Review of Antecedents of Tourists' Pro-Environmental Behavior: Based on Core Chinese and English Databases

Haosheng Xie

University of Michigan, Ann Arbor, MI 48109, USA

xhs2690212471@163.com

Abstract. Existing literature reviews on tourists' pro-environmental behavior (PEB) mostly rely on English databases, overlooking a significant amount of relevant research in Chinese databases. So, this research conducts a literature search from Web of Science (WOS) and China National Knowledge Infrastructure (CNKI). I follow the PRISMA procedure to get 175 articles for review and category the antecedents of tourists' PEB into four main groups: inherent factors, rational factors, emotional factors, and situational factors. Lastly, I suggest some possible directions for future research.

Keywords: Pro-environmental Behavior (PEB); Review; Sustainable Tourism.

1. Introduction

The tourism causes environmental damage (Juvan & Dolnicar, 2017; Nisa et al., 2017). Researchers have paid more attention to pro-environmental behavior (PEB) (Agag, 2019; Lee et al. 2019). Previous research on PEB by scholars has been fragmented, and the path of research on the mechanism of PEB influence can be summarized as an evolution from "rational path" to "emotional path" and then to "rational path + emotional path" (Li et al., 2019). In the early stages of research in this field, the "rational pathway" dominated scholars' exploration directions. Based on two classic behavioral theories, the Theory of Planned Behavior (TPB) (Ajzen, 1991) and the Normative Activation Model (NAM) (Schwartz, 1977), environmental behavior was once considered to be behavior driven by rational factors. On this basis, scholars have also proposed the NAT Extended Theory, the Value-Belief-Norm Theory (VBN) (Stern, 2000), and the New Ecological Paradigm (NEP) scale for measuring environmental problems (Dunlap et al., 2000). Although rational factors such as attitudes, norms, and beliefs have shown good explanatory power for PEB in specific periods and fields, this research pathway, which focuses only on rational elements, has also shown limitations (Yu & Tian, 2017). For example, some empirical studies have shown that rational cognitive factors do not significantly influence PEB (Nisbet et al., 2009). Therefore, researchers began seeking new research pathways from other fields such as psychology and sociology. The emotional pathway gradually became another guiding light in the field of PEB research, with many scholars beginning to focus on the influence and mechanisms of emotional variables on PEB (Yu & Tian, 2017; Dang et al., 2021). Scholars had long emphasized the importance of studying individual PEB from the perspectives of individual emotions and psychology (Morrison & Robinson, 1997). Subsequent empirical studies have also confirmed that emotional factors significantly explain PEB (Kanchanapibul et al., 2014; Meneses et al., 2010).

Most of the existing literature reviews on tourists' PEB have used only English databases, ignoring the large number of relevant studies in Chinese databases. Traditionally, literature reviews are considered a method that enables researchers to map existing knowledge fields (Weed, 2006). Traditionally, conducting a literature review is considered a key activity for mapping the existing knowledge domain (Weed, 2006) and expanding the boundaries of current research (Tranfield et al., 2003). More specifically, the importance of reviews lies in recognizing that "most research can only be understood in context—and a key part of that context consists of the results of other studies" (Petticrew & Roberts, 2006, p. 3). Since previous review studies have mostly focused on English databases, and no one has yet systematically reviewed the literature from both English and Chinese databases, this study aims to better refine the research framework in this field by including high-

quality articles from Chinese databases on tourists' PEB. Furthermore, this paper constructs a reasonable and inclusive framework to summarize the research background, approaches, and findings in the field of tourists' PEB, and proposes areas where related research in this field is relatively lacking for future scholars to explore.

2. Literature Review

2.1 Pro-Environmental Behavior (PEB)

Pro-environmental behavior (PEB) refers to actions taken by humans to protect the environment and prevent its degradation (Stern, 2000). Similar or related terms include "environmentally responsible behavior" (Lee et al., 2013), "green behavior" (Zou & Chan, 2019), "environmentally sustainable behavior" (Cheng et al., 2011), "environmentally friendly behavior" (Li & Zhou, 2014), and "ecological behavior" (Kaiser et al., 1999a).

2.2 Theory of Planned Behavior (TPB)

Theory of Planned Behavior is a psychological theory used to explain individual behavior (Steg & Vlek, 2009). According to Ajzen (1991), an individual's behavior is determined by the individual's behavioral intention. An intention is how much effort a person is willing to put into performing a certain behavior (Ajzen, 1991). In order to explore what factors influence an individual's behavioral intention, TPB proposes three factors, namely "attitude," "subjective norm," and "perceived behavioral control" (Ajzen, 1991). Among these, attitude reflects an individual's assessment of how good or bad a behavior is, and it is an indicator of the acceptability of a behavior to the individual (Ajzen, 1991). Subjective norm refers to the assessment of self-relevant behavior that an individual expects from people who are important to him/her (e.g., family members, friends, coworkers, etc.) (Li & Wu, 2019). It is not purely objective but is perceived by the individual. Perceived behavioral control refers to an individual's perception of how easy or difficult it is for him or her to go about performing a behavior (Ajzen, 1991). Individuals are more likely to perform a behavior if it is perceived by the individual to be very simple to perform and does not require a lot of effort (Li & Wu, 2019). The TPB has been shown to be a reliable theory for explaining individual behavior in various situations (Han, 2021; Macovei, 2015). Many scholars in the field of tourism have adopted the TPB to predict tourists' PEB, and some researchers have proposed improved models to increase the applicability of the TPB in tourism contexts. For example, subjective norm and perceived behavioral control positively influence attitude (Han et al., 2010; Miao & Wei, 2013).

2.3 Normative Activation Model (NAM)

Normative Activation Model assumes that individuals' behavior is guided by personal norms, and that individuals perceive social or cultural norms in a given situation and consider the impact of these norms on their behavior. When individuals perceive the presence and pressure of norms, they will tend to adjust their behavior to conform to those norms in order to gain social approval or avoid social criticism (Schwartz, 1977). The theory explains how an individual's pro-social behavior and intentions are elicited through the use of three variables: awareness of consequences (AC), attribution of responsibility (AR), and personal norms (PN) (Schwartz, 1977). In the research scenario of tourists' PEB, AC refers to whether tourists are aware that their behavior may have a negative impact on the environment; AR denotes tourists' sense of attribution of responsibility for the negative impacts of their behavior on the environment; and PN refers to tourists' sense of moral obligation for their behavior (De Groot & Steg, 2009; Han, 2015). The tourists' PEB and intention are stimulated in a hierarchical process from AC to AR to PN (Li & Wu, 2019). Specifically, when tourists are aware that a particular action can be harmful to the environment and attribute responsibility to themselves, their moral norms are activated, which in turn makes them more inclined to implement PEB.

2.4 Place Attachment Theory

Williams and Vaske (2003) defined place attachment as "a positive connection or bond between a person and a particular place," and further divided it into two dimensions: place dependence and place identity. The former refers to the necessity of a specific place for an individual's particular activities and their emotional needs for the area's natural and socio-cultural environment; the latter refers to an individual's emotional attachment and sense of belonging to a place, stemming from emotional investment in that place (Williams & Vaske, 2003). Scholars believe that place dependence is a more superficial emotion, which deepens personal identification and emotional connection to a specific place, ultimately developing into place identity (Trąbka, 2019).

2.5 Affective Forecasting Theory

The ability to predict future feelings based on psychological simulation of future events is unique to humans (Gilbert & Wilson, 2007). This ability helps humans make decisions about future behavior and psychologically prepare for the future emotions (negative or positive) these decisions may bring (Barsics et al., 2016). Affective Forecasting Theory posits that people use situational future thinking to predict their future emotional experiences, including the type of emotion, its intensity, and duration (Wilson & Gilbert, 2003). Behavior is primarily guided by anticipated emotions during affective forecasting (Baumeister et al., 2007). In the tourism and hospitality fields, many empirical studies have shown that anticipated emotions positively impact tourists' PEB and intentions (Kim et al., 2013; Han et al., 2019).

3. Results

In the literature search phase, to ensure the accuracy and diversity of the search results, WOS and CNKI, the most popular large online search engines internationally and in China, respectively, were selected as electronic databases. Web of Science (WOS) is a large, internationally recognized database containing a large number of high-impact journals and conference papers (Glinyanova et al., 2021). China National Knowledge Infrastructure (CNKI), on the other hand, is the largest and most authoritative database of academic papers in China, containing almost the entire academic literature in the country (Wang et al., 2022b). In the WOS search engine, this study searched for "pro-environmental behavior" and its synonymous alternatives such as "environmentally responsible behavior", "environmentally sustainable behavior", "environmentally friendly behavior", etc. as keywords in the title search. The source publication category of the articles was restricted to "Hospitality, Leisure, Sport & Tourism" because this category contains high-quality journals in the field of tourism, and a total of 257 articles were obtained. In the CNKI search engine, titles were searched by selecting the same keywords as before and translated into Chinese. To ensure the high quality of the Chinese literature, the source of the articles was limited to academic journals with the category of "Chinese Social Sciences Citation Index (CSSCI)". resulting in a total of 179 articles. Following the principles of meta-analysis (PRISMA) (Moher et al., 2009), the 436 documents initially retrieved were further screened, and a total of 175 high-quality articles highly relevant to the topic of this review were selected as sample documents after excluding those less relevant to the topic of this review and duplicates.

3.1 Publication Timeline

Figure 1 shows the publication timeline of the selected literature. From 2010 to 2017, research interest in tourists' PEB was relatively low. However, the number of related articles published annually has shown a rapid upward trend since then, reaching 35 in 2023, and 23 in the first half of 2024 alone. This indicates a growing global scholarly interest in the topic of tourists' PEB.
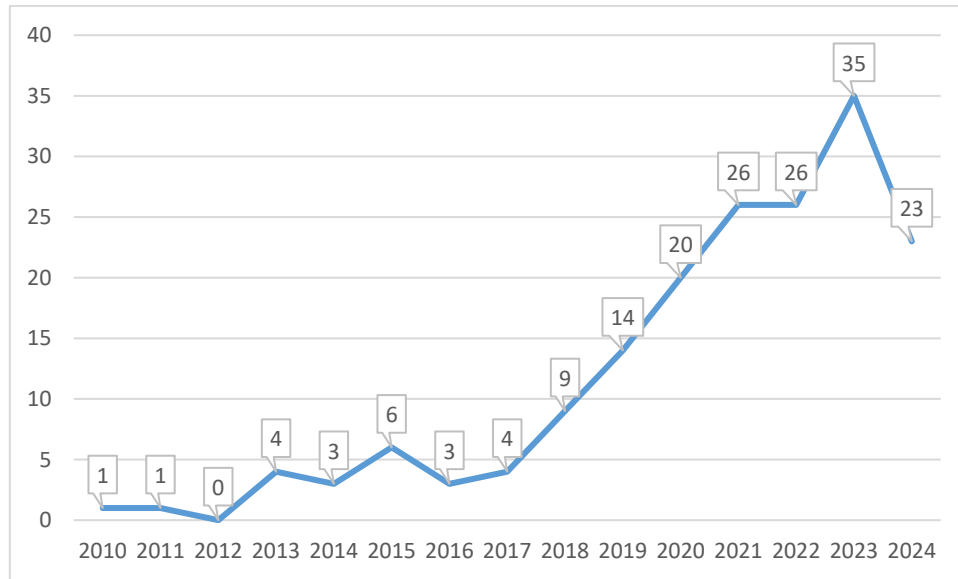
Figure 1. Number of Publications per Year on Tourists' PEB (2010–2024)

3.2 Journal Distribution

Table 1 presents the journals in which the sample literature was published and the number of articles. The Journal of Sustainable Tourism had the most publications (N=133, 16.6%), followed by the Asia Pacific Journal of Tourism Research and the Journal of Hospitality and Tourism Management (N=13, 7.4% each). Articles published in various other journals account for nearly seventy percent of the total.

Table 1. Number of Publications on Tourists' PEB in Various Journals

Journal Name	Count	Percentage
JOURNAL OF SUSTAINABLE TOURISM	29	16.6%
ASIA PACIFIC JOURNAL OF TOURISM RESEARCH	13	7.4%
JOURNAL OF HOSPITALITY AND TOURISM MANAGEMENT	13	7.4%
CURRENT ISSUES IN TOURISM	9	5.1%
TOURISM MANAGEMENT	8	4.6%
JOURNAL OF DESTINATION MARKETING & MANAGEMENT	6	3.4%
JOURNAL OF OUTDOOR RECREATION AND TOURISM-RESEARCH PLANNING AND MANAGEMENT	6	3.4%
JOURNAL OF TRAVEL & TOURISM MARKETING	6	3.4%
TOURISM MANAGEMENT PERSPECTIVES	6	3.4%
Economic Geography	5	2.9%
JOURNAL OF TRAVEL RESEARCH	5	2.9%
INTERNATIONAL JOURNAL OF TOURISM RESEARCH	4	2.3%
JOURNAL OF ECOTOURISM	4	2.3%
LEISURE SCIENCES	4	2.3%
Tourism Tribune	4	2.3%
Areal Research and Development	3	1.7%
INTERNATIONAL JOURNAL OF HOSPITALITY MANAGEMENT	3	1.7%
Journal of Arid Land Resources and Environment	3	1.7%
TOURISM RECREATION RESEARCH	3	1.7%
ANNALS OF TOURISM RESEARCH	2	1.1%
Human Geography	2	1.1%
JOURNAL OF CHINA TOURISM RESEARCH	2	1.1%
Journal of Nanjing Tech University (Social Science Edition)	2	1.1%

JOURNAL OF OUTDOOR RECREATION EDUCATION AND LEADERSHIP	2	1.1%
JOURNAL OF QUALITY ASSURANCE IN HOSPITALITY & TOURISM	2	1.1%
JOURNAL OF TOURISM FUTURES	2	1.1%
JOURNAL OF VACATION MARKETING	2	1.1%
LEISURE STUDIES	2	1.1%
Others	23	13.1%

3.3 Authors' Nationalities

Table 2 shows the nationalities of the first authors of the sample literature. Scholars from China (including Taiwan) were the most numerous, with 102 authors, accounting for 58.3%. This was followed by authors from the United States and South Korea, with 20 (11.4%) and 15 (8.6%) authors, respectively. This indicates a high level of interest in tourists' PEB among Chinese scholars. However, this also poses a problem. According to cultural dimension theory, people from different cultural backgrounds may exhibit different behaviors and perceptions (Hofstede, 2001). Since most Chinese scholars also choose research locations in China, this may limit the generalizability and diversity of research findings in this field. Therefore, it is encouraged that scholars from different regions of the world conduct more cross-cultural comparisons in future research.

Table 2. Authors' Nationalities of Publications on Tourists' PEB

Nationality of First Author	Count	Percentage
China	102	58.3%
The USA	20	11.4%
Korea	15	8.6%
Australia	10	5.7%
India	7	4.0%
Others	21	12.0%

3.4 Research Contexts

Table 3 shows the research contexts of the sample literature. Most studies (N=133, 76%) focused on tourism destination settings (including wetland parks, national parks, nature reserves, etc.). The hospitality context accounted for 17 studies (9.7%). Other research contexts included trails, museums, aquariums, airports, etc., totaling 25 studies (14.3%). During the literature screening phase, it was found that hotel studies heavily focused on the hardware facilities of hotel enterprises and the PEB of hotel staff, while research on the PEB of hotel guests was relatively scarce. Additionally, there is a lack of studies on tourists' PEB in other contexts such as museums, restaurants, and transportation. Therefore, future research is encouraged to focus on tourists' PEB in a wider range of tourism contexts.

Table 3. Research Contexts of the Sample Literature

Research Context	Count	Percentage
Tourism Destination (including wetland parks, national parks, nature reserves, etc.)	133	76.0%
Hospitality (including hotels, B&Bs, etc.)	17	9.7%
Others (including trails, museums, aquariums, airports, etc.)	25	14.3%

3.5 Research Design

Table 4 displays the types of research designs adopted in the sample literature. The vast majority (N=169, 96.6%) of the studies were cross-sectional, with only five experimental studies and one longitudinal study. This indicates that cross-sectional research dominates the field of tourists' PEB. However, cross-sectional studies can only establish correlations between factors and cannot confirm causal relationships. Experimental studies, by controlling variables and random grouping, can more clearly establish causality, while longitudinal studies provide time-series data and reduce recall bias, allowing for better inference of causal relationships (Prati et al., 2015; Viglia & Dolnicar, 2020). Therefore, future researchers are encouraged to adopt more experimental and longitudinal study designs to strengthen the theoretical foundation of this field.

Table 4. Types of Research Designs in the Sample Literature

Research Design	Count	Percentage
Cross-sectional	169	96.6%
Experimental	5	2.9%
Longitudinal	1	0.6%

3.6 Behavioral Measures

Table 5 shows that most researchers in the sample literature used tourists' PEB intentions as proxies for actual PEB (N=111, 63.4%), while fewer studies measured actual PEB (N=64, 36.6%). There is often a discrepancy between behavioral intentions and actual behavior, as what people say they will do does not always align with what they actually do (Miller, 2003). To avoid the overestimation that can result from using behavioral intentions as proxies, more studies measuring actual behavior are encouraged. However, it should be noted that most studies measuring actual behavior also collected self-reported data from tourists, which may include biases and inaccuracies. Therefore, while encouraging researchers to measure actual PEB, it is also important to further study how to improve the accuracy of these measurements.

Table 5. Behavioral Measures of the Sample Literature

Actual/Intentional Focus	Count	Percentage
Pro-environmental Behavior	64	36.6%
Pro-environmental Behavior Intention	111	63.4%

4. Conclusion

Currently, scholars have conducted theoretical and empirical studies on the antecedents of tourists' PEB from multiple perspectives. Understanding which antecedents have been repeatedly validated to influence tourists' PEB can enhance readers' understanding of the current state of PEB research and provide clear directions for future studies. Existing literature has investigated numerous antecedents of tourists' PEB, which can be categorized into four main groups: inherent factors, rational factors, emotional factors, and situational factors. Table 6 shows the statistical classification of these antecedents. Among inherent factors, environmental awareness is emphasized the most, followed by various values and daily habits. Among rational factors, personal norms are mentioned most frequently, followed by attitudes and perceived behavioral control. Place attachment, connectedness to nature, and anticipated emotional evaluation are mentioned in the top three of the emotional factors. Among situational factors, social norms are emphasized the most, followed by destination image and environmental education.

Table 6. Classification and Frequency of Antecedents of Tourists' PEB

Inherent Factors	Count
Environmental awareness	19
Value	12

Habit	9
Others (personality characteristics, religious beliefs, self-image congruity, etc.)	12
Rational Factors	
Personal norm	27
Attitude	24
Perceived behavioral control	8
Others (perceived self-efficacy, perceived effectiveness, personal reputation, etc.)	17
Emotional Factors	
Place attachment	19
Connectedness to natural	12
Anticipated emotion	10
Others (nature reverence, perceived environmental restoration, recreational involvement, etc.)	9
Contextual Factors	
Social norm	16
Destination image	11
Environmental education perception	10
Others (tourism experience, tour guide, green marketing, etc.)	20

4.1 Inherent Factors

4.1.1 Environmental awareness.

Environmental awareness refers to the extent to which individuals recognize and value the impact of human actions on nature (Kim & Han, 2010). One of the best ways to enhance the PEB is to increase people's environmental awareness (Barbaro & Pickett, 2016). The more people understand the importance of environmental issues to the entire biosphere, the more they understand the vital role of individuals in protecting the environment (Darvishmotevali & Altinay, 2022). Numerous studies have shown that environmentally conscious consumers are more aware of and value environmental issues, and are more likely to exhibit PEB in everyday life and tourism contexts (Kim & Han, 2010; Han et al., 2018).

4.1.2 Value.

Values are the core of an individual's self-awareness, which affects the individual's attitude and evaluation of objective things as well as his or her behavior (Schwartz, 1992). People with biosphere values respect the environment and care about its preservation (Thelken & De Jong, 2020). Past studies have shown that biosphere values have a positive effect on tourists' PEB (Hoshyar et al., 2022; Sadiq et al., 2022). Egoistic values are utilitarian values that consider personal interests, and tourists with such values have difficulty exhibiting PEB because engaging in PEB during hedonistically-oriented travel tends to be detrimental to one's own interests (Kiatkawsin & Han, 2017; Hoshyar et al., 2022; Sadiq et al., 2022). Altruistic values, on the other hand, reflect an individual's concern for the well-being of society and the biosphere rather than the maximization of personal interests (Lee et al., 2014).

4.1.3 Habit.

Habits are automatic choices that guide individuals to perform specific behaviors in any environment (Steg & Vlek, 2009). Some scholars have proposed that PEB is habitual and guided by automatic environmental cognitive processes (Steg & Vlek, 2009). Comfort and familiarity with the home environment help individuals establish and maintain environmental habits (Ouellette & Wood, 1998). As people engage in PEB more frequently in their daily lives, these habits are more likely to transcend context and location, allowing them to maintain their environmental efforts and commitment across different contexts (Choi & Kim, 2021). Numerous studies have shown that environmental habits in daily life encourage actual PEB and intentions in various contexts such as

travel (Miller et al., 2014; Xu et al., 2020; Holmes et al., 2019) and hotels (Dharmesti et al., 2020; Han & Hyun, 2018; Untaru et al., 2016). This contextual consistency demonstrates the spillover effects of PEB across contexts (Evans et al. 2012).

4.2 Rational Factors

4.2.1 Personal norm.

Personal norms are defined as a sense of moral obligation to perform or not perform certain behaviors (Schwartz, 1977). The formation of personal norms depends on social norms and can be understood as the internalization of external social norms (Doran & Larsen, 2015). In tourism scenarios, tourists' personal norms guide tourists' PEB production as long as tourists have a sense of moral obligation to protect the environment (Bertoldo & Castro, 2016). Many studies have shown that personal norms of tourists are key antecedents and catalysts of their PEB (Steg & De Groot, 2010; Liu et al., 2017; Kim & Hall, 2022).

4.2.2 Attitude.

Attitudes are defined as behavior the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991). When individuals perceive that engaging in a particular PEB is beneficial, they develop positive attitudes toward engaging in that behavior, which influences their decision to engage in a PEB (Han, 2015; Han et al., 2010). In the context of tourism, many empirical studies have also assessed and confirmed the strong relationship between attitudes and tourists' PEB, for example, some scholars have demonstrated that the attitudes of beach tourists towards PEB affect their actual behavior (Liu et al., 2021), and some scholars have confirmed that the attitudes of hotel customers significantly affect their intention to choose to live in a green hotel (Han et al., 2010).

4.2.3 Perceived behavioral control.

Perceived behavioral control refers to the "perceived ease of performing a behavior" and can reflect an individual's past experiences and perceived barriers (Ajzen, 1991). It is a central variable influencing tourists' PEB and directly affects an individual's behavioral intentions and behavioral intensity (Qu et al., 2020). In some cases, positive attitudes lead to the formation of positive intentions only when people believe that they are able to perform a specific behavior (Bandura, 1997). Essentially, an individual's perceived behavioral control determines their perceived value of the behavior and the strength of their intention to perform it (Mao & Lyu, 2017; Perugini & Bagozzi, 2001). If individuals feel that a behavior can be easily implemented and that they can benefit from it, then this perception motivates them to pursue the desired outcome (Han, 2015). In the academic field, many studies have confirmed that perceived behavioral control has a direct or indirect effect on tourists' PEB (Lee, 2007; Lee & Jan, 2017).

4.3 Emotional Factors

4.3.1 Place attachment.

Place attachment refers to the psychological connection between an individual and a place, based on past experiences, knowledge, or beliefs about that place (van Riper et al., 2019). The dimensions of place identity and place attachment are often used by scholars to explain and measure place attachment (Bricker & Kerstetter, 2000). Scholars have found that place attachment significantly influences tourists' attitudes, perceptions, and behavior toward a destination (Ramkissoon et al., 2013b; Hosany et al., 2017). Numerous studies have demonstrated the association between place attachment and tourists' PEB. For example, an empirical study on Canadian national park visitors showed that place attachment indirectly influenced PEB intentions through empathy (Walker & Chapman, 2003). Other studies on national parks (Halpenny, 2010; Ramkissoon et al., 2013b), tropical islands (Cheng et al., 2013), and wetlands (Lee, 2011) have shown that the place attachment that tourists develop in tourism destinations increases their PEB and intentions.

4.3.2 Connectedness to nature.

Connectedness to nature refers to the extent to which an individual feels part of the natural world (Schultz, 2001). Connectedness to nature expands one's sense of self and leads the individual to be more considerate of other creatures in nature (Gosling & Williams, 2010). As an individual's connection to nature deepens, the individual develops a stronger and stronger emotional connection and empathy for the natural environment. (Mayer & Frantz, 2004). At the same time, individuals' concern for environmental issues and empathy for nature typically increase (Gosling & Williams, 2010; Mayer & Frantz, 2004). Consequently, the PEB individuals engage in often increases as their connection to nature grows (Dutcher et al., 2007; Schultz et al., 2004). In tourism contexts, numerous studies have shown that tourists who feel strongly connected to the natural environment are more likely to exhibit PEB during their travels (Gosling & Williams, 2010; Dutcher et al., 2007). It has also been shown that providing tourists with the opportunity to emotionally connect with animals positively affects their willingness to participate in PEB (Falk et al., 2008; Schultz & Joordens, 2013).

4.3.3 Anticipated emotion.

Anticipated emotions describe an individual's expectation of the emotions he or she will experience in the future after completing a particular behavior. (Bagozzi & Yi, 1998). People always habitually anticipate their positive or negative emotions in the event of achieving or failing to achieve a future goal before deciding to engage in a particular behavior (Perugini & Bagozzi, 2004). The strength of these anticipated emotions is a key aspect that potentially motivates an individual's decision-making (Bagozzi & Yi, 1998; Thomson et al., 2007). In social contexts, when an individual evaluates a behavior based on social or personal standards, positive or negative anticipatory emotions are generated, which in turn help one to decide about whether to practice the behavior or not (Onwezen et al., 2014; Tracy & Robins, 2007). Numerous studies have proved that tourists' anticipatory emotions play a decisive role in generating PEB, which is because most people will try to feel positive anticipatory emotions, such as pride, and avoid feeling negative anticipatory emotions, such as guilt (Kang et al., 2015; Lee & Hyun, 2015). These anticipated emotional experiences, even before they are actually felt, often guide individuals' pro-environmental decisions (Han, 2014; Han & Hyun, 2016).

4.4 Situational Factors

4.4.1 Social norm.

Social norms are defined as "a set of formal and informal rules, beliefs, and standards which are accepted and comprehended by members of a specific organization or group, and that can reflect what the majority of other people do, or approve (disapprove) of doing" (Gao et al., 2017). Because people are social beings, they tend to choose to follow the norms of society as a whole, and therefore social norms are often considered to be efficient in disciplining and guiding individual behavior (Zhang et al., 2022; Wang & Zhang, 2020). Social norms can be further categorized into two types; what the majority of others do is known as descriptive social norms while what the majority of others approve or disapprove of doing is known as injunctive social norms. Individuals tend to practice personal behavior by perceiving the social information given to the individual by the former, while the latter is more similar to a form of moral pressure and monitoring from social evaluation (Cialdini, 2007). Some scholars have argued that external social norms are less effective than personal norms in guiding tourists' PEB (Thøgersen, 2006). For social norms to effectively trigger subsequent PEB, they must be internalized as personal norms (Collado et al., 2017).

4.4.2 Destination image.

In tourism research, destination image has been defined as an individual's or group's overall impression of a particular location (Stringer, 1984). Its goodness or badness is mainly based on the quality of the environment and the design of the amenities of the destination itself (Awaritefe, 2008; Beerli & Martín, 2004), in addition to being influenced by tourists' perceptions of these external

factors (Gallarza et al., 2002). In general, destination image assessment includes both cognitive and affective dimensions (Kim & Perdue, 2011; Martín & Bosque, 2008). Cognitive appraisal is defined as beliefs or knowledge about the characteristics of a destination, while emotional appraisal represents feelings or attachments resulting from experiences and feelings at a particular location (Chan & Baum, 2007; Chhetri et al., 2004). Positive destination image leads to greater respect for the local environment by tourists, which is ultimately reflected in their PEB (Ballantyne & Packer, 2011; Hughes, 2013; Zeppel, 2008). Several scholars' studies have shown that destination image affects tourists' satisfaction, intention to revisit, and attachment to the destination (Assaker & Hallak 2013; Kim et al. 2010; Li et al. 2010). In addition, many studies have confirmed that the stronger the positive emotions tourists have toward the destination image, the more likely they are to form PEB intentions (Chiu et al. 2013; Lin & Shao, 2021; Luong, 2023). There are also scholars using the broken window theory to prove that poor environmental quality of a destination hinders tourists' PEB intention and vice versa (Liu et al., 2019).

4.4.3 Environmental education.

Environmental education is an educational activity aimed at increasing public awareness and ability to protect the environment through the spread of environmental knowledge and skills (Yu et al., 2022). Individuals often choose not to practice certain behaviors when their level of knowledge is insufficient to support their understanding and practice to guide their behavior (Chan et al., 2014). Therefore, scholars generally agree that environmental knowledge influences an individual's PEB (Boo and Park, 2013; Kaiser et al., 1999b). Tourist environmental education occurs during tourism activities in tourist destinations which facilitates the spreading of ecological knowledge and increases tourists' ability and awareness to solve environmental problems (Lee, 2009). This type of environmental education tends to be more effective than environmental education in normal situations because it allows tourists to come into direct contact with the natural environment, which in turn better provokes their feelings and reflections (Wang et al., 2022a). Numerous studies have shown that environmental education in tourist destinations can enhance tourists' environmental knowledge and encourage PEB (Lee et al. 2015; Li et al. 2019; Rahmafitria & Kaswanto 2024).

5. Discussion

Overall, through a systematic review and summary of the sample literature, it can be concluded that the existing research on the antecedents of tourists' PEB is already very comprehensive and thorough. These antecedents can be well categorized into the four major groups proposed in this paper (as shown in Figure 2). However, during the literature analysis, it was found that most studies conceptualize tourists' PEB as a unidimensional construct, and it is not common to divide tourists' PEB into multiple dimensions. Only six articles in the literature sample distinguished tourists' PEB into low-effort and high-effort dimensions. Scholars proposed that tourists' PEB could be classified into low-effort PEB and high-effort PEB based on tourists' commitment and participation levels (Ramkissoon et al., 2013b), and many scholars adopted this classification method later. Some conclusions suggest that the various factors influencing tourists' PEB, which have been widely mentioned previously, may have different impacts on these two types of PEB. For example, it was noted that social interaction factors were significantly associated with both low-effort and high-effort PEB intention of tourists, while environmental values and environmental concerns exhibited by tourists were only positively associated with high-effort PEB intention (Li & Wu, 2020). It has also been shown that the higher the tourist's satisfaction with the destination, the more likely the tourist is to perform low-effort PEB, but higher levels of place satisfaction also discourage tourists from developing the intention to perform high-effort PEB (Ramkissoon et al., 2013b). Regarding the relationship between these two types of tourists' PEB, some studies suggest that low-effort PEB intentions have a positive spillover effect on high-effort PEB intentions (Ramkissoon et al., 2013a; J. Wang et al., 2021). In summary, existing research in this area is still relatively limited, and some

existing findings have not been repeatedly validated in different contexts. Therefore, future research needs to classify tourists' PEB into these two dimensions or more dimensions.
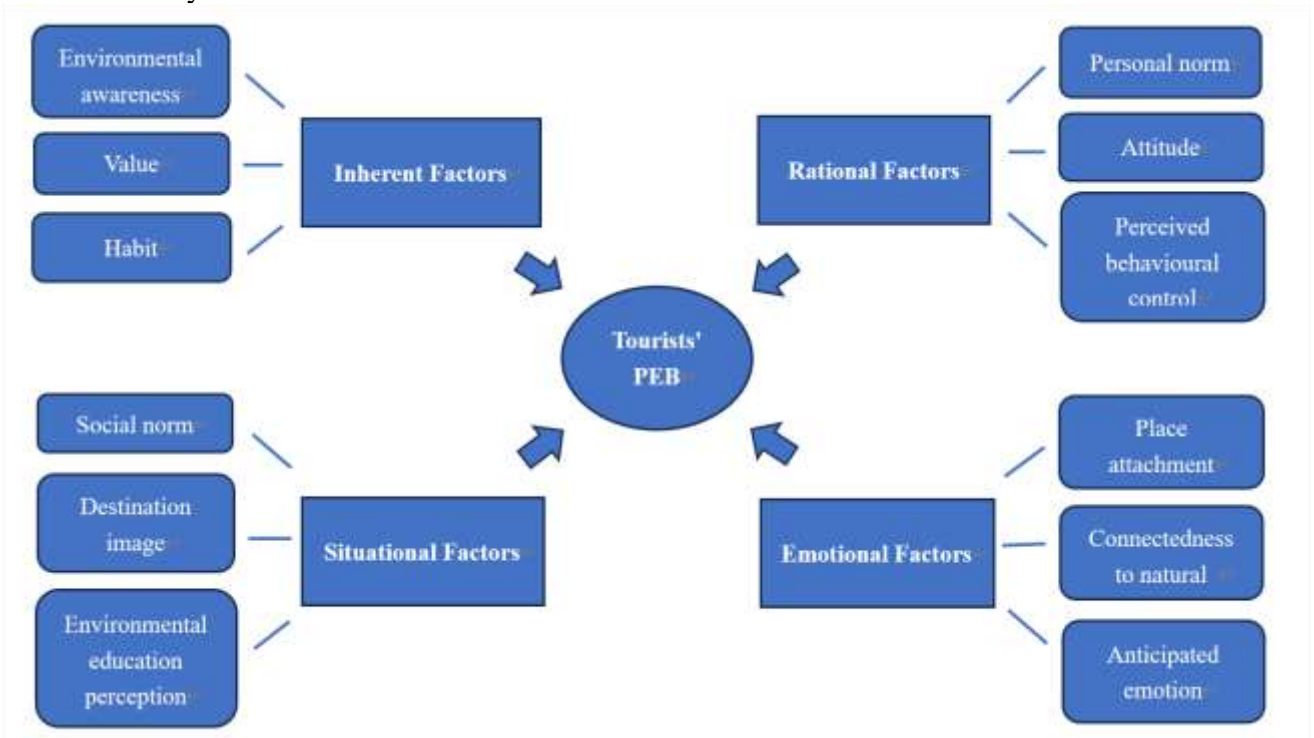

Figure 2. Categorization of Antecedents Influencing Tourists' PEB

6. Limitations and Future Direction

Although this paper provides a comprehensive systematic analysis and summary of a large number of Chinese and English literature on the antecedents of tourists' PEB, there are still some limitations. First, only English and Chinese literature from the two major databases, Web of Science (WOS) and China National Knowledge Infrastructure (CNKI), were selected during the literature search phase. Since the search was conducted using keywords in the titles, while improving accuracy, it inevitably overlooked some relevant literature. Therefore, future reviews are encouraged to use a richer set of databases and employ various keyword combinations to conduct broader searches and examinations in the "title," "abstract," and "keywords." Second, this literature review is limited to databases in Chinese and English, while future literature reviews may try to include more databases in other languages.

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