

# Relationship between environmental awareness and environmentally responsible behaviour in the hospitality industry: A literature review

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## **Abstract:**

The authors provide a systematic review of previous empirical studies conducted on the relationship between environmental awareness (EA) and environmentally responsible behaviour (ERB). We point out several existing gaps in the literature. Specifically, in Vietnam, there is a scarcity of studies addressing the relationship between EA and ERB, particularly in the context of tourism. In addition, there are a limited number of studies delving into the relationship between EA and ERB of hotel managers in Vietnam. Moreover, previous studies predominantly relied on a single theoretical model for their investigations. To address the existing gaps, we highlight the need for further research on the role of managers in the hospitality industry in Vietnam and their impact on environmental sustainability. Future research should also employ an integration of models and theories and focus on actual behaviour related to ERB rather than behavioural intentions. Another direction for future research is the simultaneous investigation of individual ERB and institutional ERB and the inclusion of various types of accommodation facilities.

**Keywords:** environmental awareness, environmentally responsible behaviour, the relationship between awareness and environmentally responsible behaviour.

**Classification numbers:** 2.2, 2.3, 4.1

## **1. Introduction**

Hospitality has gained widespread recognition as one of the most energy-intensive sub-sectors within the tourism industry, consistently ranking among the top 5 in terms of energy consumption within the commercial building sector. It is estimated that a typical hotel releases approximately 160 to 200 kilograms of carbon dioxide per square metre of room floor area annually, with the specific emissions dependent on the type of fuel used for electricity generation, heating, or cooling [1]. However, the hotel industry initially displayed a sluggish response to environmental demands until the emergence of several EA programmes in the 1990s, including the National Hotel Environment Initiative (IHEI) and the Environmental Action Package for Hotels [2, 3].

The operational practices of tourism-related businesses have a substantial influence on how tourists perceive and engage in responsible consumption. Research findings reveal that 90% of individuals in the UK, 70% in Australia, and only 30% in the United States believe that the tourism industry has adverse effects on the environment [4]. In particular, tourism is associated with adverse environmental impacts [5-7]. Furthermore, 75% of tourists consider a hotel's environmental policies when making accommodation choices, while a noteworthy 87% prioritise eco-friendly hotels [8]. For Asian tourists, including Chinese tourists, the environmentally responsible behaviour of tourists might be due to their fear of losing face [9].

The adoption of eco-friendly practices not only enables businesses to achieve cost savings but also attracts new customers while contributing to the preservation of the natural environment, which forms

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the foundation of much of the tourism industry [4, 10]. These benefits encompass attracting customers, realising financial gains, and generating community advantages by mitigating the negative impacts associated with hotels practising environmental responsibility.

The process of implementing responsible tourism within enterprises typically begins with raising awareness, especially among top management. Numerous factors affect the integration of responsible tourism practices within businesses, encompassing both external and internal influences. The direction and scope of responsible tourism development within a specific country and region determine the availability of information, knowledge, tools, and models related to responsible tourism. Factors such as legal constraints, customer expectations, and community requirements linked to responsible tourism directly influence businesses. Meanwhile, the scale of operations, field of activity, experience, and capacity of enterprises play crucial roles in determining the level of awareness and the successful implementation of responsible tourism initiatives.

This article employs a systematic approach to review previous studies on the relationship between awareness and behaviour to identify research gaps and provide direction for future research endeavours. To fulfil such research objectives, during the review of the literature, we aim to address 4 questions which are mentioned in the second part of this article.

## 2. Research methods

Several justifications support this selection of the literature review method. Firstly, a systematic literature review provides a clear and comprehensive overview of the available evidence on a specific topic (e.g., EA and behaviour) [11]. Conducting a systematic review is a valuable endeavour for researchers to cultivate knowledge in the subject area of interest, thereby aiding in the identification of research gaps in the current state of understanding within a field and the development of new research ideas [11]. Additionally,

a systematic literature review may draw attention to methodological issues in research that can help advance future efforts in the field [11]. Moreover, they can be used to determine questions for which the available evidence provides clear answers and, therefore, do not require further research. In the field of tourism and hospitality, systematic literature reviews have also been widely applied, such as the previous reviews [12-15].

Systematic approach was conducted across multiple stages. Initially, specific keywords related to environmentally responsible behaviour and awareness, encompassing terms such as “awareness and behaviour,” “environmental awareness,” “responsible behaviour in the context of the environment,” and “the connection between awareness and environmentally responsible behaviour in hotels” were employed. These keywords served as the foundation for the search strategy, applied within the “Google Scholar” platform, to identify pertinent studies.

The selection of studies for this review adhered to three primary criteria:

(i) A concentration on articles originating from high-ranked journals, as catalogued in Web of Science - Clarivate Analytics and Scopus, situated within the domains of business and tourism.

(ii) Prioritisation of research articles that had more than 200 citations.

(iii) A preference for studies specifically conducted within the hotel sector.

It is important to emphasise that four questions were also considered during the above process. These questions are (i) How EA affects ERB in previous studies; (ii) Foundational theories used in empirical studies on the relationship between EA and ERB; (iii) The analytical approach to address the relationship between EA and ERB in previous studies; and (iv) How sociodemographic factors of respondents and characteristics of the accommodations affect the relationship between EA and ERB.

Following this rigorous selection process, a total of sixty-two (62) studies pertaining to awareness and environmentally responsible behaviour were identified. To maintain the focus of our research, which centres on examining the relationship between “environmental awareness” and “responsible behaviour,” 36 studies that solely explored these individual concepts were excluded from this literature review. Consequently, the final set of studies used in this review includes 26 studies. Within these, only 9 studies delved into the connection between EA and environmental behaviour in the field of tourism, and only 6 studies investigated this relationship within the hotel sector. The remaining studies were conducted in other industries.

### 3. Results

#### 3.1. *The relationship between environmental awareness and environmentally responsible behaviour*

EA encompasses the development of human understanding and consciousness regarding the physical environment and the associated challenges, including the interactions and impacts of humans within this context. EA comprises two essential components: (1) knowledge pertaining to the environment and (2) a heightened awareness of environmental issues. In alignment with this perspective, several researchers acknowledge that EA signifies an individual’s comprehension of the natural environment [16-19]. Additionally, knowledge concerning environmental concerns is considered an integral facet of EA [20]. Furthermore, the dimensions of EA encompass specific environmental issues such as waste treatment, noise, air pollution, water pollution, soil pollution, ozone layer depletion, the greenhouse effect, and acid rain [21-23]. More recently, Y. Li (2018) [24] and Y. Du, et al. (2018) [25] have expanded the understanding of EA to include knowledge and skills as integral components. In summary, EA could be defined through three key dimensions: (1) comprehension of the natural environment, (2) awareness of environmental issues, and (3) the possession of environmental action skills.

ERB is a concept that encompasses the actions undertaken by an individual or a collective of individuals who possess an interest in environmental issues and ecological knowledge [20, 26]. ERB not only signifies a concern for the environment but also manifests as a willingness to protect the environment through the concrete daily activities of individuals or groups [27]. The aim of such actions is to mitigate adverse environmental impacts [28-31]. Furthermore, ERB could be expressed through a spectrum of attributes, including attitudes, emotions, environmental values, a genuine concern for the environment, and sustained efforts in environmentally responsible conduct [31]. ERB could be classified as ERB of individuals and ERB of institutions [32].

EA plays a significant role in shaping an individual’s behaviour towards the environment [28]. An individual’s level of EA can strongly influence their engagement in environmentally responsible actions [28]. For instance, individuals who possess awareness of environmental issues are more likely to purchase eco-labelled products, such as organic foods, and actively participate in recycling programmes. A tangible example of this influence is observed when individuals cease using aerosol hairspray upon recognising the severe consequences of chlorofluorocarbon (CFC) emissions and ozone depletion. EA carries broad implications, extending beyond mere environmental knowledge [33]. It encompasses attitudes, values, and the skills necessary for addressing environmental challenges. In essence, EA serves as the wellspring of an individual’s behaviour, encompassing their attitudes and environmental problem-solving skills. In other words, there exists a correlation between EA and environmental behaviour. The alteration in one’s perception can consequently lead to a corresponding change in behaviour [24, 25, 34-36]. In line with this perspective, empirical research provides concrete evidence confirming that EA directly and strongly influences ERB [25, 34-37].

Within the hotel sector, when examining the attitudes of hotel staff towards environmental management systems, EA is positively reinforced by heightened awareness and comprehension of environmental

issues [38-40]. This increased EA, in turn, prompts employees to apply their knowledge in their daily routines. Simultaneously, employees' perceptions of a hotel's positive Corporate Social Responsibility (CSR) activities exert a significant influence on their behaviour, contributing to the achievement of the hotel's environmental objectives [41]. Moreover, the EA exhibited by hotel guests, coupled with their inclination to choose environmentally responsible or "green" hotels, has a favourable impact on endeavours aimed at conserving water resources and promoting sustainable food practices within hotels, such as the increased use of environmentally friendly ingredients like green onions [42]. H. Cao, et al. (2018) [43] revealed that the enforcement of green strategies and policies tends to be stronger when top management has a higher level of EA. Similarly, F. Wang, et al. (2015) [44] found that managers' EA has a significant positive correlation with institutional ERB. This indicates that the level of EA among management influences the direction and approach the organisation takes towards green activities [45] in the context of hotels. Supporting this perspective, E.S.W. Chan, et al. (2014) [32] highlight that EA directly affects the practice of ERB in accommodation establishments, in addition to its mediating effect on the environmentally responsible practices of the facility.

It is worth noting that while there are two distinct types of ERB (i.e., individual and institutional), much of the existing research predominantly centres on exploring the connection between EA and individual ERB, as outlined in Table 1. The majority of studies pertaining to individual ERB primarily investigate the behaviour of customers, with a limited number of studies delving into the relationship between EA and ERB of hotel managers. Furthermore, it is evident that there is a scarcity of research focusing on the relationship between EA and ERB in the hotel industry. Moreover, there is a paucity of research that comprehensively evaluates the relationship between EA and both types of ERB simultaneously. Additionally, it is essential to highlight that limited research has been conducted within the context of Vietnam. The previous studies primarily concentrate on customer behaviour concerning the selection of eco-friendly products, with few studies addressing the management practices of accommodation facilities in Vietnam.

**Table 1. Summary of previous empirical studies by research problems.**

Research problems	Effect	Studies	Notes
The influence of EA on ERB	+	[24, 25, 32-35, 37-39, 41, 42, 45-51]	
Impact of individuals' ERB on institution's ERB	+	[26, 32, 44]	
Effect of EA on institution's ERB	+	[25, 32, 43, 45, 52]	Indirect impact on the company's/hotel's environmental behaviour
	+	[18, 34, 36, 51, 52]	Comply with the hotel's green policy/national policy
	+	[35, 36, 38]	Impact on green practice intention

Source: Summarised by the authors, 2023.

### **3.2. Foundational theories and analytical methods used in empirical studies on the relationship between environmental awareness and environmentally responsible behaviour**

Table 2 summarises the analytical methods and foundational theories used in empirical studies on the relationship between EA and ERB. It can be seen from the table that studies in this field are not explicitly based on foundational theories, with only a few studies explicitly stating the foundational theories used. Major foundational theories in the field include the Theory of Planned Behaviour (TPB) [34, 44], the Value-Attitude-Behaviour model [37], and the Belief-Action-Outcome (BAO) framework [39]. TPB seems to be the most important foundational theory in this field. Regarding analytical methods, a wide range of methods, from qualitative to quantitative, have been used, although quantitative methods are employed by most studies in this field. In fact, more than 95% of previous studies employed a quantitative approach. In this literature review, only S. Lawton (2016) [53] used a qualitative method. The remaining studies use quantitative methods, including correlation, ANOVA, cluster, regression, path analysis, SEM, and meta-analysis. No studies in this literature review employed a mixed-method approach. Previous studies mostly used one theoretical model in their research. Although a relationship stream can be deciphered through the

model, the reality is much more complicated than the linear trend the model suggests, so a more advanced model that incorporates the relationship is needed to provide a concise explanation of the interacting variables of human behaviour in environmental conservation.

**Table 2. Summary of previous empirical studies by research problem.**

Analytical methods	Studies	Field	Foundational theories
Paths analysis	[25]	In general	-
	[38]	Tourism sector	-
SEM	[24]	In general	TPB
	[37]	Tourism sector	Value-Attitude-Behaviour model
	[39]	Tourism sector	Belief - Action - Outcome framework (BAO framework)
	[48]	In general	-
	[34, 46]	Hotel sector	-
Regression	[44]	In general	TPB
	[35, 43]	In general	-
	[41]	Hotel sector	-
Correlation analysis	[44]	In general	TPB
	[33]	In general	-
Qualitative research	[54]	In general	-
Cluster analysis	[42]	Hotel sector	-
Anova analysis	[24]	In general	-
	[52]	Hotel sector	-
	[34]	In general	-
Meta analysis	[47]	In general	-

Source: Summarised by the authors, 2023.

**3.3. Factors affecting the relationship between environmental awareness and environmental behaviour**

Several experts have reached a consensus on the significant influence of individual characteristics on environmental behaviour [24, 33, 37, 44, 47]. Among these characteristics, sociodemographic factors such as gender, age, and education level have been identified as particularly significant.

Extensive research conducted by sociologists has demonstrated that young, educated women exhibit higher levels of active participation in environmental

protection activities [24, 34, 37, 44, 47]. Education is also recognised as an important factor, with individuals possessing higher levels of education displaying greater ERB, especially in certain countries [24, 37]. Nevertheless, H.M. Arshad, et al. (2020) [35] has reported contradictory findings, challenging the prevailing pattern.

A meta-analytical study focusing on the association between age and environmental sustainability was carried out by B.M. Wiernik, et al. (2013) [47]. This study involved the collection and analysis of data from 1970 to 2010, using a total of 340 articles. The results obtained from the analysis indicate that older individuals tend to demonstrate a greater inclination towards engaging with nature, minimising environmental harm, and conserving both raw materials and natural resources.

Newly appointed CEOs are more engaged and focused on developing their company’s ERB [54]. This can be explained by the fact that when a person is appointed to a new position, there will usually be renewal policies because changes are needed compared to the old term to make an impression [54]. However, if a person is in a management position for a long time, there will be a tendency for “resistance to change” [54]. Such findings are consistent with [44]. Particularly, the seniority of managers is negatively correlated with corporate ERB, although senior managers have higher EA [44]. Thus, it can be seen that the number of years of internal service of top managers will be negatively related to strategic choices related to innovation.

The larger the enterprise, the more likely it is to have better social and environmental responsibility [55]. In addition, a large number of small and medium-sized hotels in many countries have not seen the benefits of implementing corporate social activities due to short-term costs [56, 57]. It can be said that scale also has a significant influence on the relationship between EA and ERB.

The rating of the hotel (number of stars) is also one of the important factors [52]. Specifically, hotels with higher star ratings are more socially responsible, and there is no significant difference between 4-star and 5-star hotels [52].

In summary, individual characteristics such as gender, age, and education level should be considered when studying the relationship between EA and behaviour. At the same time, factors such as the size and class of the hotel should also be considered (Table 3).

**Table 3. Impacts of socio-demographic factors on the relationship between environmental awareness and environmentally responsible behaviour.**

Socio-demographic factors	Impact	Studies	Notes
Gender	ns	[33]	Females tend to have better ERB
	+	[24, 37, 44, 47]	
Age	+	[47]	Meta analytical article
Education	+	[24, 37, 44, 53]	
Years of experience in managing	-	[53]	
Size of institutions	+	[52, 57]	

Notes: ns: non-significant. Source: Summarised by the authors, 2023.

#### 4. Discussion

There are many studies applying different theories to examine ERB. Research on ERB has a large and diverse number of published research works in the fields of education, health, agriculture, business, and tourism, with numerous citations in each of these broad fields. Focusing on the ERB of enterprises, the literature review shows that the number of studies on the ERB of enterprises worldwide is very large. However, in the field of tourism, and specifically the hospitality industry, there is only a small amount of research. In addition, in Vietnam, there is a scarcity of studies addressing the relationship between EA and ERB, particularly in the context of tourism. Most existing research focuses solely on customer behaviour in selecting environmentally friendly products or evaluating intent, such as the intention to choose green products, green hotels, or the intention of hotel staff to practice environmentally friendly behaviours, which are influenced by hotel policies. However, there is a gap in the literature regarding in-depth research on the role of managers in the hospitality industry in Vietnam. Existing studies mainly examine the environmental

intentions or commitments of managers, rather than exploring the specific ERB influenced by managers' EA. Previous research highlights that top management with higher environmental awareness is more likely to assume responsibility for green innovation and allocate resources and capabilities towards green initiatives [43].

Furthermore, in evaluating institutional ERB, prior studies have utilised a self-assessment method, enabling respondents to self-evaluate the level of commitment of the accommodation unit to the specific issue using the Likert scale. Consequently, the obtained results will heavily rely on the subjective assessments of the participants. It is widely acknowledged that individuals tend to inaccurately assess their own capabilities and performance, and tend to overestimate their personal or institutional capacities [58]. This phenomenon of overestimation arises from their limited or non-existent understanding of their own capabilities, despite being fully aware of the solutions found [58].

Previous studies predominantly relied on a single theoretical model for their investigations. While this model was effective in highlighting a certain relationship pattern, it fails to capture the complexity of reality, which goes beyond the linear trend suggested by the model. Consequently, it becomes imperative to develop a more advanced model that incorporates the interconnectedness of variables and offers a comprehensive explanation of human behaviour in environmental conservation.

#### 5. Conclusions and future research directions

In the literature on EA and ERB, the focus on ERB from the perspective of managers has been limited. Particularly in Vietnam, research on ERB within the tourism sector, especially the accommodation sector, has primarily concentrated on the viewpoints of tourists, local residents, and employees. Consequently, further studies should explore the EA and ERB of accommodation managers. To address the existing gaps in the field, future research could consider the following directions:

**Integration of models and theories:** By combining multiple models and theories, researchers can establish interconnected pathways to identify sustainable solutions for various environmental problems arising from different human behaviours.

**Focus on actual behaviour:** Instead of solely examining behavioural intentions, future research could focus on specific behaviours related to ERB, allowing for a more comprehensive understanding of managers' actions and their contribution to environmental strategy implementation.

**Consider the perspective of accommodation managers:** Recognising the managerial role as a significant motivator for the application of environmental strategies, it is crucial to investigate the perceptions and actions of accommodation managers in relation to ERB.

**Simultaneous investigation of individual ERB and institutional ERB:** It would be beneficial to study both individual-level ERB and how it integrates with institutional-level ERB within the accommodation sector, providing a holistic perspective on environmental conservation efforts.

**Inclusion of various types of accommodation facilities:** While research often focuses on hotels, future studies should encompass a broader range of accommodation facilities, such as guesthouses, cottages, and resorts, to gain a more comprehensive understanding of ERB across the industry.

### **CRedit author statement**

Nam-Khang Nguyen-Tri: Writing - Original draft preparation; Que-Nhu Duong: Writing, Reviewing, Formatting and Editing.

### **COMPETING INTERESTS**

The authors declare that there is no conflict of interest regarding the publication of this article.

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