between HEP and WTP could be because customers with high EC for self may be more critical of HEP. If they perceive a hotel's environmental efforts as insincere, they may question its commitment to sustainability and may not be keen to pay. Some individuals might not see a direct connection between their values and HEP and are not keen to pay more (Stern et al., 1999. Some customers might like to take personal actions in their daily lives to be environmentally friendly. They view hotel choices as less impactful, making them unwilling to pay a higher price. Consumers may also find other hotels that offer similar or better environmental practices without the associated higher price. EC for others and the biosphere did not show significant moderation. The findings indicate that people do not always translate general environmental values into personal actions. Concerns for others and the biosphere may be morally important, but they may lack imminence and relevance during leisure activities like hotel selection. ECs may not translate into specific actions in leisure and tourism contexts where immediate gratification or affordability often takes precedence (Kollmuss & Agyeman, 2002). Also, hotels may not effectively communicate how their sustainability practices benefit local communities or the environment. If guests are not explicitly shown how their choices support others or the biosphere, they may not relate to the cause. Consumers may feel that their individual hotel choices have little effect on global environmental outcomes, resulting in low behavioural follow-through.

Millán et al. (2024) state that there is little understanding of how gender and age affect tourist behaviour while using hospitality services. Prior studies have found women to be more concerned about the environment (Bohdanowicz et al., 2011; Chan, 2013; Wang et al., 2018). This study showed that men are more willing to pay a higher price (Damigos, 2023; Jurado-Rivas & Sánchez-Rivero, 2019; Kang et al., 2012). It could be attributed to the different motivational frameworks of male and female consumers. When it comes to environmental concern for self, men may view hotel sustainability as insufficient or irrelevant to their comfort or utility, thus leading to an adverse interaction effect. Additionally, men may be more price-sensitive or less influenced by ethical or green marketing appeals. They require utility-driven incentives (Diamantopoulos et al., 2003).

Previous research on demographics has reported mixed results for age (Dimara et al., 2017; Fuentes-Moraleda et al., 2019; Han et al., 2010; Wang et al., 2020). This study found that younger consumers with high EC for self are less willing to pay for environmentally friendly hotel practices. The findings show that younger customers express environmental concern but are less willing to make financial sacrifices, especially when the benefit is indirect or long-term (Gadenne et al., 2011; Johnstone & Tan, 2015). Younger males with high EC for self may devalue sustainability in hotels, seeing it as a marketing gimmick or cost burden. Older adults may have greater emotional and cognitive investment in environmental concern for others (future of children, communities, and collective well-being), leading to a more substantial alignment between their social-environmental values and economic behaviours (Carstensen et al., 1999). The findings are consistent with Han et al. (2010), who found that older guests are more willing to support sustainable hospitality services when they perceive social and community-level benefits. Similarly, Roberts (1996) and Ng & Burke (2010) note that older consumers often express greater ecological concern and ethical consumption patterns, especially when such concerns involve implications for others. They may also be more informed about climate issues and more trusting of green certifications and sustainability messaging. The findings align with previous studies showing that older demographics consistently integrate environmental values into purchasing decisions (Han et al., 2010, 2011; Gadenne et al., 2011).

5. RESEARCH IMPLICATIONS

5.1 Theoretical Contribution

The study makes several theoretical contributions to the hospitality and sustainable consumption literature by expanding the understanding of how EC, moderated by demographic variables, influences consumer's WTP for green hotel practices. Previous research has shown that HEP positively influence WTP (Berezan et al., 2013; Han et al., 2010; Rivera-Camino, 2007), and this study confirms those findings within India's highly price-sensitive market. It suggests that even in developing countries and emerging economies, consumers are beginning to value sustainability when it is meaningfully communicated and tangibly experienced. The findings reinforce and extend global findings (Kim et al., 2022; de Araújo et al., 2022) into a developing country context, which remains underexplored in the literature.

Previous research has evaluated ECs as a single construct (Kang & Nicholls, 2021; González-Rodríguez et al., 2020). This study advances theoretical understanding by disaggregating EC into three dimensions suggested by Schultz (2001), i.e., concern for self, others, and the biosphere. When individuals approach EC for self, they focus on how environmental issues directly impact their well-being, interests, lifestyle, and future. The concerns centre around personal benefits, comfort, and resource protection (Sangpikul & Thipbharos, 2024). When individuals approach EC for others, they focus on the well-being and interests of others,

the broader community, and future generations. When individuals approach EC for the biosphere, they focus on the well-being and sustainability of the entire biosphere, including all living organisms and their interactions with the Earth's ecosystems. The study offers a distinct view, revealing that EC for self negatively influences WTP. The findings challenge assumptions that ECs promote sustainable consumer behaviour (De Leaniz et al., 2018; Boronat-Navarro & Pérez-Aranda, 2020). The finding suggests that EC for self may heighten expectations and scepticism, making these consumers more critical and less easily convinced by hotel sustainability claims, thus contributing to a refinement of attitude-behaviour theories in green consumption.

The non-significant moderation effects of EC for others and the biosphere suggest that abstract, moral, or altruistic values do not automatically translate into WTP. The findings align with the value-action gap theory (Kollmuss & Agyeman, 2002; Stern et al., 1999). The study also responds to calls by Millán et al. (2024) for a greater understanding of how demographics such as gender and age influence sustainable tourism behaviour. It contributes to the literature by offering a moderated moderation framework, demonstrating that age and gender influence how EC for self affects the HEP–WTP link. The findings extend work by Diamantopoulos et al. (2003) and Gadenne et al. (2011), showing that younger men with high self-concern may react negatively to sustainability efforts, possibly viewing them as insufficient, performative, or cost-inefficient. It opens a theoretical avenue for integrating scepticism and perceived authenticity into green behaviour models, especially for male and younger cohorts. Additionally, the finding that older consumers are more responsive to environmental concern for others and the biosphere confirms earlier research by Han et al. (2010) and Roberts (1996), which shows that moral and unselfish drivers are more potent among older demographics. Theoretically, this suggests that age is a psychological filter that enhances the salience of long-term social and environmental impacts in consumer decision-making.

The extant study uses DOI theory to conclude that older consumers are adopters of innovation. They are also co-diffusers by sharing their experiences through storytelling, social media and reviews, while men under 35 fall into the late majority or laggards, resisting paying a premium for sustainability. The findings align with previous applications of the DOI theory in tourism (Smerecnik & Andersen, 2011). The study highlights that STP strategies are needed to segment markets by age, gender and perceived value. Additionally, it underscores the role of IMC in crafting tailored messages to improve the perceived value and relative advantage of sustainable hotel practices. Through this lens, the study enriches our understanding of how innovation adoption and communication strategies must align with consumer values to drive green behaviour.

Finally, the influence of age, gender, and EC types on WTP may differ in societies with robust environmental norms or higher income levels. Further research is needed to validate these findings across diverse cultural and economic contexts. The insights from this study could be applied in international contexts by adopting context-sensitive, segmented approaches rather than generic green labels.

5.2. Practical Implications

5.2.1. Application of Diffusion of Innovation Theory

Authors found that the perceived relative advantage, simplicity and trialability of sustainability innovations were key factors in their adoption (Smerecnik & Andersen, 2011; Tiwari & Thakur, 2021). This study highlights that while consumers generally perceive green hotel practices positively, their willingness to pay a premium varies across age, gender, and type of environmental concern. Thus, consumer's decisions to pay higher prices for green hotels depend on how convinced they are of making a difference and how hotels communicate these practices. Thus, hospitality managers must devise ways to attract the right market segment. Hotels can focus marketing efforts on early adopters, who, in turn, influence the early and late majority through social media and word-of-mouth. Hotels can bridge this gap by localising environmental storytelling, emphasising community impact, and offering evidence.

IMC strategies can be developed to target specific customer groups (Marín-García et al., 2025). IMC emphasises the need for a cohesive, targeted, consistent message across all marketing platforms to influence consumer perceptions and behaviours (Kliatchko, 2008). This study reveals that consumers do not uniformly respond to generic sustainability messages. Instead, their reactions depend on how personally relevant, credible, and emotionally resonant those messages are, especially when filtered through lenses of EC, age, and gender (Sangpikul & Thipbharos, 2024). Hotels can bridge the gap between customer EC and WTP for sustainable practices by focusing on transparency, effective communication, and tangible environmental benefits. IMC strategies could emphasise tangible benefits such as enhanced health, comfort, or unique guest experiences for consumers with high self-concern, especially younger males. Communication could focus on moral responsibility, legacy, and community impact for older guests, highlighting how the hotel's practices benefit local ecosystems or social welfare. Hotels can highlight how sustainable practices lead to better health outcomes (chemical-free bedding, clean air), enhanced comfort (natural ventilation), or exclusive experiences (organic farm-to-table dining). Research shows that framing sustainability regarding personal gain can significantly increase engagement and purchase intent, particularly among self-oriented consumers (Peattie & Crane, 2005; Sangpikul & Thipbharos, 2024).

IMC campaigns can leverage website narratives, social media stories, in-room communication, and guest interactions to reinforce sustainability messages (Belch & Belch, 2018). Storytelling showcasing real-life impact (reduced plastic use, community

engagement, wildlife protection) may bridge the emotional gap, increase observability and trialability, and key diffusion and behaviour change elements. Marketers can leverage gamification and digital engagement to reach younger, less committed audiences. Apps or loyalty programs that reward circular behaviour, like reusing towels or opting for low-carbon transport, can create incentives that align with competitive and reward-driven mindsets common among younger demographics (Jacobs et al., 2025; Ruiz-Fernández et al., 2025). These tools can make sustainability interactive and appealing without relying solely on ethical appeals. Certifications and third-party endorsements should be used strategically to enhance credibility, addressing the scepticism among consumers with high self-concern. To overcome price sensitivity, hotels can explore tiered pricing models where green options are offered as value-added upgrades rather than default premiums. Alternatively, partnerships with government or eco-certification bodies can offer incentives or recognition badges that help justify premium pricing through credibility and trust (Rahman et al., 2012). Managers must train front-line staff to consistently communicate green practices during guest interactions, increasing visibility and reinforcing brand identity (Ansong et al., 2024).

CONCLUSIONS AND LIMITATIONS

The study provides insights into the relationship between HEP, EC and customer's WTP while staying in a hotel. The research highlights that EC for self does not always lead to financial support for sustainable practices. Consumers above 35 years are more likely to pay extra for environmentally friendly hotels, whereas younger men are less likely to pay extra. The moderated moderation analysis further underscores the significance of age and gender in shaping consumer preferences for sustainable hospitality. These findings contribute to the growing body of literature on sustainable tourism by applying the DOI theory to explain the adoption of green practices in hotels. The study also offers practical implications for hotel operators, suggesting the need for targeted marketing strategies that align with consumer demographics and EC. The study is limited to consumers who have stayed in resorts in Goa, India. Similar research could be conducted in different locations for further generalizability. Future studies could also look at hotel environmental practices and map customer perceptions. A mixed-method approach to assessing consumer perception could add more depth to the study.

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