



Research article

The impact of deontological and teleological variables on the intention to visit green hotel: The moderating role of trust

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ABSTRACT

Green hotels have grown in popularity due to customers' increased awareness of environmental issues. This study aims to construct and evaluate a model that combines the theory of Planned Behavior (TPB) and the theory of ethics to explain green hotel visitors' intentions and behavior. The study also considers the role of trust & subjective norms as a moderator. The framework of the study was evaluated using a quantitative method. Most of the respondents to the study, which was carried out in Noakhali, Bangladesh, were students at Noakhali Science and Technology University and their family members. The data was collected from 414 respondents and analyzed using the structural equation modeling (SEM) technique. The data collection took around two weeks, starting from December 3, 2021. According to the study's findings, the deontological (Moral obligation and justice) and teleological variables (perceived benefit and perceived risk) significantly influence green hotel visitors' intentions and actual behavior. Moreover, trust noticeably influences the relationship between subjective norm (SN) and Intention, and subjective norm affects the connection between attitude and intention. Therefore, hotel management can utilize this research to examine and understand visitors' intention and actual behavior to visit green hotels, which will assist them in attracting guests by portraying their services as eco-friendly. Furthermore, the findings may help hotel management formulate competitive marketing strategies, design effective promotional tools, and help generate an eco-conscious customer base.

1. Introduction

Tourism is a significant economic and social industry, accounting for 10.4% of the global GDP, 7% of global exports, and 10% of employment [1]. In the case of Bangladesh, The Bangladesh Bureau of Statistics' survey found that the hotel and restaurant industry contributed 87,926 crores of Bangladeshi taka (Tk) to the nation's GDP in the fiscal year (FY) 2019–2020, up 7.34 times from FY2009–2010's Tk 11,986 crore [2]. However, tourism creates 8% of greenhouse gas emissions [3]. In addition, hotels consume plenty of resources in their everyday operations [4], which negatively influences the environment. According to a survey [5] conducted in 2007, which included 7751 participants from Brazil, Canada, China, France, Germany, India, the UK, and the USA, 87% of consumers are concerned about the impact of the products they purchase on society and the environment. For this reason, environmental

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sustainability has become a crucial aspect of their marketing strategies. The importance of tourism to economic development has led to a rise in studies on tourism sustainability for many years, and there is a call for more significant research to ensure environmentally responsible tourism behavior [6].

Green hotels, an initiative to introduce environmental sustainability to the tourism sector, have grown in popularity due to guests' increased awareness of environmental problems [7]. For the restaurant industry, implementing green practices is essential because they save money and assist the local economy and ecology [8]. Furthermore, food waste and single-use plastic, more recycling, and more domestically produced, organic, and vegetarian food choices not only assist in lowering the hospitality sector's massive carbon footprint [9] but also provide a competitive advantage [10]. In addition, increased consumer demand [11], improved brand image [12], and customer willingness to spend a premium for their offerings [13] may all benefit green restaurants. As a result, the modern hotel sector emphasizes essential impacts on environmental sustainability [14–17]. Marriot International, USA has incorporated sustainability into every aspect of its operations, from the supply chain integration to the site development and architecture, and several energy-saving projects were started by the NH Hotel Group in Spain, replacing inefficient equipment, including lightbulbs, minibars, and heaters with more energy-efficient options [18].

Businesses and consumers have gained an excellent grasp of sustainable consumption over the past few decades [19] as customers have become more environmentally conscious and seeking out environmentally friendly products [20]. Due to the rising demand for travel worldwide, rivalry among tourist attractions has become eminent [21]. Green hotel customers' behavioral intentions have been strengthened after the inception of the COVID-19 epidemic [15,22].

Hospitality researchers have turned to behavioral theories such as the theory of planned behavior (TPB) [23–25] and the theory of reasoned action (TRA) [26,27] to understand the intentions of their customers better. Contemporary studies have also attempted to integrate ethical aspects into TPB models. For example, moral duty is an ethical variable in the conceptual frameworks of [28,29], and [14]. The H–V model and TPB were used in this study to examine green hotel intention and behavior. However, few studies have used the TPB theory with ethical theories to research green hotels [30,31]. Academics studying ethical consumption have recently begun to pay more attention to the H–V model since it is crucial to consumers' decision-making. As a result, this study makes the case that ethics theory is underrepresented in previous research and should be addressed. As a result of these academic efforts, a more straightforward yet brief model incorporating ethical and behavioral concepts is needed to study variables influencing customers' behavior regarding visiting green hotels. This research aims to develop and test a model to understand better the elements that influence customers' preferences to stay at green hotels.

Justice and moral obligations are both included in deontological systems [32]. Customers' moral obligations in a business context refer to the moral judgments made by consumers [33], and Justice is the equitable application of standards to treat people in similar situations [32]. When someone applies their values to the choices without considering their ramifications, this is known as deontological evaluation (DE) [34,35]. According to DE, it is one's responsibility to act in a way that is morally appropriate [36]. A person's assessment of the overall amount of perceived goodness vs. badness of each choice and the resulting behavior is known as teleological evaluation (TE) [35,37]. Other published research supports that DE and TE impact consumers' decisions [34]. For instance, Yoon [38] used both DE and TE to describe how people make decisions. Similar results were found in Mayo and Mark's [39] study, which shows that DE and TE significantly impacted consumers' ethical judgments. Overall, the research supports the crucial roles that DE and TE perform in individuals' decision-making processes.

Trust in Green Hotels is a new variable in the model to moderate the relationship between TPB-based precursors and the Intention to Book a Green Hotel. According to Ganesan [40], trust is a level of confidence in the opposing entity or person based on expectations for that entity's performance, dependability, and fairness. In a recent study [41], the relationship between green trust and the theory of planned behavior (TPB) was examined and proved to demonstrate how green trust affects customers' willingness to decide whether or not to visit green hotels.

According to Acampora et al. [42] review paper, till 2018, 371 articles were published worldwide focusing on the green hotel which studies conducted in the USA (98), China (47), Spain (46), Taiwan (32), Malaysia (27) and India (14) are noteworthy. Most studies concentrated on green practices (278) and consumer behavior (160). In Asia, recently, some significant studies focused on variables such as values, image, and motivation. A positive perception of green hotels, in general, was driven by the interaction of two crucial conditions, environmental values, cognitive image, and low-carbon knowledge, as investigated by Salem et al. [43] in Oman. Furthermore, compared to other, more sophisticated TPB indicators like intention and perceived behavior control (PBC), self-determined motivation shows a significantly more significant impact in China [44,45]. The purpose of Verma et al. [46]'s research, based in India, was to empirically validate the impact of values (biospheric, egoistic, and altruistic) and ascribe responsibility to consumers' attitudes toward green hotels and broader environmental consciousness. Wang et al. [47] found these values (biospheric, egoistic, and altruistic) significant in influencing the attitude and personal norms of long-stay hotel guests in China. Nevertheless, it is still in its early phases. There is a lack of a synchronized empirical framework for research on customers' green hotel stay behavior in Asian nations [48], especially in south Asia. While forty-one hotels in Bangladesh employ sustainable methods in their everyday activities, such as Ascott The Residence, The Westin, Radisson Blue Water Garden, Amari Dhaka, Four Points, and others (Hotels, 2022), little research [49,50] have examined the factors of green hotel visiting selection, or how environmental knowledge, green awareness, and green trust encourage Bangladeshi tourists to choose a sustainable hotel. This study explores elements that affect visitors' decisions to stay in green hotels using a comprehensive framework based on prior debates and critically assessed studies in the context of green hotels. This model type is rarely studied [30,31]. Therefore, this study contributes to the body of research on green hotels. Second, this study adds to the existing literature on green hotel choices, showing conflicting results [30,51]. Third, by fusing the TPB and ethical theories, this study explains the elements influencing visitors' decisions to stay in green hotels. This study enhances the body of literature by analyzing the role of green trust as a crucial contextual element and moderator in predicting green hotel adoption

intention. Notably, each of these elements has been identified as crucial in establishing green hotels’ brand equity and customer loyalty [52]. Furthermore, this study responds to calls from previous research for new understandings and a deeper comprehension of the success or failure of green hotels [38,45].

2. Theoretical background and hypotheses

2.1. Green hotels

According to the Green Hotel Association, Green hotels are “environmentally friendly properties that adopt programs to save water, energy, and solid waste while saving money to safeguard the environment” -Green Hotel Association [53]. This definition is one of the most widely acknowledged definitions of green hotels today [54,55]. According to Arun et al. [56], the principle of saving money is critical to this denotation since it can shift the green hotel’s image from premium to less expensive in the consumer’s sentiment, who may expect hotels to pass on cost savings to them. However, in most cases, hotels must demand premiums from their customers to realize these cost savings using an ambidextrous business model [57], underscoring the need to examine particular green efforts and their impact on consumer adoption behavior. Green hotels have “developed to incorporate all elements of sustainability and corporate social responsibility” – Sustainable Hospitality Alliance [58]. Moreover, unavoidable environmental issues necessitate immediate societal action to foster sustainable growth, safeguard biodiversity, and confront the challenge of climate change [59]. Travel & leisure firms can benefit from the Sustainable Hospitality Alliance’s support in developing more ethical business practices. Hotels must blend green thinking and decision-making at every level of their operations to be truly green. Hotel greenness has no universally agreed-upon standard, even though this notion is widely accustomed.

2.2. The theory of planned behavior (TPB)

The TPB is a development of the theory of reasoned action (TRA), which asserts that human choices are spontaneous [60]. According to Ref. [61], most human behavior is foreseeable since people make decisions based on logic. People mold choices depending on their assessment of the opportunities accessible to them. According to the idea, attitude and subjective norms are two aspects that influence intent [61]. An individual’s attitude is based on the assumption that taking particular behaviors will produce a positive outcome. Subjective norms, on the other hand, emerge from normative ideas. The TRA is widely applied in marketing and consumer behavior research [62–64].

The distinction between the TRA and the TPB is that the latter considers non-volitional elements [65,66]. The TPB includes a new set of dimensions in addition to the TRA model, specifically the control beliefs and perceived behavioral control combination. It is the identification of the extra factor that people’s decisions may be affected by circumstances rather than their self-volition.

A green hotel is more likely to attract guests who believe it is good for the people and environment. According to Ref. [67], consumers are positive about staying at green hotels since they are concerned about the environment. Attitude is the degree to which a person views a behavior favorably or unfavorably [68]. The results of the Ibnou-Laaroussi et al. [6] study shows that travelers’ attitudes were significantly influenced by how sustainably they perceive green tourism and how concerned they are about the environment. There is a correlation between environmental concerns and positive or negative perceptions of green hotels and an intent to remain at green hotels [69]. In addition, to research, consumers who have a favorable view or image of green hotels are more likely to book or stay at a green hotel [43,70].

Social pressure exerted by others is the subjective norm [71]. According to Yarimoglu and Gunay [25] and Wang et al. [72], subjective norms significantly impact travelers’ intentions to stay in green hotels. Perceived behavioral control concerns difficulty in carrying out a particular behavior [73]. The more influence consumers have over external factors, the more likely they are to indulge in this behavior [74]. According to recent research, consumers’ opinions of their ability to manage their behavior influence their decision

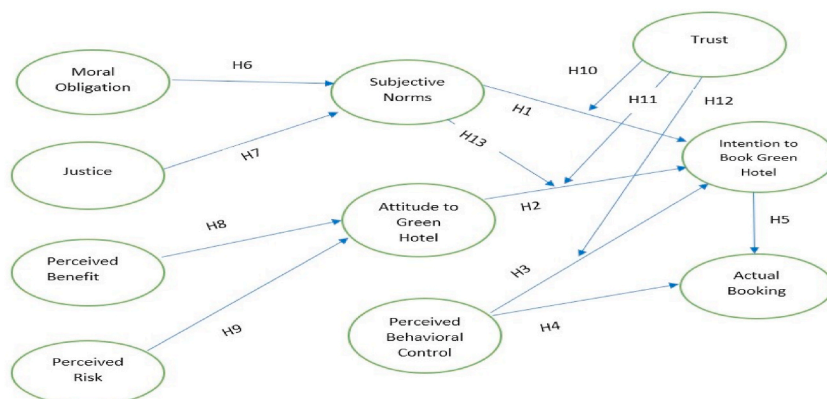


Fig. 1. Conceptual model.

to stay in green hotels [4]. Our model revolves around the TPB as a consequence (see Fig. 1).

It is commonly accepted that TPB may be used to understand customer behavior in various situations [65]. The numerous areas where TPB has been effectively implemented include, e.g., traveling [25], health behavior [75], e-shopping [62]; renewable energy [76], place image [70,77], travel goods [78], and green hotels [4,45,72]. Complementing the above, this research shows that the TPB framework, which defines subjective norms and attitudes, may help us better understand customers' intentions to stay in green hotels. These are some of the hypotheses that have emerged as a result.

H1. Subjective norms have a favorable impression on the intention to stay in green hotels.

H2. The guests' attitude toward green hotels favorably influences the intention to visit green hotels.

PBC impacts both intentions and actual behavior, working in tandem with TPB. It applies to those unable to exercise total control over the behavior of interest [65]. On the other hand, the PBC method may be utilized to understand better how intention takes part in the context of PBC [74]. Resources and opportunities are strongly linked to behavioral outcomes, as shown by Ajzen [68]. Although its function may differ depending on the situation, it is still vital. There is a particular reason for using personal control detection (PCD). As a result, PBC dramatically affects people's thoughts and actions. This element is a supplementary anticipator of behavior [65]. Additionally, there may still be difficulties in enhancing behavioral performance because of external variables like the environment. A strong desire to participate in the behavior under discussion is anticipated for those with high levels of PBC. In contrast, those who possess shallow PBC levels are expected to have a weaker desire. With PBC, taking complete command of any given circumstance is possible. There is a possibility that this might have a straight effect on the intention and behavior.

Consequently, it has been acknowledged as an additional factor in predicting behavioral patterns [65,74]. Furthermore, PBC directly impacts green consumption by altering elements such as the availability of the product itself or information thereof, the product's pricing, the availability of the product, and the ease of usage [65]. Studies show a significant and positive connection between PBC and intention in a variety of scenarios, including green hotels [49], e-shopping [62], health behavior [63], organic food [64], sustainable green tourism [6,44,79], health psychology [75].

The intention is described throughout this paper as a person's preparedness to engage in a specific behavior, a crucial dependent variable in research based on the TPB. Accordingly, some academics in green consumption have investigated the link between intention and behavior in green consumption contexts e.g., Refs. [28,45,74]. To avoid any unnecessary complexities, Eid et al. [54] stress that TPB did not differentiate between intention to use and actual usage. However, the intention to use is typically based on the person's subjective beliefs and values. There is a positive affiliation between the intention to use and actual usage, as Kumar et al. shows [64]. This finding led researchers to postulate that having the intention to use would increase the probability of one going through with it. In light of this, the following hypotheses have been proposed.

H3. Perceived behavioral control impacts the intention of visiting green hotels.

H4. Perceived behavioral control affects actual booking significantly.

H5. Intentions to stay in green hotels have a significant impact on actual bookings.

2.3. Ethical theories

Hunt-Vitell (H-V) explores how individuals form ethical decisions based on incentives and values and analyze customers' ethical decision-making [31,79,80]. This model was constructed to depict a human's thought processes when confronted with an ethical challenge, even if tested for Artificial Intelligence behavior [81].

In the model, two main processes are explained. The first is based on moral obligation and fairness, the Deontological process, whereas the Teleological process is based on perceived risk and benefit. It entails making a cognitive judgment of a particular action taken as part of making an intention to act. As a result, the outputs of each model's operations are influenced. The model focuses on ethical considerations and the effects of those considerations on subsequent behaviors. According to the H-V model, the entire reasoning process is initiated when a consumer faces an ethical issue. Once that happens, consumers will evaluate their ethical judgments on deontological and teleological grounds due to their perception of the ethical issue [82]. As a result, their ethical judgments will strengthen their intentions, leading to acts done on purpose.

Both justice and moral obligations variables are explained by deontological theories and could be used by stakeholders [83]. Insights into the justice of the actions and feelings of guilt have a role in determining moral intentions [84]. According to Tankebe [85], procedural justice influences how a person cooperates with the police in an investigation. In addition, the research on digital piracy [32] indicated that TPB variables, in conjunction with moral obligation, affected intention. The present research also investigates the link between moral obligation and justice regarding the intention to stay at eco-friendly hotels, given deontological constructs' considerable influence on subjective norms. Furthermore, the present research investigates the impacts of moral obligation and justice on the intention to visit green hotels since deontological constructs significantly influence subjective norms.

Consumers' judgments of what they consider right or wrong are called customers' moral obligations in a business environment [33]. As described by Ref. [86], moral duty stems from an individual's belief in the "best" course of action in a given circumstance. Haines and Leonard [87] exerted the moral obligation as an analytical component in IT ethics to foretell intention. However, Ajzen [68] discovered that a person's intention to take responsibility for their actions influenced those intentions. According to Ajzen [68], attitude, subjective norms, and perceived behavioral control are not the only factors that affect the intention to participate in immoral behavior. An individual obligation is a significant driver of consumers' intentions, according to Ref. [24]. Subjective norms are

recognized as a product function that points out one's normative ideas and drives to fulfill moral obligations [88]. As a normative ethical criterion, moral obligation is thought to be founded on individual beliefs and subjective norms [84]. In light of the preceding, the following hypothesis has been proposed.

H6. Moral obligation positively influences subjective norms.

Justice is a moral development notion [89] and has been defined as “the treatment of persons in comparable circumstances following fair norms” [32]. Justice theories already exist and provide light on how cultural variations impact the administration of justice [90]. Varieties of Justice in the context of environmentally friendly hotels, “eco-justice,” which “envisions and values ecological and justice together [91], might be contemplated as the most important kind of justice in terms of subjective norms and repercussions on consumer intention. “(i) Ecological sustainability, (ii) earth community, creatures, and solidarity with others; (iii) sufficiency as a criterion of structured sharing, especially as it relates to equitable or fair consumption; and (iv) socially just participation in decisions about how to live for the good of the commons are the four guiding ethical principles of eco-justice [91].”

Justice is demonstrated to affect how subjective norms are viewed [92]. Justice profoundly impacts people's lives because it helps maintain societal order and establishes boundaries between right and wrong under established ethical principles. In light of this, justice may have a pivotal effect on individual norms about the intention to stay in green hotels. Consequently, we propose the following hypothesis.

H7. Justice significantly impacts subjective norms.

Online research and marketing ethics typically incorporate teleological factors as perceived outcomes and benefits [93,94]. According to the research of Fishbein and Ajzen [88], one's perspective on the significance of behavior is influenced by how one evaluates the outcomes of engaging in it. Therefore, it is crucial to assess how teleological theories of perceived benefits and risks are related to one another in terms of attitude. Hunt and Vitell [95] agree that appraisal impacts ethical judgment and perceived behavioral consequences. As a result, we hypothesize that attitudes toward green hotels are influenced by perceived risk and benefit.

It has also been shown that perceived benefits can change behavioral attitudes and, as a result, individual intentions [94]. Consumer attitudes and purchase intention were influenced by perceived benefits, perceived risks, and online persuasion, according to Pillai et al. [96]. Consumers regard green hotel practices and image as socially responsible, which improves their positive feelings about green hotels [97]. Additionally, eco-friendly hotels employ green practices and services to assist guests in achieving their emotional and psychological needs [98].

Customers' environmental concerns immediately and favorably influenced visitors to hotels in north Cyprus [99]. As a result, customers' preference for green hotels stems from a desire to protect the environment, which they view as an “emotional benefit” [77]. Furthermore, the materials utilized at green hotels are organic, natural, and recyclable. Customers are, therefore, more inclined to act correctly and support preserving resources and energy [98]. It was shown in research by Han and Chan [100] that people's health is a deciding element in their evaluations of the upsides of green hotels. Since resorts provide healthy produce and facilities and use less chemicals, guests feel healthier throughout their stays [100]. Consequently, we hypothesize that consumers' expectations of perceived benefits from staying in green hotels play a role in their decision.

H8. Perceived benefits positively influence attitudes towards green hotels.

Numerous works have emphasized the significance of perceived risk in human behavior since Bauer [101] originally introduced the idea of “perceived risk.” Consumers generally perceive risk when two factors coincide, uncertainty and potential adverse outcomes [102].

Aleassa et al. [32] assert that, given the uncertainties, customers are willing to take on the risk. Cabeza-Ramírez et al. [103] confirmed that attitude and buying intention are affected by perceived risk and negatively related to attitude. Mathew et al. [104] found that green image greatly influenced attitudes about drone use, whereas perceived privacy risk had a significant negative impact. Therefore, assurance significantly and positively affects people's attitudes [32]. Most researchers concur that trust is a powerful strategy for reducing risk and anxiety [105,106], confirming that guests' risk perceptions are much reduced after learning about green hotels.

“Perceived operational risk, perceived hedonic risk, perceived financial risk, and perceived self-image risk are the categories of perceived hazards concerning green hotels” identified by Chang and Ko [107]. Quan et al. [108] demonstrated a considerable impact of protective measures applied by Chinese hotels on perceptions of financial risk and consumer attitudes. Although green hotels may be more expensive than conventional hotels [43,49], the long-term savings make the additional cost worthwhile [104]. To mitigate the perceived financial risks connected with eco-friendly hotels [109], suggest emphasizing the intangible social and emotional advantages rather than the tangible, practical ones. The term “hedonic risk” is used to describe the potential for negative emotional experiences during a stay at a “green hotel” [103]. According to research on customer opinion, some green hotel practices may create hedonic risks toward green hotels. According to certain studies, guests who stay at ecologically friendly hotels may feel less valuable [107,108]. Peng and Chen [110] found that high-end hotel guests worry about how staying in a green hotel would reflect poorly on them due to the hotels' unattractive aesthetics and dearth of deluxe facilities. Based on the above debate, we set out the subsequent hypothesis.

H9. Perceived risk negatively affects attitude towards green hotels.

2.4. Moderating role of trust

Considering the literature's limited and often contradictory results, the study included a moderating variable in our analysis. The research uses trust as a moderator in the associations between subject norm and intention to book a green hotel, attitude, and intention to book a green hotel, and perceived behavioral control and intention to book a green hotel.

Services fall under the category of highly uncertain scenarios as consumers make judgments before receiving a service. Trust has been defined as a vital factor in these situations [111]. Furthermore, researchers have taken an interest in the trust in the context of green marketing because consumers "use" trust to calm their fears while making purchases of eco-friendly goods and services [112]. "Willingness to rely on acquaintances that consumers are confident in" is how Moorman et al. [113] characterize consumers' trust. Likewise, Green trust is a "willingness to rely on an exchange partner in whom one has confidence because of its environmental performance," as defined by Martinez [114].

It has been shown that a positive attitude may lead to a positive intention. However, the subjective norm is verified to have a positive connection with intention, as shown by evidence from Refs. [115,116], which runs counter to intention results. As per the research proposition, PBC has a strong correlation with intention, whereas the subjective norm has a minor role [117]. However, other research finds little indication of a connection between PBC and future behavior [118]. Due to the discrepancy in the existing studies, the authors include trust as a moderator in the study model.

Trust from customers is essential in the food business. Muslims are more likely to return to a restaurant that is not officially recognized as halal if they feel comfortable there [119]. Therefore, trust may be seen as a remedy for difficult circumstances. It might be helpful to employ the trust variable as a moderator to bridge this knowledge gap in the context of the green hotel [106,120]. Diners put their faith in the establishments they frequent. As a result, they may relax and enjoy their food without being fully informed of its provenance, safety, or preparation technique [121]. Therefore, it is hypothesized that consumers' intention to book a green hotel would plummet if they had a high degree of trust.

H10. The positive relationship between subjective norms toward the intention to book green hotels will be stronger when the customer's trust is high.

H11. The positive relationship between Attitudes and the Intention to book green hotels will be stronger when customers' trust is high.

H12. The trust levels of a consumer will play a larger role in strengthening the favorable correlation between perceived behavioral control and intention to book a green hotel.

2.5. The moderating role of subjective norms

According to the tested hypothesis, SN, Attitude, and PBC are the antecedents that most strongly impact intention. Consumer research indicates that subjective norm precedes intention [76,94]. However, a few studies have examined subjective norms as a moderator of the association between intention and attitude [122,123]. They argued that the effect of Attitude on intention was amplified the higher the subjective norm level. Hence, it would be interesting to evaluate the function of the subjective norm as a moderator in bridging the attitude-intention gap in a green hotel context. The figure (Fig. 1) shows the conceptual model with hypotheses.

H13. The positive relationship between Attitude towards Intention to book a green hotel will be stronger when the subjective norm is high.

3. Methods

3.1. Sample and data collection

We adopted a quantitative technique to test our conceptual framework in this research. From 3 December to December 15, 2021, when the Covid19 outbreak was still prevalent [124]. Data was collected via a survey questionnaire electronically using google forms. We used social media and email to reach respondents because it was not feasible to reach them physically due to covid 19 restrictions. Those who have been at a green hotel at least once within the previous 12 months of filling out the questionnaire were eligible to participate in the study. A brief explanation of "green hotels" was provided at the start of the survey. There was also a question designed to weed out anybody who recently been at a green hotel. Respondents volunteered to take part in the study. A random sample of 900 Noakhali Science & Technology University students, family members, and relatives received the link to the google form. Among the 900 questionnaires, 277 links were not opened at all.

The respondents' fear and anxiety as a result of COVID-19 could cause a substantial number of nonresponses [125]. One hundred seventy-eight respondents indicated they did not visit a green hotel last year or were not willing to do the survey (conditional question before the start), and due to incorrect conditional logic, they could not advance. After removing the 31 unfinished or partially filled questionnaires, we were left with 414 valid responses. After distributing the questionnaires, we tested for unresponsive bias using the Mann-Whitney-U-Test in SPSS software for both the first 100 respondents and the final 100 respondents. None of the differences between the groups was statistically significant at the 0.05 level of significance [126]. Therefore, the sample was not skewed by non-response. *Informed consent was obtained from our research participants before collecting data from the respondents.*

3.2. Measurement instruments

From existing studies, we created the scales: “actual behavior” and “intention to visit green hotels” [31,65,127,128]. Han et al. [129] proposed utilizing approved five-item measures to assess consumer attitudes about green hotels. Perceived behavior control and subjective norms were constructed using three items [65,128]. Based on previous studies, justice, and moral obligation scales were developed and refined [31,130,131]. Perceived risk and perceived benefits were measured using instruments developed and validated by Chen and Hung [132] and Shang et al. [133]. Items were designed as a self-reporting tool, with responses on a 5-point Likert scale (1 being strongly agreed and 5 being strongly disagreed). A detail of measurement constructs (questionnaire) is given in [Appendix C](#).

3.3. Data analysis

It was decided to employ structural equation modeling (SEM), to fulfill the research’s goal, which is to examine the complex relationships of the model based on two prime grounds. First, SEM is a robust multivariate method used frequently in scientific research to test and assess multivariate causal links [134]. SEM may be considered an extension of regression analysis and be used to examine complicated relationships between many constructs that can be of the first order, second order, exogenous, endogenous, and have a mediating or moderating influence by using the SmartPLS software [135,136]. Second, similar models were previously estimated using this SEM technique in green hotels [6,31,43,44,56,70,137]. The paper suggests utilizing a PLS-SEM technique based on two estimates: (i) measurement model evaluation, which involves assessing the reliability and validity of latent variables (LVs). This shows if the items and LVs are appropriate to gauge the hypotheses, and (ii) structural model assessment, which evaluates the links between LVs (Path analysis). On account of the suggested conceptual model ([Fig. 1](#)) will be described and investigated in detail since the results of this examination indicate whether the hypotheses are to be rejected or confirmed. The data analysis process is shown as a flowchart in [Appendix B](#).

4. Results

4.1. Demographic profile of the respondents

The demographics of respondents and inhabitants are shown in [Table 1](#). According to [Table 1](#), 62.9% of the 414 participants were male, while 37.1% were female (37.1%). Most of them were in their 20s or 30s. Most respondents reported yearly incomes less than BDT 20,000 (about \$240). (45.7%). They mainly were bachelor’s degree holders (68.6%). Furthermore, these respondents came from various parts of Bangladesh. Their average number of visits to green hotels per year was less than three.

Based on previous research [138,139], we used G*Power (version 3.1.9.4) to select a sample size of at least 134.

4.2. Assessment of measurement model

Before validating a reflective measurement model, it is essential to acknowledge its internal consistency (Cronbach’s alpha, composite reliability, and rho A), convergent validity (loadings, average variance extracted), and discriminant validity [135]. Internal reliability of the measurement scale was assessed using Cronbach’s alpha, and all variables had alphas greater than 0.70 (Refer to [Table 2](#)). Components of reliability assessment include internal consistency reliability (Composite reliability), rho A, and indicator

Table 1
Respondents’ demographic profile.

Demographic characteristics	Segments	Number of Respondents	(%)
Sex	Male	260	62.8%
	Female	154	37.2%
Age	Less than 20 years	33	8.0%
	20–29 years	331	79.95%
	30–39 years	29	7.0%
	40–49 years	17	4.1%
	Above 50 years	4	0.95%
Level of education	Below High school	12	2.89%
	Higher Secondary	42	10.14%
	bachelor degree	282	68.12%
	Master’s degree or above	78	18.85%
Income	Less than BDT 20,000	186	44.93%
	20,000–35,000	136	32.85%
	36,000–70,000	69	16.68%
	71,000–100,000	10	2.4%
	More than BDT1,00,000	13	3.14
Frequency of visiting green hotels during the last	<3 times	334	80.67%
	3–6 times	62	14.98%
	6–9 times	7	1.69%
	More than nine times	11	2.66%

Table 2
Analyzing the data from scales used to measure various constructs.

Construct/Indicators	Scale name	Indicator loadings	Mean	Standard Deviation	Composite reliability	Cronbach's alpha	Rho_A	Average Variance Extracted (AVE)
Actual Booking					0.931	0.889	0.890	0.621
I feel that I have played a great part in helping the environment when I stayed in green hotels	ACT1	0.878	3.889	1.064				
I feel more comfortable when I visit green hotels rather than normal ones	ACT2	0.928	4.157	1.075				
I aim to book green hotels again after my first booking	ACT4	0.905	4.010	1.086				
Intentions to book					0.944	0.964	0.965	0.904
I expect to continue booking a green hotel in the future	INT1	0.944	3.928	1.101				
I will make an effort to book a green hotel when traveling	INT2	0.961	4.017	1.076				
I would prefer to book a green hotel in the future as compared to its competitors	INT3	0.952	3.961	1.096				
My willingness to book a green hotel is high	INT4	0.946	4.051	1.123				
Subjective norm					0.948	0.934	0.935	0.884
Most people who are important to me think I should book a green hotel while traveling	SUB1	0.942	3.604	1.071				
Most people who are important to me would want me to book a green hotel while traveling	SUB2	0.955	3.560	1.110				
People whose opinions I value would prefer that I am green hotel when traveling	SUB3	0.922	3.688	1.082				
Attitude					0.889	0.845	0.863	0.617
For me, booking a green hotel when traveling is (Extremely bad-Extremely good)	ATT1	0.780	4.541	0.727				
For me, booking a green hotel when traveling is (Extremely Undesirable-Extremely desirable)	ATT2	0.787	4.413	0.799				
For me, booking a green hotel when traveling is (Extremely unpleasant-Extremely pleasant)	ATT3	0.864	4.524	0.734				
For me, booking a green hotel when traveling is (Extremely Unfavorable-Extremely favorable)	ATT4	0.684	4.222	0.955				
For me, booking a green hotel when traveling is (Extremely foolish-Extremely wise)	ATT5	0.802	4.495	0.767				
Perceived Behavioral control					0.886	0.806	0.837	0.722
Whether or not I stay at a green hotel when traveling is completely up to me	PBC1	0.826	3.698	1.067				
I am confident that if I want, I can stay at a green hotel when traveling	PBC2	0.923	3.850	1.020				
I have resources, time, and opportunities to stay at a green hotel when traveling	PBC3	0.795	3.541	1.055				
Moral obligation					0.935	0.897	0.898	0.829
I would feel guilty if I stayed in a hotel damaging the environment	MRO1	0.907	3.768	1.118				
To stay in a hotel that damages the environment would be morally wrong for me	MRO2	0.915	3.865	1.043				
Staying in a hotel that affects the environment would go against my principles	MRO3	0.909	3.797	1.080				
Justice					0.915	0.815	0.815	0.844
Staying in a hotel damaging the environment is unfair	JUS1	0.917	3.935	1.105				

(continued on next page)

Table 2 (continued)

Construct/Indicators	Scale name	Indicator loadings	Mean	Standard Deviation	Composite reliability	Cronbach's alpha	Rho_A	Average Variance Extracted (AVE)
Staying in a hotel damaging the environment is unjust	JUS2	0.920	3.597	1.133				
Perceived benefits					0.900	0.833	0.835	0.750
If I stayed in a green hotel, I would save money	BEN1	0.858	3.169	1.033				
If I stayed in a green hotel, I would save time	BEN2	0.891	3.176	1.019				
If I stayed in a green hotel, I would improve my work performance	BEN3	0.849	3.640	0.960				
Perceived risk					0.829	0.789	1.303	0.558
There is a chance that there will be something wrong with environmental performance of this green hotel.	RSK1	0.578	3.130	0.944				
There is a chance that this green hotel will not work properly with respect to its environmental design.	RSK2	0.596	3.128	0.971				
There is a chance that you would get environmental penalty or loss if you use this green hotel	RSK3	0.944	2.394	1.078				
There is a chance that using this green hotel will negatively affect the environment	RSK4	0.809	2.423	1.109				
Trust					0.952	0.932	0.933	0.831
I feel that this hotel's environmental reputation is generally reliable	TRUST1	0.905	3.577	0.944				
I feel that this hotel's environmental performance is generally dependable	TRUST2	0.926	3.604	0.886				
I feel that this hotel's environmental claims are generally trustworthy	TRUST3	0.917	3.597	0.887				
This hotel's environmental concern meets my expectation	TRUST4	0.900	3.715	0.925				

For the sake of this discussion, we will use the abbreviations ACT = Actual Booking, INT = Intention to Book, SUB = Subjective Norms, ATT = Attitude, PBC = Perceived Behavioral Control, MRO = Moral Obligation, JUS = Justice, BEN = Perceived Benefits, and RSK = Perceived Risk.

reliability (Items loading on the related latent variable). There should be a loading of greater than 0.5 between each indicator and the composite dependability values, as stated by Ref. [140]. The item loading is more than 0.5, as predicted. Table 2 displays the loading, CR, rho A, and AVE indicators values. A new study suggests that bootstrap confidence intervals might be utilized to examine the dependability of the concept [141].

Composite reliability (CR) ranges from 0 to 1, with higher values indicating more excellent reliability and values between 0.70 and 0.90 considered satisfactory. However, values greater than 0.95 are unfavorable since they imply that all variables measure similarly [135]. Therefore, all CR values in this analysis were below 0.95.

The convergent and discriminant validity measures are used to evaluate the model. Convergent validity is evaluated using the Composite Reliability (CR) and Average Variance Extracted (AVE) coefficients [140]. According to the AVE, each indicator's loading must be greater than 0.7 for validity acceptance. Therefore, indicators with less than 0.4 and items with loadings of 0.4–0.7 should be removed if doing so will drive CRs and AVEs beyond the threshold [140]. Items with loading values more than 0.7 were deleted, ACT3 was eliminated due to a low loading value (0.178), and three items with loading values of 0.684, 0.578, and 0.596 were not removed due to CR and AVE values exceeding the threshold value [140]. The AVE must be larger than 0.5 to achieve convergent validity. That is what the literature says [140,142]. Thus, the measuring model's validity is sufficient because the CR and AVE values are acceptable (Table 2).

All of the model's constructs are distinct, as required by discriminant validity [142]. The first step was to use the Fornell–Larcker criteria (Table 3), which specifies that the maximum squared correlation of a given latent variable's (LV) construct with any other LV must be less than the AVE of all other LVs in the construct. Table 3 details the allowed discriminant validity coefficient for LVs. Some research has employed simultaneous lateral and vertical collinearity across variables [143]. Still, we opted not to since our measurements were only concerned with positive feedback [144].

4.3. Structural model assessment and hypotheses testing

The proposed model was tested using a PLS-SEM in this study. As a result, the standard goodness-of-fit metrics commonly utilized in covariance-based SEM were less valuable. PLS-SEM still used the SRMR and NFI indices. SRMR should be 0.08 or 0.10, and NFI should be 0.90 or 0.70 [145,146]. Model SRMR was 0.079, and NFI was 0.837. The model fit was good. Because the indices were satisfactory,

Table 3
Discriminant validity (Fornell–Larcker criterion).

	Actual Booking	Attitude to Green Hotel	Intention to Book Green Hotel	Justice	Moral Obligation	Perceived Behavioral Control	Perceived Benefit	Perceived Risk	Subjective Norms	Trust
Actual Booking	0.788									
Attitude to Green Hotel	0.193	0.785								
Intention to Book Green Hotel	0.821	0.244	0.951							
Justice	0.526	0.224	0.538	0.918						
Moral Obligation	0.597	0.261	0.608	0.689	0.910					
Perceived Behavioral Control	0.610	0.315	0.635	0.505	0.603	0.850				
Perceived Benefit	0.453	0.299	0.426	0.609	0.507	0.495	0.866			
Perceived Risk	0.046	−0.115	0.044	0.150	0.067	0.065	0.257	0.747		
Subjective Norms	0.601	0.284	0.690	0.496	0.523	0.595	0.479	0.102	0.940	
Trust	0.624	0.326	0.619	0.585	0.588	0.599	0.575	0.134	0.573	0.912

the model was suitable for analysis. Model fit is less critical in PLS-SEM than covariance-based SEM, according to Khan et al. [147]. Fig. 2 displays the structural model analysis.

The associations between latent variables (LVs) are evaluated in the structural model [140]. We employed bootstrapping (10,000 samples) to suggest standard errors for the structural model evaluation [140,148]. For assessing the significance of the route coefficients, PLS-SEM uses a nonparametric bootstrap approach. Bootstrapping creates subsamples of the original set of data with randomly picked observations, and these subsamples are used to evaluate the PLS path model.

The Q2 value for Stone-Geisser [149] may be determined using Smart PLS on blindfolding. This value is an evaluation criterion for the cross-validation of the PLS path model's predictive importance [135]. When the Q2 for an endogenous latent variable is larger than zero, it is indicative that the route model is predictive of the corresponding construct [135]. The results of the blind test (SmartPLS) indicate that the LVs' Q2 statistics are greater than zero: The values for Q2 in this series are as follows: Q2 (Attitude) = 0.077; Q2 (Intention) = 0.546; Q2 (Subjective Norms) = 0.265; Q2 (Actual Booking) = 0.559;

The forecasting power of a structural model is measured by its determination or Pearson coefficient (R2), which indicates how much variation in the endogenous constructs can be attributed to the total variance in the exogenous constructs to which it is related [135]. The coefficient of determination (R2) for dependent variables values was more than 10% [150,151]. As can be seen in Fig. 2, the model accounts for 61.9% (Moderate) of the Intention construct, 30.8% (Weak) of Subjective Norms, 12.9% (weak) of attitude, and 69.1% (substantial) of the Actual Booking construct.

The findings of evaluating the hypotheses proposed are shown in Table 4. Hypotheses H1, H2, and H3 examined the relationship between antecedents (subjective norms, attitudes toward green hotels, and perceived behavioral control) and intention to book a green hotel. In Hypothesis H1, it was investigated whether a higher subjective norm effect reflected a higher intention to book a green hotel. This hypothesis was correct ($p = 0.000$; $\beta = 0.379$). Hypothesis H2 was rejected ($\beta = 0.027$; $p = 0.454$), focusing on determining whether a more considerable influence of green hotel attitude reflected greater intention. Finally, H3 ($\beta = 2.000$; $p = 0.001$) was confirmed, implying that perceived behavioral control influences the intention to visit a green hotel.

Perceived behavioral control ($\beta = 0.147$; $p = 0.001$) and intention ($\beta = 0.730$; $p = 0.000$) were found to influence actual booking, supporting H4 and H5. Moral obligation ($\beta = 0.345$; $p = 0.000$) and justice ($\beta = 0.258$; $p = 0.000$) had a meaningful impact on subjective norms for green hotels, supporting Hypotheses 6 and 7. H8 and H9 were also supported, as a perceived benefit ($\beta = 0.352$; $p = 0.000$) and perceived risk ($\beta = -0.206$; $p = 0.000$) have a sound impact on attitudes toward green hotels.

Hypotheses H11 ($\beta = -0.063$; $p = 0.197$) aimed to see if trust moderates the link between Attitude and Intention to book a green resort, weakening the relation. Hypothesis H12 ($\beta = -0.023$; $p = 0.604$) examined whether trust weakens the relationship between the PBC and the intention by moderating it. Both hypotheses were rejected.

The H10 ($\beta = 0.107$; $p = 0.042$) test was used to see if the trust had a part in moderating the relationship between subjective norm and intention to book a green hotel, and the outcomes presented that trust does. H13 ($\beta = 0.107$; $p = 0.042$) shows that SN is a significant moderator between Attitude and Intention to book. The results are represented in Figs. 3 and 4.

The study also assessed some mediation effects or indirect relationships (Table 5), which might create interest in the researcher for further exploration. The intention was significant in mediating the relation between PBC and actual booking ($\beta = 0.146$; $p = 0.001$), SN, and actual booking ($\beta = 0.277$; $p = 0.197$). However, the intention was insignificant in mediating the role of attitude and actual booking ($\beta = 0.020$; $p = 0.456$). Subjective norm (SN) mediates the link between justice and intention ($\beta = 0.098$; $p = 0.001$) and moral obligation and intention ($\beta = 0.131$; $p = 0.000$). Similarly, SN and Intention significantly mediate the association between justice & actual booking ($\beta = 0.071$; $p = 0.001$) and moral obligation & actual booking ($\beta = 0.095$; $p = 0.000$). Surprisingly, attention does not mediate correspondence between perceived benefit & intention ($\beta = 0.010$; $p = 0.464$), perceived risk & intention ($\beta = -0.006$; $p =$

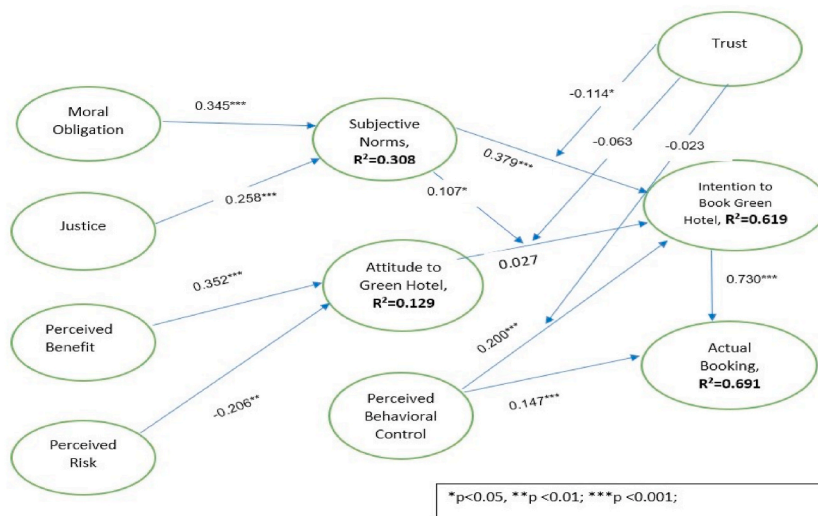


Fig. 2. Conceptual model.

Table 4
Hypothesis testing result.

Hypothesis	Paths	Path Coefficients	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	CI 2.5%	CI 97.5%	Hypothesis' Supported/Not Supported
H1	Subjective Norms - > Intention to Book Green Hotel	0.379	0.054	7.071	0.000	0.256	0.469	Supported
H2	Attitude to Green Hotel - > Intention to Book Green Hotel	0.027	0.036	0.749	0.454	-0.037	0.110	Not Supported
H3	Perceived Behavioral Control - > Intention to Book Green Hotel	0.200	0.058	3.457	0.001	0.079	0.311	Supported
H4	Perceived Behavioral Control - > Actual Booking	0.147	0.046	3.217	0.001	0.059	0.235	Supported
H5	Intention to Book Green Hotel - > Actual Booking	0.730	0.042	17.568	0.000	0.643	0.806	Supported
H6	Moral Obligation - > Subjective Norms	0.345	0.070	4.906	0.000	0.203	0.481	Supported
H7	Justice - > Subjective Norms	0.258	0.069	3.720	0.000	0.137	0.392	Supported
H8	Perceived Benefit - > Attitude to Green Hotel	0.352	0.044	8.062	0.000	0.263	0.426	Supported
H9	Perceived Risk - > Attitude to Green Hotel	-0.206	0.071	2.901	0.004	-0.307	0.025	Supported
H10	Subjective Norms*Trust - > Intention to Book Green Hotel	-0.114	0.044	2.559	0.011	-0.183	-0.012	Supported
H11	Attitude*Trust - > Intention to Book Green Hotel	-0.063	0.049	1.291	0.197	-0.167	0.030	Not Supported
H12	PBC*Trust - > Intention to Book Green Hotel	-0.023	0.044	0.519	0.604	-0.120	0.054	Not Supported
H13	Attitude*Subjective Norms - > Intention to Book Green Hotel	0.107	0.053	2.035	0.042	-0.002	0.203	Supported

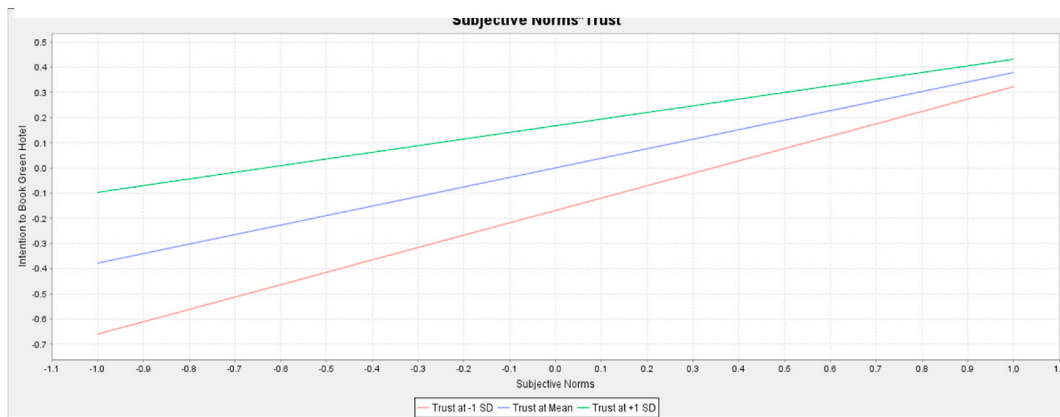


Fig. 3. Moderation effect of Trust on SN and intention relationship.

0.79), and attention and intention have no mediation impact between the link of perceived risk & actual booking ($\beta = -0.004$; $p = 0.482$), perceived benefit and actual booking ($\beta = 0.007$; $p = 0.67$).

5. Discussion and conclusions

5.1. Discussion

This essay aimed to discover the elements that impact Bangladeshi hotel visitors’ decisions to stay in environmentally friendly hotels—, by using the structural equation modeling technique through Smartpls software to check the suggested framework. Consumer findings ($n = 414$) verified the study model’s superiority, demonstrating that our proposed model appropriately explains and predicts visitor behavior. Furthermore, visitors’ preference for green hotels is sufficiently explained by the planned behavior (TPB) theory and ethical theories. Therefore, visitors’ ethical views have a significant role in their decisions regarding being green.

The results demonstrate that moral obligation is crucial in green hotels’ subjective norms. The results here are in line with those of Bobek and Hatfield [152], Cronan and Al-Rafee [153], Yoon [38], Chang and Chou [30], and Agag and Colmekcioglu [31], who discovered that moral obligation impacts customers’ subjective norms significantly. The study of Agag and Colmekcioglu’s [31]

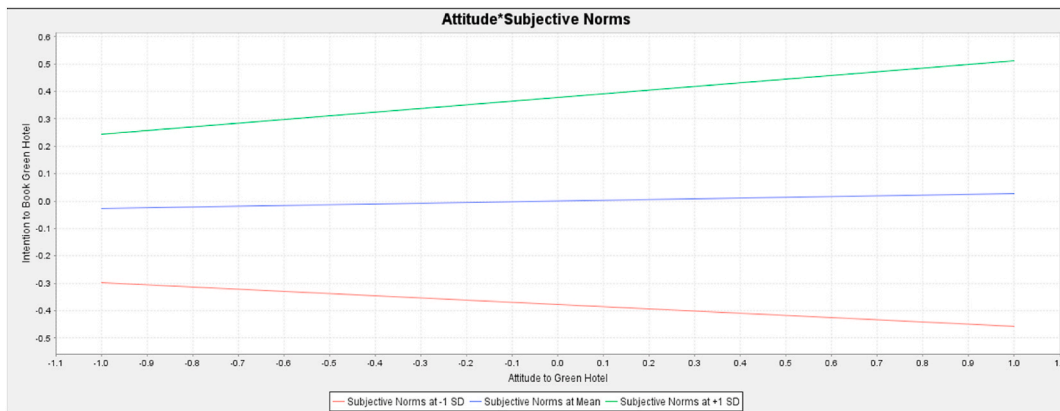


Fig. 4. Moderation effect of SN on Attitude-Intention relationship.

Table 5
Specific indirect effects' significance.

Specific Indirect effects	Original Sample (O)	T Statistics (O/STDEV)	P Values
Perceived Behavioral Control -> Intention to Book Green Hotel -> Actual Booking	0.146	3.383	0.001**
Justice -> Subjective Norms -> Intention to Book Green Hotel	0.098	3.412	0.001**
Justice -> Subjective Norms -> Intention to Book Green Hotel -> Actual Booking	0.071	3.364	0.001**
Perceived Risk -> Attitude to Green Hotel -> Intention to Book Green Hotel -> Actual Booking	-0.004	0.703	0.482
Subjective Norms -> Intention to Book Green Hotel -> Actual Booking	0.277	6.716	0.000***
Moral Obligation -> Subjective Norms -> Intention to Book Green Hotel -> Actual Booking	0.095	3.859	0.000***
Attitude to Green Hotel -> Intention to Book Green Hotel -> Actual Booking	0.020	0.746	0.456
Perceived Benefit -> Attitude to Green Hotel -> Intention to Book Green Hotel	0.010	0.733	0.464
Perceived Risk -> Attitude to Green Hotel -> Intention to Book Green Hotel	-0.006	0.708	0.479
Perceived Benefit -> Attitude to Green Hotel -> Intention to Book Green Hotel -> Actual Booking	0.007	0.727	0.467
Moral Obligation -> Subjective Norms -> Intention to Book Green Hotel	0.131	4.049	0.000***

* = p < 0.05, ** = p < 0.01; *** = p < 0.001.

findings demonstrated a positive connection between moral obligation and subjective norms of guests visiting a green hotel in Egypt, and Chang and Chou [30], in Taiwan found the above positive connection in 'Bring your own shopping bag' intention model. However, Yoon [38] in contrast, discovered a significant negative but significant connection between moral obligation and subjective norms in digital piracy consideration. The reverse study result could be explained by the fact that the software industry consumer might be different from the green hotel industry consumer in forming those relationships.

Moreover, Ahadiat et al. [94] revealed, on the contrary, that there is no significant relationship between those two variables in the software industry, strengthening the assumption of industry difference. According to Verma and Chandra [4], "greenness" draws its significance from morality. Because none of the TPB variables represents the outcome of moral concerns, adding moral obligation to TPB might increase its explanatory power, and these results are consistent with Ajzen [68].

Justice has been found to positively impact subjective norms, which is persistent with the recommendation of [31], and [30]. That means that guests believe it is unfair and unethical to stay in hotels that are harmful to the environment. However, the study result differs from Yoon's [38] study conducted in China, which detected a negative relationship between justice and subjective norms. Furthermore, Ahadiat et al. [94] found no significant relationship between these two variables in the software industry. Therefore, discrepancies in outcomes may be attributed to cultural and occupational differences. Since little research has been done on moral obligation and fairness in the green hospitality sector [31], we believe more study is warranted.

Consistent with other studies [29,31,38,96], our results suggest that travelers' perceptions of the risks and benefits associated with staying at green hotels significantly shape such stays. Consumers in Bangladesh are worried that their behavior will influence stakeholders as The TE perspective weighs the advantages and disadvantages of various possible outcomes for each practical option. Due to particular purposes, visitors choose eco-friendly options for their dining and drinking [38,95,154]. On the other hand, Ahdiat et al. [94] and Chang and Chou [30] discovered no significant link between TE and consumer attitudes toward visiting green hotels, encouraging further research. Our study assessed the connection between the three essential variables of TPB with the intention of booking a green hotel. The findings in the study showed that subjective norms influence consumers' intentions, which agrees with several studies [6,15,25,44,72,76,103,155]; but contradicts Ahadiat et al. [94] and Chang and Chow [30]. This finding is consistent with the research of Han et al. [156]. They found that a descriptive societal norm is the most important factor influencing consumers' intentions to make environmentally friendly purchases. Our results indicate that a person's intention to book a green hotel is influenced by their view about whether or not most people approve of their green behavior. Similarly, Our study discovered that perceived

behavioral control has a positive relationship with the intention to book the green hotel, which supports the study of [44,72,76,155], and [30]. That means controlling guests' behaviors had a more significant bearing on how seriously they intended to reduce their influence on the environment. In addition, this intriguing study suggests that consumers who felt in control of their decision to stay in a green hotel were more inclined to do so than those who lacked power or the opportunity to do so. Nevertheless, the study result is incongruous with [6,103], who found no link between PBC and intention.

Furthermore, several studies [6,46,72,103,108,155] observed a pretty substantial correlation between attitude and intention to stay in a green hotel that was not consistent with the findings of the current study. In contrast, in line with the research findings, Gamel et al. [76] and Verma and Chandra [4] study found no significant relationship between these two variables. Following the definition of an attitude, the current study finds that, as a predetermined phenomenon regarding a particular object, consumers find it not foremost to stay in green hotels while traveling to lessen the negative environmental impact. The operationalization of the variable attitude might explain this unconventional result. Ajzen [68] contends that attitude results from a broad behavior assessment. In contrast, Davies et al. [157] distinguish attitudes into two parts: affective, which describes feelings about behavioral intention, and cognitive, which describes a person's assessment of the likelihood and consequences of that behavior. In our study, the attitude was defined as feelings for green hotels without considering potential repercussions.

We found that perceived behavioral control has a forthright impact on actual behavior and that this effect is mediated by intentions (Table 5) and supported by Khalid et al. [158] and Agag and Colmekcioglu [31]. It is apparent why this is the case, considering that customers' preferences for eco-friendly hotels may hinge on their confidence in their ability to exercise self-control over their behavior. However, the findings also demonstrated that although perceived behavioral control does affect actual behavior, this effect is mediated by the individual's goals.

The results of the moderation study, which demonstrated that trust moderated the association between subjective norm and intention, supported H10. Our findings imply that, depending on trust, subjective norms affect green hotel booking intentions when people have little trust. It is possible that when customers lack trust, the pressure from the people around them matters to them when they book green hotels. This conclusion lends credence to the research of [159,160]. However, when there is a high level of trust, the pressure becomes less significant, and consumers may stop needing the opinions of those involved. This finding will help to explain why different studies have shown different results regarding the impact of subjective norms on intention. Ajzen [68], evaluating earlier research, also found that subjective norms occasionally failed to predict intention accurately, that evident from the study of Ahadiat et al. [94] and Chang and Chow [30]. Additional studies have concentrated on the function of subjective norms in elucidating the intention. Some researchers, like Yadav and Pathak [74] and Shin et al. [161], even advocate eliminating subjective norms from the model. On the contrary, Halimi et al. [119] found that trust has no significant moderation effect on the relationship between SN and Intention.

Consistent with the results of [160], the study observed that trust did not moderate the link between attitude and intention and between perceived behavioral control and intention. However, trust moderates the association between Attitude and Intention in the study [119]. As a result, either critical people in the respondents' lives and trust, or a lack thereof, have little bearing on their intentions toward restaurants. The ease with which guests may be visited green hotels has little to do with whether or not they can be trusted. The likelihood of attitude intention connection insignificance can be attributed to the respondent group of the study, in which the majority (79.95) of the respondents were students with an age range of 20–29 years. This group may not reflect the generalized finding of the population we anticipated. Subjective norm (H13) was also studied for its potential moderating effect on the attitude-intention relationship. The results corroborate the claims that when customers experience social pressure when visiting a green hotel, their attitude and intention associations are enhanced. The results are consistent with that of Sadiq et al. [162] but contradict the result of Ho et al. [122]. This research contributes to the emerging work array on green hotels by investigating the moderating character subjective norm plays in narrowing the gap between attitudes and intention. The relative lack of attention to this connection in green hotel literature calls for greater in-depth attention.

Our study discovered some indirect or mediation effects (Table 5). However, this section of the analysis was not our primary research focus, indicating some key findings which would contribute to the green hotel literature and practical implications. The study assessed the mediation effect of intention between PBC & Actual booking, SN & Actual booking, and attitude & Actual booking. The result validated the mediating role intention between PBC and actual behavior, consistent with the study of [31,158]. Consistent with [158,163], the study found a significant mediation role of intention between SN and actual booking or behavior. However, the study assessed that intention has no significant mediation role between the positive relation of attitude and actual booking, which contradicts the result of Khalid et al. [158] and Rehman et al. [163]. That means while considering antecedents of actual behavior and mediation analysis, intention plays a significant role in determining the final action. The study also found that SN mediates the link between moral obligation and intention, and SN & intention mediates the link between moral obligation and actual booking behavior, recommending careful consideration of SN in determining such links.

5.2. Justification of the results based on the case study characteristics

Justification of the study result is strongly proved by current literature, supporting hypotheses 1 to 13 by contributing articles in the green hotel literature [6,31,43,44,70,76,103]. Additionally, the study used tested scales, a questionnaire with local language translation for the correct response, tested unresponsive bias, and used scientifically accepted methods [135] and procedures (flowchart appendix B) to analyze data to test the hypotheses with careful consideration.

However, the current study sample comprises males 62.8% and females 37.2%, and most respondents (79.95%) are 20–29 years of age and have a bachelor's degree (68.12%). In Bangladesh, the percentage of males and females in 2021 was 49.6% and 50.4%,

respectively, according to the World Bank [164], which shows that the study did not accurately reflect the ratio. This may result in a sampling error and necessitates consideration of the repercussions. Data for a specific city or region (such as Noakhali) could not be compared since the respondents (students, family members, and their relatives) were from different regions of Bangladesh. Furthermore, there is a lack of accurate and recent (research period or later) demographic data for further comparison.

Moreover, data are collected from students of a particular university in Bangladesh during covid 19 pandemic period though they are from diverse areas. Therefore, the result might not be generalized for the whole population of the study. Additionally, the result only reflects a particular culture that should be tested in other geographic regions to compare the differences and similarities of visitors' intentions and behavior.

It is important to note that the research's findings can only speculate possible cause and effect or connections because of uncontrolled extraneous variables in this design. Consequently, strong inferences cannot be made to support the findings; a more rigorous experimental strategy is needed.

5.3. Theoretical implications

First, the current study enriches the literature on going green by investigating the primary factors and reasons why travelers pick eco-friendly hotels. Second, In the tourism and hospitality industries, the study addresses the need for a new model to better correctly predict customers' green behavior [43,44,119,162]. This work makes essential theoretical and empirical contributions by emphasizing the need to include relevant theories to infer green consumption intentions, the breadth and depth of the theories mentioned above, and the study's potential relevance to future research. This research used a combination of ethical theory and Theory of planned behavior to demonstrate that the proposed conceptual model can accurately anticipate participants' future green consumption intentions. This study serves as a starting point for subsequent research since, to the authors' knowledge, it is the first study to show how deontological and teleological processes combined with trust affect green hotel booking intention and behavior.

Third, the current study discovered that moral obligation (path value 0.345) is most influential in forming SN, leading to the subsequent intention and actual behavior. However, many articles that used TPB in the green hotel field [72,96,155] overlooked this deontological aspect. Therefore, it recommends including these variables to enhance the model's predictive capability in future research. Besides this, the research also indicated that the antecedents of intention to visit green hotels were heavily impacted by deontological (justice) and teleological (perceived risk and perceived benefit) factors. Because of this, these factors too should be accounted for in academic research on green consumption.

Fourth, trust and SN were shown to be a moderator that significantly increased the predictive ability of the research into visitors' intention to stay in eco-friendly hotels. The result shows that in line with Ariffin and Lim [160] but contradicted by Halimi et al. [119], trust has no moderation impact between attitude & intention and PBC & intention, expanding the opportunity for more research to generalize the result. SN moderates the attitude-intention link that supports the study of Sadiq et al. [162] but contradicts the result of [122], inciting different cultural perspective investigations. Fifth, the study also constructed and tested an integrative framework in a developing country like Bangladesh with curtailed greening rates, appending to the literature on green hotels [48,49].

5.4. Practical implications

In the competitive market, hotels are looking for advantages that would differentiate them from other competitive hotels. The 'Green' concept could be a driving factor to achieve that competitive edge and sustainable customer relationship. Our study analyzed the antecedents of intention and actual behavior or booking of the hotel guests that would help them formulate marketing strategies to overcome competitive rivalry and greater customer satisfaction. Thus, our findings recommend practical implications for the policymakers and marketing managers relevant to green hotels.

First, this current study found that customers' intentions to visit green hotels and their actual behavior are influenced by deontological processes – moral obligation and justice through SN. Hotel managers should clarify to their visitors and prospective guests that environmental distortion is justly and ethically wrong and immoral and that staying in a green hotel supports a green initiative that is beneficial and not detrimental to the environment. Managers could use the hotel website or social media page to convey the green process that the hotel is involved with, such as waste management, green procurement, recycling process, and how they help protect nature. Second, the findings show that teleological processes-perceived benefit and risk considerably impact green hotel attitudes. Managers can present relevant information to consumers that relate non-green hotels to adverse outcomes, particularly concerning pollution and resource waste. Hotel management might utilize professional and social networks to persuade visitors to stay in ecologically friendly lodgings, pointing out that doing so is a personal matter that affects everyone, or visitors could suggest eco-friendly residences to their family and friends. Any information that confirms the anticipated benefit while minimizing perceived risk will lead to a favorable attitude toward the green hotel. Third, the relationship between SN and PBC and the guests' intention was found to be highly significant, suggesting that guests may experience social pressure to stay in a green hotel and that accommodations should make it clear that their behavior is acceptable to a suitable group, such as family and friends. There is a direct correlation between the number of resources or opportunities available to people and the amount of control they feel they have over their actions. Managers should strive to eliminate perceived problems and impediments by providing excellent service, maintaining a friendly relationship with the guests, maintaining hygiene, supplying safe food, and ensuring security.

Fourth, managers should focus on specific indirect effects (Table 5), such as justice -> Subjective Norms -> Intention to Book Green Hotel -> Actual Booking and Moral Obligation -> Subjective Norms -> Intention to Book Green Hotel -> Actual Booking. Reflecting those connections in their promotional methods, such as advertising, would undoubtedly increase future visitors'

acceptance of green hotels. For instance, the manager could create a positioning message (in advertisements/slogans/leaflets) that addresses justice and SN to influence the visitor's intention positively.

Finally, the research uncovered that trust moderated the relationship between subjective norms and inclinations to visit green hotels. Managers should clarify that staying in green hotels is advantageous for societal and environmental sustainability as opposed to non-green hotels, where visitors would miss out on opportunities to give back to society because guests' trust depends on their perceptions. In addition, the manager should advise guests about the risks the green hotel always attempts to reduce. The study also discovered that subjective norms moderate attitudes and intentions to book a green hotel. The government and policy maker may help create and enhance the notion of green consumerism by encouraging hotels and tourism businesses to become more involved in environmental preservation. The government, for instance, can raise public awareness by incorporating environmental awareness-raising into the curricula of educational institutions.

5.5. Limitations and future research

Although our study sheds light on the key factors influencing visitors' decisions to stay in green hotels, the following limitations should be considered in future research. This study employed the theory of planned behavior and ethical theories to evaluate customers' intentions and behavior toward staying at green hotels. Future studies may need to examine additional factors that could affect green consumption behavior, such as social group motives [62], willingness to pay [64], pro-environmental behaviors [44], and value & environmental concern [46]. It is crucial to note that the psychological factors that underlie these green behaviors can significantly impact the hospitality industry's sustainability. Second, this study survey received most of its responses from students and their families affiliated with a specific university; this may lead to bias. Third, because this study does not consider the cultural difference and the cultural significance of Bangladeshi guests might influence the result, more research in other cultures could test the acceptability of the research. Fourth, this study was conducted in the hotel sector. Given this, the customer behavior of businesses like restaurants and the tourism industry and other industries like food, travel, and national parks, may eventually be studied using the model we have constructed. Fifth, further studies may choose for longitudinal analysis, as customers' impressions of the green hotel may change over time. Finally, demographic characteristics such as education, age, gender, and wealth may influence the expected correlations and should be investigated further.

6. Conclusion

Although there is much research on consumers' intentions to buy and repurchase green products based on their environmental consciousness, the decision-making process of staying in a green hotel has not been thoroughly covered empirically in the literature [99]. This study looked at how TPB, along with deontological and teleological processes, affect travelers' intentions and actual bookings of green hotel stays. Furthermore, the relationships between SN, Attitude, and PBC were examined using Trust and SN as moderators. Indirectly, intention and actual behavior were found to be most strongly influenced by moral obligation and justice. In contrast to attitude and PBC, SN was much more associated with intention prediction. As a result, the outcome adds to the theoretical literature on the green hotel.

Author contribution statement

Md Mahbubul Haq: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Masum Miah: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper. Subarna Biswas: Conceived and designed the experiments; Performed the experiments.

S. M. Mahbubur Rahman: Conceived and designed the experiments; Performed the experiments.

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Data availability statement

Data will be made available on request.

Additional information

Supplementary content related to this article has been published online at [URL].

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2023.e14720>.

Appendix A. Measures of the study

Construct/Indicators	Indicators Details
Actual Booking	
ACT1	I feel that I have played a great part in helping the environment when I stayed in green hotels
ACT2	I feel more comfortable when I visit green hotels rather than normal ones
ACT4	I aim to book green hotels again after my first booking
Intentions to book	
INT1	I expect to continue booking a green hotel in the future
INT2	I will make an effort to book a green hotel when traveling
INT3	I would prefer to book a green hotel in the future as compared to its competitors
INT4	My willingness to book a green hotel is high
Subjective norm	
SUB1	Most people who are important to me think I should book a green hotel while traveling
SUB2	Most people who are important to me would want me to book a green hotel while traveling
SUB3	People whose opinions I value would prefer that I a green hotel when traveling
Attitude	
ATT1	For me, booking a green hotel when traveling is (Extremely bad- Extremely good)
ATT2	For me, booking a green hotel when traveling is (Extremely Undesirable-Extremely desirable)
ATT3	For me, booking a green hotel when traveling is (Extremely unpleasant- Extremely pleasant)
ATT4	For me, booking a green hotel when traveling is (Extremely Unfavorable-Extremely favorable)
ATT5	For me, booking a green hotel when traveling is (Extremely foolish- Extremely wise)
Perceived Behavioral control	
PBC1	Whether or not I stay at a green hotel when traveling is completely up to me
PBC2	I am confident that if I want, I can stay at a green hotel when traveling
PBC3	I have resources, time, and opportunities to stay at a green hotel when traveling
Moral Obligation	
MRO1	I would feel guilty if I stayed in a hotel damaging the environment
MRO2	To stay in a hotel that damages the environment would be morally wrong for me
MRO3	Staying in a hotel that affects the environment would go against my principles
Justice	
JUS1	Staying in a hotel damaging the environment is unfair
JUS2	Staying in a hotel damaging the environment is unjust
Perceived benefits	
BEN1	If I stayed in a green hotel, I would save money
BEN2	If I stayed in a green hotel, I would save time
BEN3	If I stayed in a green hotel, I would improve my work performance
Perceived risk	
RSK1	There is a chance that there will be something wrong with environmental performance of this green hotel.
RSK2	There is a chance that this green hotel will not work properly with respect to its environmental design.
RSK3	There is a chance that you would get environmental penalty or loss if you use this green hotel
RSK4	There is a chance that using this green hotel will negatively affect the environment
Trust	
TRUST1	I feel that this hotel's environmental reputation is generally reliable
TRUST2	I feel that this hotel's environmental performance is generally dependable
TRUST3	I feel that this hotel's environmental claims are generally trustworthy
TRUST4	This hotel's environmental concern meets my expectation

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