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# Exploring the factors that influence customers' willingness to switch from traditional hotels to green hotels

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**ABSTRACT**

This research is designed to illustrate the process of customers' switching behavior from a traditional hotel to a green hotel by applying a pull-push-mooring theory and an exploratory mixed methods design. The push factors, including environmental policy, social media effects, and social norms, drive customers away from traditional hotels, while the pull factors, including personal norms, perceived health benefits, and emotional well-being, attract customers to green hotels. The mooring factors, including inertia and switching cost, show a vital moderating effect. This study provides a conceptual mechanism that clarifies factors that drive customers' green behavior in the hotel industry.

## Introduction

As environmental problems increase worldwide, consumers are committed to protecting and supporting the environment (Choi & Kim, 2021; I. Kim & Kim, 2021). According to Kristina and Rogers and Cosgrove (2021), over 40% of consumers worldwide are willing to buy items or services that benefit society even if they are more expensive, and more than 60% of them are ready to take action that benefits society. These thoughts and concerns are likely to lead consumers to demand products that meet environmental standards, even if they have to pay more (Casado-Díaz et al., 2020; Rex & Baumann, 2007). To attract green consumers in the hotel industry, developing green hotels have become an effective way to contribute to environmental improvements (Teng et al., 2012). Green hotels describe eco-friendly lodging firms that create a healthy infrastructure by using resources efficiently (Han, Yu, et al., 2018). Therefore, to pursue the environmentally sustainable development of the hospitality industry, such scientific research on consumer awareness and willingness seem necessary.

The essence of green hotels is to build an environmentally sustainable industry to meet customers' physical health and emotional well-being needs (Quan et al., 2022) while lessening environmental stressors. In particular, customers' perceptions of positive health are related to their motivation to engage in certain activities or behaviors (Dipeolu et al., 2021). Nimri et al. (2017) argue that a green hotel allows customers to stay in a healthy environment and use green products/spaces, which affects their emotional well-being and visiting intention. Considering the distinct aspects of green hotels that embrace those utilitarian needs, it is undeniable that customers' willingness to choose green hotels depends on their attractiveness, which offsets customers' sacrifice to give up hedonic values. In this regard, customers' inclination to shift to a green hotel becomes the backbone of the hotel industry's long-term development and success, which ultimately accelerates the eco-friendly development towards a low-carbon-footprint society.

At present, green hotels are an emerging trend in the Chinese hospitality industry that shapes traditional hotels into those that are environmentally by following the government's guidelines. The Chinese government has launched the Belt and Road Initiative International Green Development Coalition, an environmental policy that aims to restrain emissions and pledge carbon neutrality by 2060 (Maizland, 2021). Organizations and leading industries have started implementing the government's environmental policy guidelines, including energy and water conservation, fuel consumption restrictions, pollution control, and green/sustainable development (Ministry of Ecology and Environment, 2021). The hotel industry can be counted among them, having started to introduce eco-friendly products and make eco-friendly contributions. The success of these efforts will largely depend on customers' willingness to switch the transition from traditional to green hotels.

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Consumers' willingness to switch from traditional hotels to green hotels plays an essential role in accelerating the transition to an environmentally sustainable hotel industry. In that sense, the PPM theory has been utilized as an adequate theoretical framework for predicting individual switching behavior (Hsieh et al., 2012; Lin et al., 2021). The PPM theory is intended initially to explain why people migrate from one place to another (Bansal et al., 2005) to identify push, pull, and mooring factors that shift individuals' decisions (Hazen et al., 2017). A push factor encourages customers to abandon their current choice of item or service, while a pull factor encourages customers to embrace a new item or service. In addition, mooring factors interact with pull factors and push factors, and describe negative factors that hinder a customer's willingness to migrate to a new item or service (Hsieh et al., 2012; Hsu, 2014). Researchers have started to introduce the PPM theory in a sustainability context to explore customers' green attitudes and behaviors (Sajjad et al., 2020; Wang et al., 2020).

Although customer willingness is important, previous empirical research on green hotels has primarily focused on positive behavioral intentions in guest decision-making practices (Chen & Tung, 2014; Fauzi et al., 2022; Hsiao et al., 2014; Wang et al., 2018). Understanding the constraints can help identify the specific motivational triggers and barriers that hinder when choosing green hotels over traditional hotels. In this regard, the purpose of this study is to investigate the factors that affect consumers' willingness to green hotels. Specifically, we evaluated the psychometric characteristics of these factors and developed a theoretical framework to verify the relationship between variables. This study provides a solid theoretical foundation and practical insights into the motivations and constraints surrounding the consumer decision-making process and provides recommendations for future research for sustainability in the hospitality industry.

## Literature review

### The green hotel

Green hotels (eco-friendly hotels) adhere to the principles of resource conservation, environmental protection, safety, and health during construction and operation (Chua & Han, 2022; Filimonau et al., 2022; Jiang & Gao, 2019; Trang et al., 2019). Recently, China classified green hotels into five grades from single A to quintuple A to evaluate their environmental performance. In accordance with the government's initiatives, many hotels have started to construct green hotels and implement green

practices (Kuo et al., 2022). However, although hotels in China are striving to fulfill their environmental responsibilities, it is difficult for them to promote their efforts and attract customers, as many have yet to understand the benefits of green hotels, and many are unaware of the risks involved with the traditional practices of the hotel industry (Jiang & Gao, 2019). This study defines green hotel as those where environmental initiatives are implemented: energy and water saving, selling green products, maintaining recycling programs, and offering green food provisions and eco-friendly materials/infrastructures.

### The pull-push-mooring (PPM) theory

The PPM theory originates from the pull-push (PP) theory, which aims to identify attributes that potential migrants compare and choose when moving to new locations (Bansal et al., 2005; Lewis, 1982). In the PP theory, a push factor engenders negative effects that compel individuals to stay away from an original place due to uncontrollable situations, such as natural disasters and lack or loss of jobs. Conversely, a pull factor creates positive effects that attract potential migrants to particular locations due to compelling situations, such as better job opportunities and positive environments (Bogue Donald, 1969). Additionally, the mooring factor is added to the theory as a possible moderator of migration decisions, such as transition costs and personal preferences (Hsieh et al., 2012; Longino, 1992). The pull-push-mooring theory has been expanded to include the consumer behavior discipline to describe customers' switching behavior (Bansal et al., 2005). In particular, the pull-push-mooring theory has been used actively in many industries, such as airline industry, online service industry, mobile applications, online games, employee turnover, and green transportation (Amigo & Gagnaire, 2015; Chang et al., 2017; Haldorai et al., 2019; Jung et al., 2017; Sun & Wang, 2019; Wang et al., 2020). The PPM theory has no fixed predictors that shape each factor; some scholars view the push factor with such predictors as dissatisfaction, low enjoyment, weak connections, and inconvenience, and the pull factors with such predictors as attractiveness, advantages, ease of use, and enjoyment. Other scholars also classify the pull-push factor as an external factor (e.g. perceived environment threat) or an internal factor (e.g. subjective norm).

### Willingness to shift

Willingness and intention are different. Intention describes how much effort is given to planning to carry out a behavior. In contrast, willingness explains customers' openness to opportunities and their inclination to perform a particular behavior in situations that drive

behavior (Pomery et al., 2009). Intention and willingness both predict actual behavior, but willingness contains less planning or pre-planning than intention (Jun & Arendt, 2016), allowing us to look into a person's true inner feelings. Willingness has been investigated in different fields, as it has a significant influence on actual behavior (Hukkelberg & Dykstra, 2009). Therefore, the willingness to shift affects actual behavior, and this study investigates what pushes and pulls affect a consumer's willingness to switch from traditional hotels to green hotels.

## Push factors

*Environmental policy* is a primary method of managing the connection between people and the natural environment and aims to address existing environmental problems (Eccleston & March, 2011). Many countries have announced carbon-neutral initiatives due to the severity of climate change; the EU by 2050, Japan by 2050, Korea by 2050, and China by 2060. In particular, China's goal of achieving carbon neutrality by 2060 covers the expansion of electric hydrogen, green remodeling, development of future decarbonization technology, maximization of recycling and reuse, and reinforcement of carbon absorption in a forest clearing (Ministry of Ecology and Environment, 2021). Psychologically, customers would be reluctant to visit traditional hotels due to their environmental policies; this might push them to use green hotels regardless of their preferences. In other words, environmental policies are predicted to become the driving force leading to the avoidance of traditional hotels.

*Perceived environmental threats* are the degree to which individuals perceive a problem to harm the environment (S. S. Kim et al., 2003; O'Connor et al., 1999). The protective motivation theory explains that individuals initiate a protective response when an environmental threat is detected (Davis, 2012; Horng et al., 2014; Wang et al., 2020). Applying PPM theory to the study of the green hotel industry, it is evident that customers are more likely to switch to green hotels when they perceive the environmental threats posed by traditional hotel operations. Since the perceived threat of environmental issue is related to an individual's willingness to shift to eco-friendly products, many previous studies investigated the causal relationship between perceived environmental threats and behavior (Davis, 2012; S. H. Kim et al., 2013; Wang et al., 2020).

*Social media* is an information-sharing space, such as Instagram, Twitter, and Weibo (Chinese platform), and engaging in social media has become a daily routine for individuals to communicate and share thoughts, feelings, products, and behaviors. Previous research has presented that social media plays a vital role in forming customer attitudes and purchase behavior toward green products (Hudson et al., 2016; Lv et al., 2022; Sun & Wang, 2019). In the hospitality and tourism industry, social media is the most used source of providing/sharing information (Simms, 2012). Moreover, social media influences travel behavior and impacts tourists' purchasing decisions during the pre-purchase phase in China (Liu et al., 2020; Pop et al., 2020; Song & Yoo, 2016). The Chinese government pushes the execution of environmental practices, and people post various promotions on social media. Therefore, the factor of social media is expected to add pressure and has an impact on customers' decisions that pushes them to stop visiting traditional hotels and switch to green hotels.

The *social norm* is widely studied in sociology; the social norm is an explicit or implicit rule that guides, regulates, prohibits, and prescribes social behavior in certain circumstances (D'Arco et al., 2023; Hechter & Opp, 2001). Willingness to associate with others and to seek social acceptance and respect are the main reasons social norms affect customers' behavior (Li et al., 2019). In other words, perceived pressures from social norms lead to behavior in an altruistic way (Schwartz, 1977). Many studies have proven that social norm affects behavior intention (Han, Yu, et al., 2018; Huber et al., 2018). In a sustainability context, Han's (2015) research on green lodging explains that the social norm is essential to understand an individual's eco-friendly decision-making and behavior; the social norm allows us to understand why individuals refrain from visiting traditional hotels in order to meet the environmental responsibility that others expect. Thus, the following hypotheses are established:

**H1:** Environmental policies are associated with customers' willingness to shift to a green hotel.

**H2:** Perceived environmental threats are associated with customers' willingness to shift to a green hotel.

**H3:** Social media effects is associated with customers' willingness to shift to a green hotel.

**H4:** Social norms is associated with customers' willingness to shift to a green hotel.

## Pull factors

*Attractiveness* has become an important draw in the tourism industry. Many studies reveal that attractiveness affects switching intentions in the push-pull-mooring theory (Jung et al., 2017; Wu et al., 2015). According to this theory, the attractive attributes of a product pull people to use the product (Ji & Yang, 2022). For example, Zengyan et al. (2009) proved that individuals are more likely to be attracted to a transition to alternative items or environment if they recognize the attributes of an alternative service to be more attractive than the existing one. In green hotels, eco-friendly products are an attractive alternative to the standard products offered by traditional hotels. As climate change becomes more severe, it can be assumed that such attributes as services, green products, non-toxic housekeeping practices, energy-efficient programs, and the provision of organic/locally grown ingredients can attract consumers to green hotels.

*Personal norms* are defined by Schwartz (1977) as a moral obligation to do or avoid certain actions. Personal norms are widely used in environmental literature. Van der Werff et al. (2013) illustrated that individuals with strong personal norms regarding the environment felt a moral obligation to act accordingly. Schwartz (1997) and Ritchie et al. (2022) pointed out that personal norms are activated when an individual recognizes a problem caused by his or her behavior and feels responsible and able to deal with it by taking action. Doran and Larsen (2016) and Ateş (2020) also demonstrated that personal norm affects behavior intention when a person has a sense of moral duty. Moreover, if customers have more trust in a new provider, they will switch behavior even if the new service provider offers a higher price or perceives that the distance to the service is inconvenient (Keaveney, 1995). Therefore, consumers are likely to switch to green hotels as soon as they realize that green hotels practice eco-friendly management and are beneficial to the environment.

The *perceived health benefits* of green spaces and products have been demonstrated to have a positive relationship with physical and mental health. In restaurant studies, many scholars have researched the factor of perceived healthiness related to green food (e.g. Bech-Larsen & Grunert, 2003; Provencher et al., 2009). In addition, Richardson and Mitchell (2010) proved that green spaces reduce some diseases common to modern society. Furthermore, according to Ares and Gámbaro (2007), consumers tend to eat foods that are perceived as healthier, which greatly influences their willingness to try and their purchase behaviors. Moreover, nature-based solutions (green environments) beneficially affect awareness of mental health and affect satisfaction and revisit intention (Han et al., 2020). Therefore, potential green hotel users who are provided with green products and services might perceive possible health benefits and be more willing to shift.

*Emotional well-being* is defined as an individual's perception of the extent to which a specific service promotes a standard of living in emotional terms during consumption (Han, Moon, et al., 2019; Singh et al., 2023). Diener (2009) represents that an individual's judgments about the health of their body and mind are indicative of their perception of well-being. Emotional well-being is a subjective perception and is receiving increasing attention in the hotel and tourism industry. For example, Lin and Chang (2020) focused on the atmosphere of hotel restaurants and described well-being as a subjective component of a customer's satisfaction with the experience. According to H. Kim et al. (2015), emotional well-being increases the revisiting rate in nature-based tourism, and it also has positive effects on satisfaction, word of mouth, and revisit intention in airline lounge research. The hypotheses are as follows:

**H5:** Attractiveness of green hotels is associated with customers' willingness to shift to a green hotel.

**H6:** Personal norms is associated with customers' willingness to shift to a green hotel.

**H7:** Perceived health benefits is associated with customers' willingness to shift to a green hotel.

**H8:** Emotional well-being is associated with customers' willingness to shift to a green hotel.

## Mooring factors

Mooring factors are personal factor that facilitates or interrupt a consumer's shift from one service to another (Chang et al., 2017). In the current study, a mooring factor refers to negative factors that impede the movement from traditional hotels to green hotels. The migration theory indicates that a mooring factor plays an important moderating role between push-pull variables and individuals' decisions (Lee, 1966). In this study's context, individuals' switching intentions to green hotels depend on the level of the mooring factors, moderating the relationships between pull-push variables and customers' willingness to switch to green hotels. Many studies have suggested that inertia and switching costs

may act as a psychological barrier to change (Jung et al., 2017; Wang et al., 2020). Therefore, the current study expects mooring factors to be a variable with an important moderating effect on the causal association between the push-pull variables and the willingness to shift factor.

*Inertia* is an unconscious process in which habits and attachments cause a user to repeat the same behavior, and they can also be defined as resistance or a very slow tendency to change norms and habits (Gao et al., 2020; Xiao & Yue, 2018). Inertia in this study is described as customers perceiving that traditional hotels are not the most efficient or environmentally friendly but are accustomed to and want to repeat visiting traditional hotels. High levels of inertia may stem from habits, psychological attachments, or fear of the unknown (Luchs et al., 2010). Moreover, eco-friendly hotels are still not known to many people compared to traditional hotels, which could impede customers' willingness to shift to the former. In PPM theory research, inertia is one of the most used as a mooring factor because it plays a moderating role between the push-pull factor and the behavior (Wang et al., 2020; Zeng et al., 2021). Inertia moderates the relationship between push-pull factors and willingness to adopt green behavior. Individuals with higher levels of inertia require more substantial external interventions to overcome their resistance to change and embrace green behavior, while those with lower inertia may be more open to shifting their behavior (Nagengast et al., 2014).

*Switching costs* is one of the representative mooring factors in migration theory as the perception of the cost of changing service providers can affect consumer choice (Jung et al., 2017; Zeng et al., 2021). Switching costs are divided into monetary and non-monetary aspects (Bansal et al., 2005; Lehto et al., 2015); non-monetary expenses primarily include psychological and time cost representing perceived risk (Jung et al., 2017). Thus, high switching costs as a mooring factor are closely related to shifting intention, purchase intention, customer loyalty, and customer behavioral intention (Han et al., 2009). Many studies have been done to investigate the role of switching costs as a moderating role in the relationship between independent factors and behavior (Chang et al., 2017). In Wang (2010)'s study, switching costs had a significant moderating effect on the relationship between service quality and firm loyalty. Customer is more likely to switch to a new items provider when they feel that the novel item is more effective and the time and effort to make the switch are reasonable. Higher perceived switching costs may discourage individuals from adopting green behavior, as they weigh the costs of change against the

perceived benefits. Conversely, lower switching costs may encourage individuals to overcome their habits and embrace behavior (Jones et al., 2007). In the PPM theory, it is worth studying the impact of the switching costs factors from traditional hotels to green hotels. Therefore, the following hypotheses are developed:

**H9:** Inertia is associated with customers' willingness to shift to a green hotel.

**H10:** Switching costs is associated with customers' willingness to shift to green hotels.

**H11a-h:** Inertia variables play a major moderating role in the association between push-pull factors and willingness to shift to a green hotel.

**H12a-h:** Switching costs play a major moderating role in the association between push-pull factors and willingness to shift to a green hotel.

## Methods

### Data collection (qualitative approach)

Due to a gap in the theoretical literature, this study used a qualitative method to find the push-pull-mooring factors influencing willingness to shift to green hotels. Prior studies have been reviewed to understand and extract potential growth aspects of the hotel industry (Chua & Han, 2022; Constantatos et al., 2021; Han, Yu, et al., 2018; Liu et al., 2020; Richardson & Mitchell, 2010; Shin & Kang, 2021; Wang et al., 2018). Then, from September 7 to 21, 2021, we conducted in-depth online interviews (ZOOM platform) with 13 experienced Chinese green hotel guests to identify attributes that explain the push, pull, and mooring factors. Considering that there are many people who have not experienced green hotels, this study selected interviewees with a green hotel experience to obtain more reliable factors. Artifacts related to the study topic as magazines, pictures, and articles were provided to participants before the interview to make sure they were fully versed in the study context. Participants shared their thoughts on green hotels to determine predictors shaping each PPM factor (see Appendix A). The interviewees were recruited from diverse backgrounds, including undergraduate students majoring in tourism management, hotel employees, travel agencies, hotel guests, and government officials (see Table 1). Each interview took approximately 15 minutes, and we ended the data collection from the interview

Table 1. Characteristics of interview participants (*n* = 13).

| Participants | Gender | Age group | Occupation |
|---|---|---|---|
| Participant 1 | Female | 18–29 | Master Student in Tourism Management |
| Participant 2 | Male | 30–39 | Ph.D. Student in Tourism Management |
| Participant 3 | Female | 18–29 | Ph.D. Student in Hospitality and Tourism Management |
| Participant 4 | Male | 18–29 | Travel Agency worker in Beijing, China |
| Participant 5 | Male | 18–29 | Hotel Worker in Qingdao, China |
| Participant 6 | Male | 30–39 | Assistant Professor in the Department of Media |
| Participant 7 | Male | 40–49 | Government Official Worker in Jilin, China |
| Participant 8 | Female | 30–39 | Government Official Worker in Chongqing, China |
| Participant 9 | Female | 40–49 | Government Official Worker in Dalian, China |
| Participant 10 | Female | 30–39 | Hotel Worker in Changchun, China |
| Participant 11 | Male | 40–49 | Government Official Worker in Jilin, China |
| Participant 12 | Female | 30–39 | Travel Agency Worker in Beijing, China |
| Participant 13 | Female | 30–39 | Hotel Manager in Shanghai, China |

process with thirteen participants when the theoretical saturation was reached (Patton, 2015). Lastly, we aligned the themes/attributes with the previous literature to achieve the trustworthiness of the qualitative study part (Patton, 2002).

## Data collection (quantitative approach)

To collect data this study used convenience sampling techniques from visitors who have been to green hotels in China. Data was collected through Wenjuanxing, a trusted Chinese online survey platform (Chi et al., 2022; Chiu et al., 2023), for about four weeks from November 1 to 28, 2021. In order to find out the various demographic characteristics of Chinese consumers, questionnaires were distributed to participants aged 18 or older who had experience in green hotels in various occupational groups, educational backgrounds, and income levels. In order to distinguish between those who had a green hotel experience and those who did not, and to secure the representativeness of the sample unit, screening questions were asked about whether they had recently stayed at a green hotel. The questionnaire consisted of a detailed introduction to and definition of the green hotel, because of the low level of awareness of such hotels, and a brief introduction of the respondents. Moreover, the names of currently approved green hotels were listed as examples to help respondents better understand the industry. Lastly, the main variables were measured using a 7-point Likert scale (strongly disagree-1 to strongly agree-7) corresponding to the proposed model, except for the demographic information.

After the removal of incomplete data, 580 respondents were included in the analyses. The current study used a single-factor test to address common method variance (CMV), proposed by Harman (1960). As a result, the variance explained by a single factor was 40.616% (>50%), confirming that there was no single dominant factor. Therefore, the CMV issue does not present in the current study. The demographic information indicates that there were more male respondents (54.7%) than female (45.3%). Approximately 33.3% of respondents were 35–44 years old and 28.8% were 25–34 years old. In terms of education level, 61% had a bachelor's degree, followed by a master's degree or higher (34.5%), and a high school degree or lower (4.5%). In addition, 42.9% of participants said their monthly income was about 5,001–10,000 RMB, and 33.3% of respondents reported that they received about 10,001–20,000 RMB. Lastly, over 50% of the participants answered that they were married (56.9%).

## Results

### Results of the qualitative approach

A deductive coding method was used to identify the attributes shaping each factor and therefore establish an initial pool of measurement items. Deductive coding is a top-down approach where the researcher develops a codebook and assigns the data based on an existing theory (Linneberg & Korsgaard, 2019). As Table 2 indicates, the researcher made a list of attributes and grouped them into each category; push, pull, and mooring factors. Pull factors cover four themes: environmental policy, perceived environmental threats, social media effects, and social norms, all of which compel consumers to switch to green hotels due to external factors. Push factors cover four themes: attractiveness, perceived norm, perceived benefits, and emotional well-being. These themes allow us to understand why customers are attracted by green hotels. In particular, the physical environment and services provided by green hotels make customers aware of their health benefits and emotional well-being. Lastly, Mooring factors cover two themes: inertia and switching costs. These themes

**Table 2.** Table of themes derived from interviews with participants.

| Category | Themes | Attributes | Sample quotes |
|---|---|---|---|
| Push factors | Environmental policy | • The government's low-carbon implementation<br>• The government's traditional energy restrictions<br>• The government's pursuit of sustainable development | "[…] Recently, the government is also actively investing in green industries and expanding sustainable development policies, so I am considering using services that are not harmful to the environment when using services as well as hotels." (Participant 1, Female) |
| | Perceived environmental threats | • Plastic wastes in hotels<br>• Excessive energy use in hotels<br>• Overuse of natural resources in hotels | "[…] The social atmosphere pushes me to select green hotels. The government broadens the scope of investment in eco-friendly development, and on social media, for example, compares how electric vehicles benefit the environment and how gasoline adversely affects the environment, showing examples of helpful green development. These factors make me choose eco-friendly products and services. Eco-friendly hotel choices are no exception" (Participant 9) |
| | Social media effects | • Low-carbon energy attention in the social media<br>• Environmental protection content in social media<br>• Media coverage on climate change | "[…] To achieve our carbon neutral goal, we know we have to work together. As a member of society, I am moving towards reducing my carbon footprint when choosing a hotel." (Participant 11) |
| | Social norm | • Social pressure for travel with environmentally responsible hotel<br>• Social anxiety about practicing waste reduction | |
| Pull factors | Attractiveness | • Attractiveness in using renewable energy<br>• Attractiveness in eco-friendly materials<br>• Attractiveness in environmentally friendly ingredients | "[…] when I spend time at green hotels, I will feel comfortable and healthy in the atmosphere inside the Green Hotel. Especially when traveling with children, I try to pick these sustainable hotels. The supply of organic food and safe products is the main reason." (Participant 12) |
| | Perceived norm | • A personal obligation in choosing green hotels<br>• Personal beliefs/values practicing sustainability | "[…] In addition, I think that the green hotel is beneficial to health during my stay because it uses resources rationally while protecting the ecological environment in production and operation. In particular, I think this green space is safe during the COVID-19 period." (Participant 5) |
| | Perceived health benefits | • Physical health benefits<br>• Psychological health benefits<br>• Environmental health benefits | "[…] The sustainable hotel architecture using eco-friendly materials is attractive, and the body and mind feel comfortable and healed." (Participant 4) |
| | Emotional well-being | • Feeling a sense of happiness<br>• Feeling a sense of emotional well-being<br>• Feeling a sense of peace | |
| Mooring factors | Inertia | • Old habits/stigma<br>• Personal tendency | "[…] I usually stay at a green hotel, but there are franchise hotels I often stay at when I go on business trips, and I go there habitually. It's because I have a membership at the hotel, so there's a discount." (Participant 10) |
| | Switching cost | • Switching costs in time<br>• Switching costs in an effort<br>• Switching costs in money | "[…] but sometimes, if it takes tons of time and energy to find a green hotel in an unfamiliar place, I will stay at a traditional hotel." (Participant 13) |

encourage or hinder a switch to green hotels. In particular, individuals' inertia and switching costs may hinder their switch to green hotels.

Based on previous literature reviews and in-depth interviews, 44 items were extracted. For push factors, four items of environmental policy (Fu et al., 2020; Wan et al., 2014), four items of perceived environmental threats (Wang et al., 2020), four variables of social media (Pop et al., 2020), and four variables of social norms (Han, Yu, et al., 2018) were extracted. In addition, five items of attractiveness (Jung et al., 2017), five items of personal norms (Han, Moon, et al., 2019), five items of perceived health benefits (Dorce et al., 2021), and five items of emotional well-being (Han, Moon, et al., 2019) were extracted to measure push factors. Furthermore, four items of inertia (Jung et al., 2017) and four items of switching costs (Jung et al., 2017; Wang et al., 2020) were

extracted to measure mooring factors. Lastly, five items for the willingness to shift were adopted from Bamberg (2007) and Nordlund and Garvill (2003).

Five hotel industry experts reviewed the survey items to ensure that they adequately represent the construct being measured, and evaluated items for relevance, clarity, and comprehensiveness to ensure they match the intended construct. In addition, the first survey was conducted with 12 people to evaluate the clarity and comprehension of the questions, and problems were improved by identifying ambiguity or problems in the phrases of the questions through feedback. To evaluate construct validity, the following exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted. This analysis determined that the investigation items captured the intended configuration and that the items were reliable and distinct from each other.

## Results of the quantitative approach

### Exploratory factor analysis

Exploratory factor analysis was performed utilizing SPSS 25.0. A varimax rotation was performed to explore the dimensions of the perception of green hotel use in China. The suitability of EFA was confirmed by the Kaiser-Meyer-Olkin (KMO) value of .951 ($p < 0.001$). It can also be seen from Table 3 that the 10 identified constructs with eigenvalues greater than 1 account for approximately 86.011% of the total variance. Cronbach's alpha was in the range of 0.932 to 0.963, all of which were greater than the standard 0.70. This indicates that all 10 identified constructs are adequate. In addition, Cronbach's alpha value of the five items of willingness to shift was 0.955, the eigenvalue was 4.248, and the explanatory variance was 84.964%.

### Assessment of measurement model

Confirmatory factor analysis (CFA) was applied to confirm the identified factor structures. CFA results $\chi^2$ (1068) = 2266.386, $\chi^2/df = 2.122$, $p < .001$, RMSEA = .044, CFI = .963, IFI = .964, TLI = .960, and NFI = .933, indicating a satisfactory fit for the overall fitness index. The standardized factors for each item ranged from .852 to .943, so the 0.5 thresholds was exceeded. The all-Average Variance Extraction (AVE) value was 0.7 or higher and the construct reliability value was 0.9 or higher, supporting convergent validity. In addition, as shown in Table 4, the square root of the AVE value for each construct was higher than the correlation coefficient for the cross-construct, confirming discriminant validity.

### Structural model evaluation and hypothesis testing

Structural equation modeling (SEM) was performed to verify the theoretical framework proposed in this study; the result shows that the proposed structural model included an adequate level of goodness-of-fit statistics ($\chi^2$ (1072) = 2331.277, $\chi^2/df = 2.175$, $p < 0.001$, CFI = .962, IFI = .962, RMSEA = .045, TLI = .958, and NFI = .931). This is also a satisfactory level for switching intention, as it explains approximately 54.8% of the overall variance for willingness to shift to green hotels. The results explained that push factors have a positive effect on willingness to shift to green hotels (H1: $\beta = .090$, $p < 0.05$; H3: $\beta = .101$, $p < 0.05$; H4: $\beta = .104$, $p < 0.05$) except for the perceived environmental threats (H2: $\beta = .032$, $p > 0.05$). The pull factors positively affect willingness to shift to green hotels (H6: $\beta = .104$, $p < 0.05$; H7: $\beta = .103$, $p < 0.05$; H8: $\beta = .103$, $p < 0.05$) except for the attractiveness (H5: $\beta = .182$, $p > 0.05$). The mooring factors negatively affect willingness to shift to green hotels (H9: $\beta = -.321$, $p < 0.001$; H10: $\beta = -.204$, $p < 0.001$) (see Table 5).

### Assessment of mooring factor as a moderator

Based on the two-step cluster analysis the mooring factors (i.e. inertia and switching costs) were divided into low and high groups to conduct a structural invariance. The metric measurement invariance was achieved ($\Delta\chi^2$ (32) = 34.985, $p > 0.05$), and the baseline model contained an adequate fit to the data ($\chi^2$ (1486) = 2848.940, $\chi^2/df = 1.917$, $p < 0.001$, CFI = .948, RMSEA = .040, IFI = .949, TLI = .943, and NFI = .898). We then compared this model to the nested model to evaluate the moderating role of the hypothesized inertia. The findings of this study indicate a path from environmental policy to willingness to shift to green hotels ($\Delta\chi^2$ (1) = 5.653, $p < 0.05$) and from perceived health benefits to the willingness to shift to a green hotel ($\Delta\chi^2$ (1) = 4.896, $p < 0.05$) were the distinct difference between the high and low inertia groups, thus supporting H11a and H11g (see Table 6).

Equally, comparisons were made with nested models to assess the hypothesis about the moderating role of switching costs. The metric measurement invariance was achieved ($\Delta\chi^2$ (32) = 28.274, $p > 0.05$). The baseline model contained an adequate fit to the data ($\chi^2$ (1486) = 2866.445, $\chi^2/df = 1.929$, $p < 0.001$, CFI = .948, RMSEA = .040, IFI = .948, TLI = .942, and NFI = .898). The findings showed that a route from the social norm to the willingness to shift to a green hotel ($\Delta\chi^2$ (1) = 4.824, $p < 0.05$) and from perceived health benefits to the willingness to shift to a green hotel ($\Delta\chi^2$ (1) = 8.889, $p < 0.05$) was a distinct difference between the high and low switching-costs groups, thus supporting H12d and H12g. In summary, these results provided empirical evidence that the mooring factors moderated the association between the pull-push factors and willingness to shift to green hotels (see Table 7 and Figure 1).

## Discussions

### Theoretical implications

The current study introduces the PPM theory to understand customers' willingness to shift to green hotels to emphasize the importance of pull-push-mooring factors. This study refines the theoretical framework encompassing the mechanisms responsible for the association between pull-push-mooring variables, and consumers' willingness to switch to green from traditional hotels. In this regard, several theoretical insights have been derived from the study results. First, a customer's willingness to switch is significantly influenced by three push factors (social media effects, environmental policy, and social norms); environmental policies initiated by

**Table 3.** Results of exploratory factor analysis.

| Construct | Communality | Factor loading | Mean |
|---|---|---|---|
| **Push factor 1: Environmental Policy (Cronbach's α = .940; Eigenvalue: 1.590; Variance explained:8.008%)** | | | |
| 1.The country's low-carbon implementation makes you choose a green hotel. | 0.868 | 0.860 | 5.32 |
| 2.The country's eco-friendly practices stimulate the use of green hotels. | 0.853 | 0.828 | 5.27 |
| 3.The country's implementation of energy saving, fuel consumption restriction, pollution prevention, and greenhouse gas reduction helps me pursue green hotels when traveling. | 0.831 | 0.812 | 5.21 |
| 4.The country's pursuit of sustainable development leads to staying in a green hotel when traveling. | 0.846 | 0.841 | 5.31 |
| **Push factor 2: Perceived Environmental Threats (Cronbach's α = .948; Eigenvalue: 1.760; Variance explained:8.138%)** | | | |
| 1.In general hotels, a lot of plastic waste is discharged. | 0.870 | 0.839 | 4.99 |
| 2.General hotels have a serious negative impact on ecology. | 0.869 | 0.838 | 4.93 |
| 3.Excessive energy use and waste discharge in general hotels pollute the air. | 0.867 | 0.828 | 4.82 |
| 4.Conventional hotels overuse natural resources. | 0.860 | 0.823 | 4.82 |
| **Push factor 3: Social Media Effects (Cronbach's α = .944; Eigenvalue: 1.539; Variance explained:7.895%)** | | | |
| 1.Low-carbon energy targeting in the media draws more attention to green hotel use. | 0.872 | 0.828 | 5.18 |
| 2.Environmental protection contents stimulate the use of green hotels when I choose a hotel. | 0.863 | 0.829 | 5.11 |
| 3.Negative media coverage about waste and single-use plastic waste in general hotels makes me choose green hotels. | 0.843 | 0.799 | 5.01 |
| 4.The media coverage on climate change drives me to choose low-emission hotels such as green hotels. | 0.856 | 0.812 | 5.10 |
| **Push factor 4: Social Norm (Cronbach's α = .932; Eigenvalue: 1.321; Variance explained:7.058%)** | | | |
| 1.Most people who are important to me think I should travel with an environmentally responsible hotel instead of a regular hotel. | 0.834 | 0.767 | 5.31 |
| 2.Most people who are important to me would want me to stay with an environmentally responsible hotel instead of a regular hotel. | 0.810 | 0.761 | 5.08 |
| 3.People whose opinions I value would prefer me to stay in an environmentally responsible hotel instead of a conventional hotel. | 0.831 | 0.744 | 5.17 |
| 4.Most visitors practice waste reduction and recycling activities while staying in a hotel. | 0.857 | 0.769 | 5.15 |
| **Pull factor 1: Attractiveness (Cronbach's α = .953; Eigenvalue: 2.093; Variance explained:8.977%)** | | | |
| 1.I believe that green hotels provide much better customer service than conventional hotels. | 0.864 | 0.779 | 5.32 |
| 2.The use of renewable energy and eco-friendly energy are attractive | 0.828 | 0.739 | 5.09 |
| 3.The use of recycling programs, water saving programs and energy-efficient light fixtures are attractive. | 0.843 | 0.775 | 5.23 |
| 4.The interior and exterior of green hotels, built with eco-friendly materials, are attractive. | 0.835 | 0.734 | 5.08 |
| 5.The organic food, beverage and local planted ingredients use are attractive. | 0.850 | 0.778 | 5.29 |
| **Pull factor 2: Personal Norm (Cronbach's α = .950; Eigenvalue: 2.401; Variance explained:9.500%)** | | | |
| 1.I feel an obligation to choose a sustainable hotel instead of a regular hotel when booking. | 0.834 | 0.798 | 5.31 |
| 2.Regardless what other people do, because of my own values/principles I feel that I should behave in an environmentally friendly way while staying in a hotel. | 0.819 | 0.804 | 5.04 |
| 3.I feel it is important that hotel visitors should in general make an eco-friendly decision when selecting a hotel. | 0.845 | 0.774 | 5.18 |
| 4.I feel that it is important to make hotels environmentally sustainable, reducing the harm to the wider environment. | 0.830 | 0.779 | 5.11 |
| 5.I believe it is important to practice waste reduction and recycling activities when staying in a hotel. | 0.859 | 0.795 | 5.17 |
| **Pull factor 3: Perceived Health Benefits (Cronbach's α = .957; Eigenvalue: 17.871; Variance explained:10.218%)** | | | |
| 1.I feel that the facilities at green hotels are safe to use. | 0.871 | 0.860 | 5.12 |
| 2.The environmentally friendly interior and exterior decoration of green hotels make me feel that I am in a good physical condition. | 0.832 | 0.818 | 4.85 |
| 3.The organic food provided by green hotels refreshed my body and mind. | 0.859 | 0.829 | 4.96 |
| 4.The environmentally friendly products provided by green hotels are helpful to my health. | 0.855 | 0.835 | 4.89 |
| 5.The green environment service provided by green hotels makes my body feel lighter. | 0.861 | 0.834 | 5.02 |
| **Pull factor 4: Emotional Well-being (Cronbach's α = .959; Eigenvalue: 5.391; Variance explained:9.699%)** | | | |
| 1.I feel healthy and happy when staying at a green hotel. | 0.855 | 0.791 | 5.27 |
| 2.I feel emotional well-being while staying at a green hotel. | 0.843 | 0.805 | 5.00 |
| 3.Green hotels play an important role in making me feel relaxed. | 0.885 | 0.823 | 5.15 |
| 4.Thinking about the green hotels makes me feel calm and peaceful. | 0.869 | 0.793 | 5.07 |
| 5.The green hotel plays an important role in making me feel healing. | 0.858 | 0.789 | 5.15 |
| **Mooring factor 1: Inertia (Cronbach's α = .963; Eigenvalue: 2.018; Variance explained:8.245%)** | | | |
| 1.Unless I am very dissatisfied staying regular hotels shifting to green hotels would be a bother. | 0.908 | 0.911 | 3.38 |
| 2.It has become very natural for me to visit traditional hotels. | 0.889 | 0.896 | 3.28 |
| 3.I would rather stick to a familiar lodging than try something I am not sure about. | 0.897 | 0.907 | 3.32 |
| 4.When I travel, staying at a traditional hotel is an obvious choice for me. | 0.914 | 0.917 | 3.24 |
| **Mooring factor 2: Switching Cost (Cronbach's α = .961; Eigenvalue: 1.837; Variance explained:8.218%)** | | | |
| 1.In general, switching to green hotels would require a lot of time and effort to search. | 0.893 | 0.903 | 3.29 |
| 2.In general, switching to green hotels would be more of a hassle than traditional hotel use. | 0.895 | 0.910 | 3.21 |
| 3.In general, switching to green hotels would involve a monetary loss due to eco-friendly products offered by green hotels. | 0.903 | 0.915 | 3.19 |
| 4.If I switch to a new hotel, I will not be able to use some services and benefits from previous hotels, such as coupons, gift certificates, and membership services. | 0.896 | 0.910 | 3.24 |
| **Total = 86.011%** | | | |
| **Willingness to Shift to Green Hotel (Cronbach's α = .955; Eigenvalue: 4.248; Variance explained:84.964%)** | | | |
| 1.When traveling I am willing to stay at green hotels. | .864 | .929 | 5.25 |
| 2.I am willing to shift to green hotels. | .823 | .907 | 5.08 |
| 3.I am willing to shift to green hotels for other purposes to alleviate environmental problems. | .860 | .927 | 5.24 |
| 4.I will make an effort to use green hotels in the future. | .858 | .926 | 5.14 |
| 5.The green hotel will be my first choice whenever it comes to choosing a hotel. | .844 | .919 | 5.28 |

**Table 4.** Results of measurement model and correlations.

|  | SC | EP | PET | SME | SN | ATTRA | PN | PHB | EWB | INER | WSGH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SC | **0.928** | | | | | | | | | | |
| EP | −0.145 | .893 | | | | | | | | | |
| PET | −0.004 | .442 | .905 | | | | | | | | |
| SME | −0.120 | .466 | .481 | **0.899** | | | | | | | |
| SN | −0.087 | .514 | .604 | 0.559 | **0.880** | | | | | | |
| ATTRA | −0.098 | .527 | .562 | 0.582 | 0.661 | **0.895** | | | | | |
| PN | −0.086 | .487 | .503 | 0.544 | 0.593 | 0.637 | .889 | | | | |
| PHB | −0.021 | .455 | .462 | 0.443 | 0.513 | 0.569 | .584 | .903 | | | |
| EWB | −0.105 | .506 | .507 | 0.574 | 0.583 | 0.631 | .591 | .532 | **0.908** | | |
| INER | 0.534 | −.130 | −.056 | −0.131 | −0.160 | −0.153 | −.131 | −.024 | −0.191 | **0.932** | |
| WSGH | −0.489 | .440 | .361 | 0.456 | 0.476 | 0.469 | .471 | .397 | 0.487 | −0.459 | **0.901** |
| CR | 0.961 | .940 | .948 | 0.944 | 0.932 | 0.953 | .950 | .957 | 0.959 | 0.963 | 0.956 |
| AVE | 0.860 | .797 | .819 | 0.807 | 0.775 | 0.802 | .791 | .816 | 0.825 | 0.868 | 0.812 |

Goodness-of-Fit Statistics: $\chi^2$ (1068) = 2266.386, $\chi^2$/df = 2.122, $p$ < 0.001, RMSEA = 0.044, CFI = 0.963, IFI = 0.964, NFI = 0.933, and TLI = 0.960.
EP: Environmental Policy; PET: Perceived Environmental Threats; SME: Social Media Effects; SN: Social Norm; ATTRA: Attractiveness; PN: Personal Norm; PHB: Perceived Health Benefits; EWB: Emotional Well-being INER: Inertia; SC: Switching Costs; WSGH: Willingness to Shift to Green Hotel; CR: Composite reliability.; AVE: Average variance extracted.

**Table 5.** Results of structural equation modeling.

| Hypotheses | paths | Coefficients | t-value | Results |
|---|---|---|---|---|
| H1: Push factor 1: Environmental Policy | WSGH | 0.09 | 2.258** | *Suppported* |
| H2: Push factor 2: Perceived Environmental Threats | WSGH | 0.032 | 0.759 | *Not supported* |
| H3: Push factor 3: Social Media Effects | WSGH | 0.101 | 2.374** | *Supported* |
| H4: Push factor 4: Social Norm | WSGH | 0.104 | 2.102** | *Supported* |
| H5: Pull factor 1: Attractiveness | WSGH | 0.023 | 0.449 | *Not supported* |
| H6: Pull factor 2: Personal Norm | WSGH | 0.104 | 2.235** | *Supported* |
| H7: Pull factor 3: Perceived Health Benefits | WSGH | 0.103 | 2.459** | *Supported* |
| H8: Pull factor 4: Emotional Well-being | WSGH | 0.103 | 2.25** | *Supported* |
| H9: Mooring factor 1: Inertia | WSGH | −0.321 | −8.608*** | *Supported* |
| H10: Mooring factor 2: Switching Costs | WSGH | −0.204 | −5.469*** | *Supported* |

*$p$ < .05, **$p$ < .01, ***$p$ < .001.
$R^2$ for Willingness to Shift to Green Hotel = .553.
Goodness-of-Fit Statistics: $\chi^2$ (1072) = 2331.277, $\chi^2$/df = 2.175, $p$ < .001, GFI = 0.840, RMSEA = .045, CFI = 0.962, IFI = 0.962, NFI = 0.931, and TLI = 0.958.

governments promote information and create new social norms. Therefore, customers are forced to switch from traditional hotels to green hotels. At the same time, green hotels attract customers with three pull factors (personal norms, perceived physical health, and emotional well-being). Compared to traditional hotels, customers are more gravitate towards green hotels for their own benefits; customers are obliged to their moral decisions and feel physical and mental well-being.

Second, inertia and switching costs, which are mooring factors, negatively influenced the willingness to switch to a green hotel, congruent with prior studies (e.g. Jung et al., 2017; Sun et al., 2017; Wang et al., 2020). Moreover, inertia influences the association between environmental policies and willingness to shift and also that of perceived health benefits and willingness to shift. Another mooring factor, switching costs, influences societal norms and willingness to switch, as well as the association between perceived health benefits and willingness to switch. These results indicate that a person in the low-mooring group have a higher percentage to shift to green hotels, while the high-mooring group tends to remain in traditional hotels and confirming findings from previous studies (Wang et al., 2020; Zeng et al., 2021).

Third, the PPM theory is presented for the first time in the green-hotel context, and the literature on how pull-push-mooring variables affect customers' willingness to switch to a green hotel is examined in detail through a mixed-methods research design. In other words, this study expands the existing theory by providing empirical evidence about what factors (mooring factors) drive customers to switch to green hotels and incorporating the theory into the green hotel context. This development allows us to evaluate the underlying rationale of the green hotel sector and further discuss its contribution to environmental sustainability. Therefore, the current study extends the theoretical underpinning of the pull, push, and mooring variables in choosing green hotels by empirically identifying attributes of each factor and their impact on willingness to shift.

## Managerial implications

Regarding managerial implications, the current study offers some informative implications for policymakers, market leaders, and hotel managers to motivate and attract customers to switch to green hotels. First, the pull variables, perceived health benefits, and emotional

Table 6. Structural invariance analysis and Invariance test of path for hypothesized moderation (Inertia).

| Paths | High Inertia (n = 209) | | Low Inertia (n = 371) | | Fit of the model the path | |
|---|---|---|---|---|---|---|
| | β | t-values | β | t-values | Baseline model | Nested model |
| EP → WSGH | 0.225 | 3.068** | 0.044 | 0.71 | $\chi^2$ (1486) = 2848.940 | $\chi^2$ (1487) = 2854.594[a] |
| PET → WSGH | −0.124 | −1.219 | 0.031 | 0.525 | $\chi^2$ (1486) = 2848.940 | $\chi^2$ (1487) = 2850.686[b] |
| SME → WSGH | 0.15 | 1.722 | 0.14 | 2.26** | $\chi^2$ (1486) = 2848.940 | $\chi^2$ (1487) = 2849.386[c] |
| SN → WSGH | 0.009 | 0.09 | 0.198 | 2.778** | $\chi^2$ (1486) = 2848.940 | $\chi^2$ (1487) = 2850.086[d] |
| ATTRA → WSGH | 0.084 | 0.745 | −0.023 | −0.328 | $\chi^2$ (1486) = 2848.940 | $\chi^2$ (1487) = 2849.601[e] |
| PN → WSGH | 0.057 | 0.554 | 0.141 | 2.17** | $\chi^2$ (1486) = 2848.940 | $\chi^2$ (1487) = 2849.023[f] |
| PHB → WSGH | 0.296 | 2.515** | 0.056 | 0.968 | $\chi^2$ (1486) = 2848.940 | $\chi^2$ (1487) = 2853.836[g] |
| EWB → WSGH | 0.073 | 0.935 | 0.162 | 2.072** | $\chi^2$ (1486) = 2848.940 | $\chi^2$ (1487) = 2849.091[h] |

**H11a**: $\Delta\chi^2$(1) = 5.653, $p < 0.05$ (supported)
**H11b**: $\Delta\chi^2$(1) = 1.745, $p > 0.05$ (not supported)
**H11c**: $\Delta\chi^2$(1) = 0.445, $p > 0.05$ (not supported)
**H11d**: $\Delta\chi^2$(1) = 1.146, $p > 0.05$ (not supported)
**H11e**: $\Delta\chi^2$(1) = 0.661, $p > 0.05$ (not supported)
**H11f**: $\Delta\chi^2$(1) = 0.083, $p > 0.05$ (not supported)
**H11g**: $\Delta\chi^2$(1) = 4.896, $p < 0.05$ (supported)
**H11h**: $\Delta\chi^2$(1) = 0.151, $p > 0.05$ (not supported)

**$p < 0.05$, ***$p < 0.001$.
Metric measurement invariance: $\Delta\chi^2$(32) = 34.985, $p > 0.05$.
Goodness of fit indices of the baseline model: $\chi^2$ (1486) = 2848.940, $\chi2/df = 1.917$, $p < 0.001$, RMSEA = 0.040, CFI = 0.948, IFI = 0.949, NFI = 0.898. and TLI = 0.943.

Table 7. Structural invariance analysis and Invariance test of path for hypothesized moderation (Switching costs).

| Paths | High Switching Costs (n = 199) | | Low Switching Costs (n = 381) | | Fit of the model the path | |
|---|---|---|---|---|---|---|
| | β | t-values | β | t-values | Baseline model | Nested model |
| EP → WSGH | 0.05 | 0.702 | 0.131 | 2.052** | $\chi^2$ (1486) = 2866.445 | $\chi^2$ (1487) = 2866.63[a] |
| PET → WSGH | −0.007 | −0.067 | −0.007 | −0.117 | $\chi^2$ (1486) = 2866.445 | $\chi^2$ (1487) = 2866.446[b] |
| SME → WSGH | 0.126 | 1.455 | 0.106 | 1.746 | $\chi^2$ (1486) = 2866.445 | $\chi^2$ (1487) = 2866.795[c] |
| SN → WSGH | −0.053 | −0.51 | 0.305 | 4.238*** | $\chi^2$ (1486) = 2866.445 | $\chi^2$ (1487) = 2871.269[d] |
| ATTRA → WSGH | 0.046 | 0.421 | 0.059 | 0.832 | $\chi^2$ (1486) = 2866.445 | $\chi^2$ (1487) = 2866.455[e] |
| PN → WSGH | 0.195 | 2.026** | 0.056 | 0.852 | $\chi^2$ (1486) = 2866.445 | $\chi^2$ (1487) = 2868.707[f] |
| PHB → WSGH | 0.226 | 2.183** | 0.024 | 0.415 | $\chi^2$ (1486) = 2866.445 | $\chi^2$ (1487) = 2870.334[g] |
| EWB → WSGH | 0.2 | 2.138** | 0.077 | 1.175 | $\chi^2$ (1486) = 2866.445 | $\chi^2$ (1487) = 2868.751[h] |

**H12a**: $\Delta\chi^2$(1) = 0.186, $p > 0.05$ (not supported)
**H12b**: $\Delta\chi^2$(1) = 0.001, $p > 0.05$ (not supported)
**H12c**: $\Delta\chi^2$(1) = 0.350, $p > 0.05$ (not supported)
**H12d**: $\Delta\chi^2$(1) = 4.824, $p < 0.05$ (supported)
**H12e**: $\Delta\chi^2$(1) = 0.010, $p > 0.05$ (not supported)
**H12f**: $\Delta\chi^2$(1) = 2.262, $p > 0.05$ (not supported)
**H12g**: $\Delta\chi^2$(1) = 3.889, $p < 0.05$ (supported)
**H12h**: $\Delta\chi^2$(1) = 2.262, $p > 0.05$ (not supported)

**$p<0.05$, ***$p<0.001$.
Metric measurement invariance: $\Delta\chi^2$(32)=28.274, $p>0.05$.
Goodness of fit indices of the baseline model: $\chi^2$ (1486)=2866.445, $\chi2/df=1.929$, $p<0.001$, RMSEA=0.040, CFI=0.948, IFI=0.948, NFI=0.898. and TLI=0.942.

well-being positively affected customers' switching intentions. It can be seen that when a customer stays at a hotel, a lot of weight is placed on how their physical and mental health is affected. Therefore, it is vital for hotel decision-makers and managers to understand factors that affect customers' physical and psychological health. Hotels should provide health-related programs such as healthy diet availability, yoga, and meditation to increase the rate of revisiting customers and attract new customers to visit.

Second, hotel managers should recognize that the green hotel industry is a great alternative attraction for green customers. The hotel industry will move in the direction of green hotels in the future due to the influence of environmental policies announced by the government and social media related to eco-friendliness. For example, in August 2016, Ant Forest launched a new green action mobile application in China that allows people to plant virtual trees to engage in green action. When the user's virtual tree grows, the Alibaba company will be planting trees in desert areas to protect the environment. The program has attracted participants and sparked enthusiasm for environmental protection participation. As a result, about 122 million real trees have been planted (Zhang et al., 2020). To achieve similar results, hotel managers should broaden their promotions in green practices to customers through various channels.
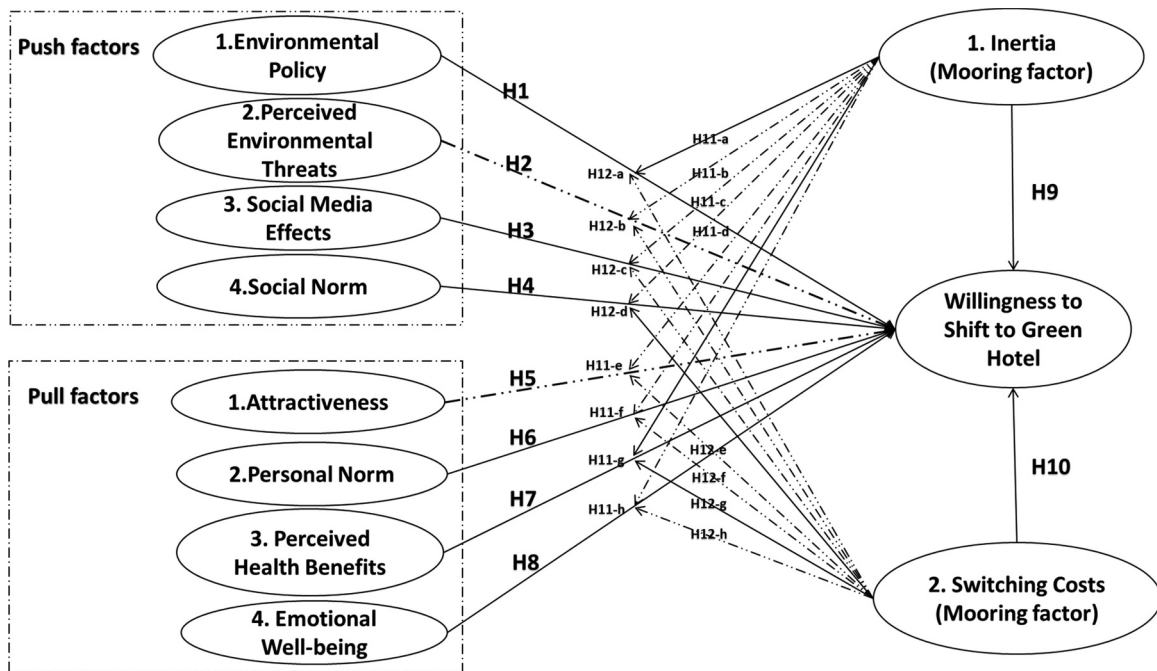
**Figure 1.** Results of hypotheses tests.

Third, the role of policymakers in establishing and implementing policies and measures related to sustainable development is important so that the hotel industry can quickly transform into a green industry. For example, policymakers in China should actively support existing hotels to acquire green hotel licenses. Hotels should follow social environmental standards and implement green practices, such as efficient water use, towel reuse, bedsheet reuse, recycling, avoiding disposable products, and using renewable power to thrive together in the hospitality industry (Han, Yu, et al., 2018).

### *Limitations and direction of future research*

Although the current study has undergone many considerations and supplements, there are some limitations, and these limitations are expected to provide research opportunities for future scholars. Firstly, the PPM theory proposed in the current research was tested only in China. Thus, a wider study is needed to generalize the results. To increase the validity of models based on the PPM theory in the green hotel industry, future researchers need to proceed in other countries and cultures. Second, the attractiveness of a green hotel did not affect the willingness to shift to green hotels in China, which is generally one of the primary pull factors. Therefore, future research should investigate how attractiveness

works in the PPM theory with a different sample. Last, in this study, the sample size of the low-educated group was less than 30, indicating that the explanatory validity of this group was insufficient. In future research, it is expected that the low-educated group will be re-examined with an appropriate sample size regarding their perception of green hotels.

### Conclusions

By applying the PPM theory to the green hotel context and examining the relationships between pull-push-mooring variables, this study expands the theoretical understanding of customers' decision-making process in choosing green hotels and contributes to the existing literature by empirically identifying the attributes of each factor and their impact on customers' willingness to shift. Specifically, customers' willingness to switch is significantly influenced by three push variables: environmental policy, social media effects, and social norms, and three pull factors: personal norms, perceived physical health, and emotional well-being. In addition, this study provides a foundation for incorporating mooring factors into the framework that helps explain negative aspects that constrain customers' willingness to switch from traditional hotels to green hotels and how they interact with pull-push variables. This theoretical development not only

enhances our understanding of customer behavior in the context of sustainable tourism but also sheds light on the role of green hotels in promoting environmental sustainability. Overall, the study provides valuable insights into the factors influencing customers' willingness to switch to green hotels and contributes to the theoretical underpinning of the PPM framework in the context of sustainable hospitality. All in all, the results of this study suggest that scholars, policymakers, and hotel managers should pay more attention to these new variables that have not been used in previous studies on switching behavior.

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## Disclosure statement

No potential conflict of interest was reported by the author(s).

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# Appendix A. Interview guide

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**1. Demographic questions**
- Are you between 1) 18–24 years old, 2) 25–34 years old, 3) 35–44 years old, 4) 45–54 years old, 5) 55 years old and above?
- What is the highest level of education you completed?
- Please tell me about your current occupation.
- How long have you been employed in your current job?

**2. Thoughts on green hotels.**
- What do you think of green hotels?
- What kind of service would you like to receive from green hotels?
- What pushed (push factors) you to choose green hotels?
- What attracted you to choose a green hotel?
- What do you think the reasons are for a reluctance to visit green hotels?

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