

Analysis of the Influence of Eco-Guilt and Environmental Knowledge on Environmentally Friendly Indonesian Tourist Behavior

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Abstract

Purpose: This research investigates the influences of environmental knowledge and eco-guilt on the environmentally friendly behavior of Indonesian tourist.

Design/methodology/approach: A total of 381 valid questionnaire responses were collected through an online survey. The collected data were processed using SPSS and analyzed using the multiple linear regression technique.

Findings: The results show that eco-guilt does not affect the environmentally friendly behavior of Indonesian tourists, while environmental knowledge influences the environmentally friendly behavior of Indonesian tourists.

Research Limitation/Implications: The limitation of this research stems from the nature of the data collection process. Despite distributing the questionnaire online for broad demographic reach, the majority of the responses were received from young adult tourists residing in East Java

Practical Implications: The findings of this research can serve as a reference for public policymakers/government to formulate a persuasive strategy to raise the sense of eco-guilt, as well as to enhance the facilities and infrastructure for environmental preservation. Facilities and infrastructure available in Indonesia were not adequate in promoting environmentally friendly behavior, while the enforcement of law and regulations by the government was also weak. Visitors who violated the rules were not imposed with penalties.

Originality/value: Different research locations represented variety in the moral standards from different cultures which could have formed tourists' behavior. This research took place in Indonesia, where substantial differences in Western and Eastern moral standards and cultures were observed.

Keywords: environmental knowledge, eco-guilt, environmentally friendly tourist behavior

1. Introduction

Member countries of the Association of Southeast Asian Nations (ASEAN) are dedicated to transforming Southeast Asia into a premier tourist destination that showcases the unique and diverse experiences the region has to offer. This ambition is underpinned by two key strategies outlined in the ASEAN Tourism Strategic Plan 2016-2025: [1] enhancing ASEAN's appeal as a cohesive tourist destination, and [2] promoting sustainable tourism practices and inclusivity, as detailed in the ASEAN Framework on Sustainable Tourism Development in the Post COVID-19 Era (*Executive-Summary_ASEAN-Framework-on-Sustainable-Tourism-Development.Pdf*, n.d., p. 1). The success of this strategic plan depends not only on the efforts of governments, the tourism sector, and local communities but also on the active participation of tourists. However, Indonesia faces significant challenges in adhering to the principles of sustainable tourism—economically, socially, and environmentally. Numerous instances of environmentally harmful behavior by tourists at Indonesian destinations have been reported, including the over visit and resultant damage at the Amaryllis Flower Park in Jogja (*Gara-Gara Pengunjung Selfie Taman Bunga Amaryllis Rusak Parah - Citizen6 Liputan6.Com*, n.d.), 1.6 tons of plastic waste left by climbers in Sembalun-Mount Rinjani National Park (*1,6 Ton Sampah Dibersihkan Dari Gunung Rinjani, Mayoritas Plastik*, n.d.), littering at Bogor Safari Park (*Pelempar Botol Ke Mulut Kuda Nil Di Taman Safari Cisarua Minta Maaf*, n.d.), and disruptive activities in Komodo National Park (*BTNK: Wisatawan Yang Akibatkan Kerusakan Lingkungan Di TN Komodo Bisa Dipidana | Kumparan.Com*, n.d.) and the Ranca Upas-Bandung deer conservation area (*Event Motor Trail Rusak Edelweis Rawa Di Ranca Upas, Bagaimana Perizinannya? Halaman All - Kompas.Com*, n.d.), among others.

According to Mkono & Hughes (2020), instilling a sense of guilt in tourists is crucial for mitigating the adverse environmental impacts of tourism. Guilt is a powerful motivator, encouraging responsible behavior and efforts to remedy negative consequences (Bahja & Hancer, 2021). This emotion can drive tourists towards more eco-friendly actions (Mallett, 2012). Additionally, a cognitive approach focusing on environmental education can further promote sustainable tourist behavior. Studies by Pan et al., (2018) and Abdullah et al. (2019) have demonstrated that environmental knowledge significantly influences the adoption of "green behavior" and participation in eco-friendly activities.

The disparity between ASEAN's goals for sustainable tourism and the current environmental practices of tourists in Indonesia's destinations, alongside the findings of previous research, prompts further investigation into the relationship between eco-guilt and environmental knowledge on sustainable tourist behavior among Indonesians. This research was performed to identify strategies to expedite the adoption of sustainable tourism practices in Indonesia. Quantitative data collected in this research were analyzed using multiple linear regression on SPSS software.

2. Literature Review and Hypothesis Development

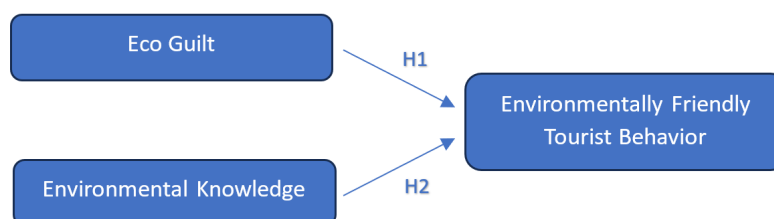


Figure 1 Research Framework

2.1 Eco-Guilt

Eco-guilt is an emotional response that arises when an individual recognizes they have engaged in behavior that negatively impacts the environment (Mallett, 2012); (Bahja & Hancer, 2021). This sentiment typically emerges following the realization that one's actions are either in violation of established norms and regulations or have detrimental effects on others, as explained by (Dahl et al., 2003) In the context of tourism, when visitors, who have the capacity to engage in environmentally considerate behaviors, choose not to do so, they may experience eco-guilt. This is because emotions are closely linked to behavior (Mallett, 2012). The experience of guilt often leads to feelings of regret and a renewed intention to adopt positive behaviors as a form of moral responsibility (Shen, 2018) From these insights, the first hypothesis was proposed as follows.

H1: Eco-guilt affects the influence the eco-friendly behavior of Indonesian tourists.

2.2 Environmental Knowledge

Bahja & Hancer, (2021) describe environmental knowledge as the understanding individuals possess regarding environmental issues and the interplay between human activities and the environment. This knowledge forms the basis for making informed decisions concerning environmental actions. In the realm of tourism, environmental knowledge significantly influences tourist behaviors, such as choosing sustainable modes of transportation (Higham et al., 2016), opting for eco-certified tourism offerings (Gössling & Buckley, 2016) demonstrating a preference for visiting environmentally friendly museums (Han & Hyun, 2017), showing interest in eco-tourism products (Lee et al., 2010) and expressing intentions to stay at green hotels (Wang et al., 2018). Therefore, the second hypothesis was formulated as follows.

H2: Eco-knowledge affects the influence the eco-friendly behavior of Indonesian tourists.

2.3 Environmentally Friendly Tourist Behavior (EFTB)

Song et al. (2012) define Environmentally Friendly Tourist Behavior (EFTB) as the deliberate actions taken by tourists to protect the environment from potential harm by choosing and utilizing eco-friendly products and services. Juvan & Dolnicar (2016) further elaborates on this by stating that behavior aligned with environmental sustainability is characterized by actions that not only avoid harming the environment but also contribute positively to it, both on a global scale and within specific tourist locales. Examples of such environmentally responsible behaviors among tourists include the efficient use of water and electricity, opting for public transport or vehicles that use low-emission fuels, engaging in conservation efforts for nature and wildlife, and minimizing waste generation during their travels.

3. Method

3.1 Research Design

To explore the causal relationship between eco-guilt and environmental knowledge on Environmentally Friendly Tourist Behavior (EFTB) among Indonesian tourists, this research employs a quantitative research approach. The target population consists of Indonesian tourists aged 18 and above who have engaged in travel activities at least three times over the course of the previous year (2022). The research utilizes a convenience

sampling method, a type of non-probability sampling, allowing the researchers to select participants who are readily accessible or able to provide quick responses.

The research identifies one dependent variable, Environmentally Friendly Tourist Behavior (EFTB), and two independent variables: Eco-Guilt (EG) and Environmental Knowledge (EK). The instruments used to measure these variables are derived from the theoretical frameworks established by Mallett (2012) for Eco-Guilt, Bahja & Hancer (2021) for Environmental Knowledge, and Song et al. (2012) for Environmentally Friendly Tourist Behavior. These instruments are further tailored to reflect the specific conditions of tourist destinations in Indonesia and the behaviors of Indonesian tourists.

3.2 Data Collection & Analysis

Data collection for this research was achieved through an online questionnaire using Google Forms, distributed across various WhatsApp groups and Instagram stories from February to March 2023. The questionnaire was structured into two sections: the first capturing respondent profiles and the second assessing research variables on a 1-5 Likert scale. Of the 410 participants, 381 responses were deemed valid after screening and used for further analysis. The data underwent multiple linear regression analysis using SPSS software. Preliminary steps included the validation and reliability testing of the instruments and checking for regression assumptions such as normality, multicollinearity, and homoscedasticity, ensuring the robustness and reliability of the findings derived from the analysis.

3.3 Preliminary Analysis

The processes of validity and reliability testing for research instruments are critical steps to ensure the accuracy and consistency of measurement outcomes, thereby providing a robust foundation for proper interpretation of research results (Ghozali, 2021). Validity testing verifies that the instrument precisely measures the construct it is intended to, requiring that each instrument's *Rhitung* (Pearson correlation coefficient) surpasses the *Rtabel* (significance level threshold). For a degree of freedom (DF) of 279 (N-2) at an α level of 0.05, the threshold *Rtabel* value is 0.1170. According to Table 1, all research instruments exhibit a *Rhitung* value greater than 0.1170, confirming their validity. On the reliability front, an instrument must achieve a Cronbach's alpha (α) value greater than 0.6 to be considered reliable. Table 2 reveals that the Cronbach's alpha values for the three research variables fall within the 0.7 to 0.8 range, thereby affirming their reliability.

Table 1. The Results of Validity Testing

code	Item	R _{count} pearson correlation coefficient	Conclusion
Eco-Guilt (EG)			
EG1	I regret buying souvenirs made from rare animals or plants.	0.266	Valid
EG2	I regret buying bottled water because I forgot to bring my own water bottle.	0.447	Valid
EG3	I regret when I prefer to use private transportation instead of public transportation.	0.296	Valid
EG4	I regret when I destroy environmental life just for social media needs (example: photos by lifting coral reefs and picking flowers)	0.339	Valid
EG5	I regret when I feed animals that should not be fed by tourists (example: feeding monkeys in monkey forest-Ubud)	0.397	Valid
EG6	There is a feeling of guilt when I use another card to stop the AC, TV, and hotel room lights from turning off when I leave the room.	0.420	Valid
EG7	There is a feeling of guilt when I step on the grass that has been marked with a "no stepping on grass" sign.	0.363	Valid
EG8	There is a feeling of guilt when I use too many plastic bags to go shopping	0.455	Valid
EG9	I feel guilty when I watch an animal attraction.	0.371	Valid
EG10	I am ashamed when I litter in public.	0.219	Valid
EG11	I am ashamed when people reprimand me for my actions that can damage the environment (Example: damaging trees, plants, and flowers).	0.272	Valid
Environmental Knowledge (EK)			
EK 1	I know that if I frequently change towels in hotels, there will be a lot of water wasted.	0.176	valid
EK 2	I know that when I dispose of waste according to its type, it will have a good impact on the environment (e.g. disposing of plastic waste in the plastic waste type).	0.494	valid
EK 3	I know that if I litter, it can disrupt the cleanliness of the environment.	0.283	valid
EK 4	I know that if I prefer to use private transportation, it will increase air pollution.	0.456	valid
EK 5	I know that consuming bottled water can increase the amount of plastic waste.	0.415	valid
EK 6	I know that throwing garbage on the beach will damage the marine ecosystem.	0.418	valid
EK 7	I know that staying in an eco-friendly hotel that implements energy-saving policies will reduce global warming.	0.493	valid
EK 8	I know that if wild animals are used as a show, it can damage the animal's instincts (for example: orangutans, lions, tigers, and elephants are used as circus attractions).	0.588	valid
EK 9	I know that feeding animals carelessly will damage the animal's food chain.	0.518	valid
EK 10	I know that excessive use of electricity will cause global warming.	0.506	valid
Environmentally Friendly Tourist Behavior (EFTB)			
EFTB 1	When traveling I will buy products that can be recycled (example: souvenirs).	0.436	valid
EFTB 2	I do not buy souvenirs made from wildlife (e.g. bags made from snakeskin).	0.461	valid
EFTB3	When traveling I always use environmentally friendly transportation (e.g. bicycle, walking and public transportation).	0.570	valid
EFTB 4	When traveling I always choose hotels that apply environmentally friendly principles. (e.g. hotels that implement energy-saving policies, hotels that have chemical-free swimming pools, and use recycled furniture and furnishings)	0.614	valid
EFTB5	When traveling, I always bring my own water bottle.	0.574	valid
EFTB6	When traveling, I always throw garbage in the right place.	0.330	valid
EFTB 7	When at tourist attractions I never pick or damage plants and flowers.	0.310	valid
EFTB 8	When in a hotel I always minimize the use of electricity (for example: turn off the lights, tv, and ac, when not in use).	0.633	valid
EFTB9	When at the hotel I always use water carefully (e.g. when brushing my teeth I will turn off the water).	0.470	valid
EFTB10	When traveling I like environmentally friendly activities, such as releasing turtle eggs and planting mangroves.	0.578	valid
EFTB 11	When traveling, I often go to the nature (e.g. mountain, lake, beach).	0.506	valid

Table 2. The Results of Reliability Testing

Variable	Cronbach α	Conclusions
<i>Eco Guilt</i>	0.702	Reliable
<i>Environmental Knowledge</i>	0.758	Reliable
<i>Environmentally Friendly Tourist Behavior</i>	0.831	Reliable

4. Result and Discussion

The research featured a total of 381 respondents, showcasing a notable demographic diversity as detailed in Table 3. The gender distribution among the respondents was nearly even, with a minor disparity observed between males (188 respondents) and females (193 respondents). A significant portion of the participants fell within the 18-23 age range, with 189 respondents in total, indicating a predominance of younger individuals in the study. In terms of educational background, the majority of respondents had completed their S1 degree (equivalent to a Bachelor's degree). Geographically, the largest group of respondents originated from East Java with 291 respondents.

Table 3. Respondents' Demographic Profile

Item	Categories	Frequency	%
Gender	Male	188	49.3%
	Female	193	50.7%
Age	18-23	189	49.6%
	24-40	113	29.7%
	41-56	72	18.9%
	57-75	7	1.8%
Education Background	Middle School	6	1.6%
	High School	130	34.1%
	Bachelor's Degree	227	59.6%
	Master's Degree	18	4.7%
Location	East Java	291	76.4%
	West Java	31	8.1%
	Central Java	18	4.7%
	Outside Jawa (Bali, NTB-NTT, Sumatera, Kalimantan)	41	10.8%

The results of Multiple Linear Regression Analysis are presented in Table 4, with equation or regression model as follows.

$$EFTB = 16.524 + 0.102 EG + 0.478 EK$$

The regression coefficient analysis for the variables Eco-Guilt (EG) and Environmental Knowledge (EK) indicates a positive relationship between them. Specifically, a 1% increase in Indonesian tourists' eco-guilt is associated with a 0.102 increase in their environmentally friendly behavior. Similarly, a 1% rise in environmental knowledge among Indonesian tourists correlates with a 0.478 increase in their environmentally friendly behavior.

The significance threshold was set at 0.05. The significance value for EG was found to be 0.272, exceeding the 0.05 threshold. Consequently, it can be concluded that the null hypothesis (H0) is accepted, indicating that eco-guilt among Indonesian tourists does not significantly influence their environmentally friendly behavior. This finding suggests that feelings of guilt towards the environment do not substantially motivate Indonesian tourists to adopt more eco-conscious behaviors. This may be due to a perception among these tourists that their individual impact on the environment is negligible, allowing them to easily dismiss any feelings of guilt. Moreover, there appears to be a tendency among Indonesian tourists to rationalize eco-unfriendly behaviors, such as justifying the use of plastic bags at tourist sites with the thought that "other tourists are doing it too," or rationalizing the wasteful use of electricity in hotel rooms with the thought "I've already paid for this."

These results diverge from the findings of studies by Bahja & Hancer (2021) and Bissing-Olson et al. (2016) which identified a significant influence of eco-guilt on tourists' environmentally friendly behaviors. The discrepancy may stem from differences in socio-cultural contexts and mindsets between the populations studied in the Caribbean Islands and Australia, compared to Indonesia, suggesting that the effectiveness of eco-guilt in promoting eco-friendly behavior may vary across different cultural settings.

Table 4. The Results of Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients β	(t) value	Sig.
	B	Std. error			
(Constant)	16.524	4.713		3.506	0.01
<i>EG</i>	0.102	0.093	0.077	1.101	0.272
<i>EK</i>	0.478	0.108	0.309	4.442	0.000

Notes: Dependent variable: EFTB

The significance value of Environmental Knowledge (EK) is 0.00, which is below the threshold of 0.05, leading to the rejection of the null hypothesis (H0). This indicates a significant effect of environmental knowledge on the environmentally friendly behavior of Indonesian tourists. This finding aligns with previous research by Kollmuss & Agyeman (2002) and Latif et al., (2013) which highlighted the crucial role of environmental knowledge in shaping environmental values and determining an individual's environmental behavior. Essentially, environmentally friendly behavior is more likely to occur when individuals are aware of the correct actions to take towards the environment.

Informal interviews with several respondents revealed that their environmental knowledge, including topics such as pollution prevention, animal conservation, and global warming, was acquired as early as junior high school. Additionally, in recent times, the increased visibility of campaigns on social media platforms, such as Instagram, focusing on reducing single-use plastics, promoting renewable energy, protecting wildlife, and encouraging sustainable transportation, spearheaded by influencers, activists, and non-governmental organizations (NGOs), has further contributed to their awareness. This exposure has directly motivated individuals to adopt more environmentally friendly behaviors, underscoring the significant influence of environmental knowledge on promoting positive environmental actions among Indonesian tourists.

Table 5. The Results of Determination Coefficient Test (R²)

Model	R	R Square	Adj R Square	Sid. Error of the estimate
1	0.349	0.122	0.114	6.71295

As seen in Table 5, the coefficient of determination (R-squared) is presented as 0.122, or 12.2%. This indicates that approximately 12.2% of the variance in environmentally friendly tourist behavior (EFTB) can be attributed to the variables of eco-guilt and environmental knowledge. Consequently, this suggests that a substantial 87.8% of the variance in EFTB is accounted for by factors not investigated in this study. It is hypothesized by researchers that among these unexamined factors, perceived consumption effectiveness and environmental attitude play significant roles.

Perceived consumption effectiveness refers to a consumer's belief in the impact of their actions on the environment, including how their engagement can contribute to societal benefits and protect the environment from harm (Ghvanidze et al., 2016). This is particularly relevant when tourists hold the conviction that an individual's attitudes and behaviors towards the environment can influence and modify the environmental conditions (Ren et al., 2021). On the other hand, environmental attitude is defined as an individual's psychological disposition or judgment concerning matters related to nature (Milfont, 2012).

5. Conclusion

This research reveals that environmental knowledge among tourists significantly influences their environmentally friendly behaviors; however, feelings of guilt do not play a similar role. The research finds that Indonesian tourists' guilt over environmentally unfriendly actions is fleeting and fails to shape long-term environmentally friendly behavior. "For guilt to be experienced, one must first recognize that an action is wrong or intends to engage in wrongdoing," Shen comments. Drawing on Shen (2018), this research suggests a model for future studies where eco-guilt serves as a mediating factor between environmental knowledge and environmentally friendly tourist behavior. This model is based on the premise that recognizing an action as a mistake requires an understanding of fundamental right and wrong concepts.

Furthermore, this research identifies a significant gap: 87% of the variance in environmentally friendly tourist behavior (EFTB) is attributed to factors not explored in this study. Future research could also investigate the role of perceived consumption effectiveness in influencing EFTB, especially considering individual perceptions that deem environmentally friendly actions as 'futile' due to perceived minimal contributions or 'insignificant negative impact.'

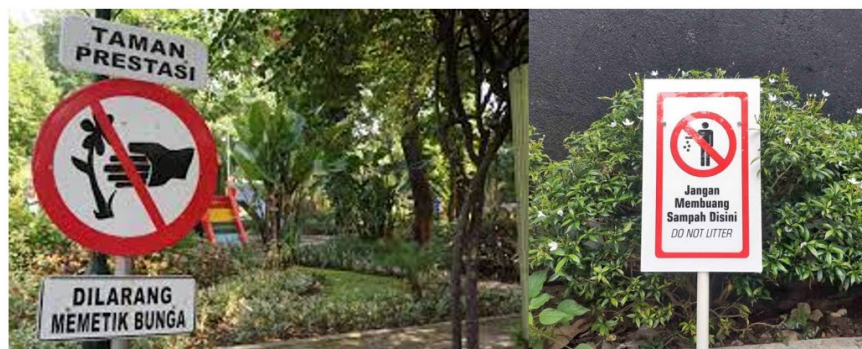


Figure 2 Prohibition sign in Indonesia tourist destination

Researchers are optimistic that fostering environmentally friendly behaviors among Indonesian tourists can emerge from heightened feelings of guilt, motivating an intention to adopt better practices. Currently, in Indonesia, efforts to nurture such feelings of guilt primarily rely on traditional campaigns, marked by prohibitions as illustrated in figure 2. To enhance these efforts, managers of tourist attractions could leverage music or jingles as an innovative method to communicate environmental preservation messages. Music, particularly with an 'easy listening' rhythm and when played repetitively, is considered an effective medium for message absorption by the brain.

Lwin & Phau (2014) have indicated that guilt, when coupled with actionable solutions, tends to encourage individuals to adopt the suggested behaviors. These solutions might include, but are not limited to, enhancing information infrastructure, or offering incentives to tourists demonstrating eco-friendly actions. For instance, practical measures could encompass: [1] the provision of paper cups and water taps/dispensers at attractions, [2] the establishment of central parking zones linked by eco-friendly transport options (such as bicycles or electric shuttles) or walkways to major natural sites, and [3] incentives for tourists who contribute to cleanliness by taking trash with them upon departure. Furthermore, it's crucial to enforce and monitor penalties for behaviors detrimental to the environment. Social sanctions, in particular, are recommended as they can heighten the perpetrator's sense of shame. Such sanctions might involve obligatory participation in clean-up or repair efforts for areas they've polluted or

damaged, with these actions being publicly displayed at tourist sites to serve as a deterrent to others.

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