IMPACT OF ENVIRONMENTALLY RESPONSIBLE FACTORS ON GREEN PACKAGING USAGE INTENTION: AN EMPIRICAL EVIDENCE FROM MARINE TOURISTS IN BANGLADESH

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ABSTRACT

This study investigates the influence of environmental behaviour factors, environmental knowledge, control centre, personal responsibility, and attitude on the intention to use green packaging among marine tourists in Bangladesh. Using the framework of Environmental Responsible Behaviour (ERB) theory, this empirical study explores how individuals' cognitive and attitudinal factors shape sustainable consumption patterns in coastal tourism areas. This study collected a total of 380 data points from visiting tourists in Cox's Bazar marine tourism destinations in Bangladesh through structured questionnaires and face-to-face conversations. After data screening, 365 data were analysed using partial least squares structural equation modelling (SEM-AMOS). Results indicate that environmental knowledge, control centre, personal responsibility and attitude significantly predict green packaging usage intention. The findings provide practical implications for policymakers and tourism marketers to design educational campaigns and behavioural interventions promoting sustainable packaging choices. This study enriches the literature on green consumer behaviour in developing nations and offers insights into sustainable tourism management. The study will improve the researchers' capacity to identify additional external variables for examining the integration of ERB factors, especially regarding marine tourists' usage intentions toward green packaging in Bangladesh.

Keywords: *Green Packaging, Sustainable Packaging, Consumer Environmental Behaviour, Marine Tourists, ERB Theory, SEM-AMOS*

INTRODUCTION

One of the major challenges for the tourism industry in Bangladesh is to promote sustainable consumption practices amid growing concerns over marine pollution and environmental degradation (Kuang, Yang, & Zou, 2024). Cox's Bazar and Kuakata, popular destinations for millions of tourists on the seaside, attract millions of tourists each year, producing significant plastic waste resulting from single-use packaging (Hasan et al. 2024). In turn, when global awareness of environmental protection grows, green packaging is emerging as an alternative to the environmental protection solution of biodegradable, recyclable, or reusable paper products (Shaikh & Hyder, 2023). It is the behavioural nature of consumer engagement with such packaging that most closely relates to the role of environmental knowledge, attitude, and perceived responsibility (Uddin, 2020). The Environmental Responsible Behaviour theory suggests that environmental consciousness is made up of internal cognitive and affective factors that affect decisions (Mamun, 2023). In Bangladesh, such relationships are crucial as marine tourists' consumption patterns directly affect coastal ecosystems (Hasan & Alam, 2024). Thus, this study is designed to empirically investigate how environmental knowledge, control centre, personal responsibility and attitude affect the intention to use green packaging in marine tourists in a bid to provide empirical information about sustainable tourism.

The growing seaside tourism sector in Bangladesh, marked by notable GDP growth, simultaneously exacerbates pollution due to the utilization of non-biodegradable packaging (Khan, Mehmood, Khan, & Khan, 2025). Prominent tourist destinations, such as Cox's Bazar and Saint Martin's Island, encounter significant environmental issues stemming from rubbish accumulation, which endangers marine biodiversity and the viability of tourism (Hasan & Aziz, 2024). This study examines the

relationship between visitors' preferences for eco-friendly packaging and environmentally responsible behaviours (ERB), as contextualized by the Environmental Responsible Behaviour hypothesis. This theory associates pro-environmental behaviours with characteristics including awareness, moral obligation, perceived behavioural control, and favourable attitudes (Hasan & Aziz, 2024). The research examines the impact of marine visitors' environmental knowledge, perceived control, personal responsibility, and attitudes on their acceptance of eco-friendly packaging. This investigation also fills a notable gap in Bangladesh's green marketing literature by emphasizing the emotional and moral aspects that influence sustainable consumption in tourism. Findings from awareness campaigns suggest that proactive consumers, motivated by awareness and a sense of duty, frequently make ecologically advantageous decisions (Uddin, 2020). Authorities, tourism operators, and environmental organizations can use the findings to formulate policies that promote economic viability and ecological sustainability through behaviour-oriented interventions.

Consumers are increasingly aware of environmental issues; green packaging remains limited to Bangladeshi tourists (Alamgir, Tat, & Saad, 2025). Environmental pollution originating from plastic-based packaging continues to threaten marine ecosystems (Islam, 2015). For instance, in government green initiatives, consumers do not tend to perform well despite a lack of environmental knowledge, low perceived behavioural control and limited personal responsibility (Ehasan, 2019). Among recent Bangladesh studies, one of the strongest indications that people are concerned about environmental conditions is that the only positive effects of concern for the environment are not environmentally friendly practices (Uddin, 2020). The "attitude-behaviour gap" or "attitude gap between awareness and action" is often an obstacle to green packaging use. Research focused specifically on the behaviour of marine tourists regarding green packaging is inadequate (Hossain, Nekmahmud, & Fekete-Farkas, 2022). The temporary patterns of behaviour among tourists are valuable lessons for understanding psychological factors, such as internal control and perceived responsibility, that motivate eco-friendly decisions (Wang et al., 2018). In Bangladesh, this gap should be addressed to achieve Sustainable Development Goals (SDGs) relating to responsible consumption and marine conservation. The purpose of this study is to investigate how environmental behaviour influences green packaging intention among marine tourists in Bangladesh.

This study relates to sustainable consumer behaviour in tourism both theoretically and practically. In theory, this conceptualization is extended to the Environmental Responsible Behaviour model with information, control centre, personal responsibility, and attitude regarding how marine tourists respond to green packaging (Akter & Islam, 2023). There are very few empirical studies in Bangladesh that have examined such relationships within tourism, and especially by coastal travellers who directly interact with marine ecosystems (Alamgir et al. 2025). The present study will assist policymakers, tourism operators and marketers in creating targeted educational and promotional campaigns for eco-conscious consumption. This research focuses on the behavioural effects influencing green packaging use, which is particularly important for involvement in reducing plastic waste in the marine tourism destinations (Shaikh & Hyder, 2023). Hence, the study supports Bangladesh's national commitment to sustainable tourism development under the SDGs to provide information with a framework to design environmentally responsible tourism models. This study gives an observation to conserve marine ecosystems and increase the overall sustainability of the tourism industry in Bangladesh through green packaging usage behaviour.

LITERATURE REVIEW

Environmental Knowledge

Environmental knowledge consists of the understanding of environmental issues and their impact on guiding positive behaviour goals (Joshi & Rahman, 2021; Panwanitdumrong & Chen, 2021). By increasing environmental awareness about pollution impact and reducing the use of green products in green packaging, Zheng et al. (2020) point to greater environmental knowledge to help consumers adopt green alternatives (Shaikh & Hyder 2023; Lee, Jan, & Yang, 2013). In Bangladesh and other developing countries, people who have higher environmental awareness are more likely to buy products made from biodegradable or recyclable packaging (Hasan et al., 2024). On top of that, environmental education empowers cognitive awareness and encourages responsible consumption patterns based on the assumption that knowledge precedes behavioural change (Mamun, 2023; Han & Yoon, 2015). As a result, environmental knowledge in tourism, especially that involving the Mediterranean, is very important in the context of tourism, and those with a clear awareness about marine pollution are more pro-environmental than those without it. (Alamgir et al., 2025; Dolnicar & Grün, 2009). This information helps bridge the gap between concern and behaviour, creating understanding of how individual behaviours contribute to ecological destruction (Uddin, 2020; Bamberg & Möser, 2007). Therefore, it is hypothesised that more eco-conscious tourists will have stronger intentions to use green packaging. This indicates the role of eco-literacy for coastal tourism, encouraging informed decisions to eliminate marine waste in the future.

H1: Environmental knowledge has a significantly positive impact on tourists' intention to use green packaging.

Control Centre

The concept of control centre, from locus of control theory, refers to the believer in their ability to directly influence the environmental outcome through action (Sahabuddin et al., 2021; Kollmuss & Agyeman, 2002). When an internal control centre knows that behaviours can directly impact environmental preservation, it increases engagement with eco-friendly practices (Ehasan, 2019; Han, 2015). In contrast, people with a foreign control centre associate environmental problems with outside forces such as government or industry, reducing individual accountability (Islam, 2015; Liobikienė & Poškus, 2019). Empirical studies have suggested that an inner locus of control, highly relevant to environmental responsibility and green consumption, is much more likely to predict how well people behave on the outside (Uddin, 2020; Chen & Chang, 2013). Highly evoked behavioural control tourists can be empowered to make sustainable decisions, including the selection of green packaging (Hasan et al., 2024 Liu, Qu, & Huang, 2013). In Bangladesh's tourism environment, human control is an important psychological factor that forces voluntary pro-environmental action (Alamgir et al., 2025; Stern, 2000). This is reinforced by the ERB framework by recognising

control beliefs as the primary factors that control behaviour formation. By enhancing people's sense of control through education and participatory activities, green packaging adoption can also be strengthened. This highlights the role of empowerment-based approaches, such as the participation of tourists in local conservation work, that may help internal control and responsible consumption in marine tourism areas.

H2: The Control centre has a significantly positive impact on tourists' intention to use green packaging.

Personal Responsibility

Personal responsibility means the moral obligation to protect the environment by conscious action (Mamun, 2023; Han, Hwang, Lee, & Kim, 2019). In the ERB context, responsibility is one of the antecedents to sustainable behaviour, connecting moral norms and behavioural intentions. Tourists who view themselves as responsible for environmental conservation are more likely to use green consumption (Karmoker & Ahmed, 2021; Kim & Choi, 2005). These findings in Bangladesh show that perceived personal responsibility impacts participation in eco-friendly practices such as waste management and sustainable product selection (Uddin, 2020). Marine tourists whose actions are contributing to beach littering or pollution are more likely to adopt green packaging in order to reduce their impacts (Hasan et al., 2024; Gifford & Nilsson, 2014). Conversely, if business or government agency responsibilities are externalized to businesses, the pro-environmental intentions decline (Ehasan, 2019; Chen, 2020). So, developing self-belief among tourists can contribute to voluntary green behaviour. Some campaigns that focus on individual contribution to marine pollution reduction, community-based initiatives, can lead to responsible choices. Also, the inclusion of responsibility messaging in tourism marketing and environmental education can further emphasise a sense of ownership in environmental outcomes, promoting the consistent use of eco-friendly packaging strategies.

H3: Personal responsibility has a significantly positive impact on tourists' intention to use green packaging.

Attitude

Attitude is a description of what people do and how they perceive their performance of a behaviour (Jayasinghe, 2022; Wu & Lin, 2017). In general, a well-accepted attitude towards environmental protection gives an advantage in being more likely to take on eco-friendly practices. The role of attitude in determining behavioural intentions is presented frequently in many studies, and therefore, the impact of both environmental knowledge and behavioural intention is also significant (Igbomor, 2024). In Bangladesh, the positive attitudes toward sustainability tend to encourage buyers to buy green products more positively (Uddin, 2020). This relation to attitude-behaviour also holds in tourism, where ecologically conscious tourists prefer eco-labelled products and sustainable accommodation (Alamgir et al., 2025; Rahman, Park, & Chi, 2015). This theory supports this view, arguing that attitudes that are acquired from knowledge and responsibility influence behavioural intentions. In developing countries, attitudinal change is often hindered by a lack of trust in product promises and limited access to green alternatives (Hasan et al., 2024. The positive attitude efforts require trusting information, consistent eco-branding, and visible behaviour models among tourists. In this sense, positive environmental attitudes are assumed to influence visitors' use of green packaging during seaside visits.

H4: Attitude has a significantly positive impact on tourists' intention to use green packaging.

Green Packaging Usage Intention

Green packaging use intention refers to the consumer's willingness to choose environmentally responsible packaging options if available alternatives (Ling et al., 2021). Shaikh & Hyder (2023) examine its cognitive, attitudinal and contextual influences. In particular, they have demonstrated that intention is a central predictor of actual green consumption behaviour through the Theory of Planned Behaviour (Ajzen 1991). Green packaging is still growing in popularity because it has been limited in scope due to poor awareness, price and availability in Bangladesh (Stamenković & Demonja, 2022). But growing attention to the environment and social marketing is slowly shifting consumer attitudes (Uddin, 2020). In the case of marine tourists, green packaging is not only environmentally friendly and helps to preserve the aesthetic and ecological value of coastal sites (Alamgir et al., 2025). Previous empirical evidence suggests that intention can be strengthened when someone perceives green packaging to be useful for reducing waste and protecting marine life (Hasan et al. 2024). This is why it is important to understand antecedents of this intention, so effective strategies can be devised to reduce pollution if the behavioural change associated with tourism consumption reflects behavioural change to combat pollution.

Theoretical Justification

Environmental Responsible Behaviour is a theory that discusses how the cognitive, attitudinal, and situational factors affect individuals' environmental responsible actions (Hines, Hungerford & Tomera, 1986). This study suggests that the precondition of pro-environmental intentions and behaviours is in environmental knowledge, perceptions, personal responsibility and attitudes related to environmental awareness and control. The use of green packaging is a deliberate behaviour outcome mediated by psychophysiological and moral factors within this framework (Haque, Sungsuwan, & Sanglimsuwan, 2021). In this study use ERB theory to further clarify the way in which marine tourists' cognitive awareness and emotional connection to the environment can be used to produce sustainable consumption. When the process of internalizing these processes, policy makers and tourism managers can identify the behavioural levers that will drive eco-friendly practices (Trimo et al., 2023). The ERB theory is therefore a comprehensive foundation for studying the relationship between knowledge, control, responsibility, attitude, and green packaging intention.

Research Framework

The central elements of this research analysis are four environmental behaviour factors: environmental knowledge, control centre, personal responsibility and attitude as predictors of green packaging usage intention based on ERB theory (Hines, Hungerford & Tomera, 1986). Psychological and moral factors enable the cognitive base on environmental knowledge, the controlling centre and personal responsibility as the cognitive basis (Alam & Rashid, 2019). Attitude is significant in communicating accountability into behavioural intention. Using this model, this study proposes a causality where environmental knowledge, perceived control, personal responsibility and attitude indicate usage intention for the green packaging. Personal responsibility reinforces that relationship by establishing a moral obligation to maintain the behaviour. Together, these constructs form a one-dimensional model of the impact of internal and external factors on marine tourists' eco-friendly intentions in Bangladesh.

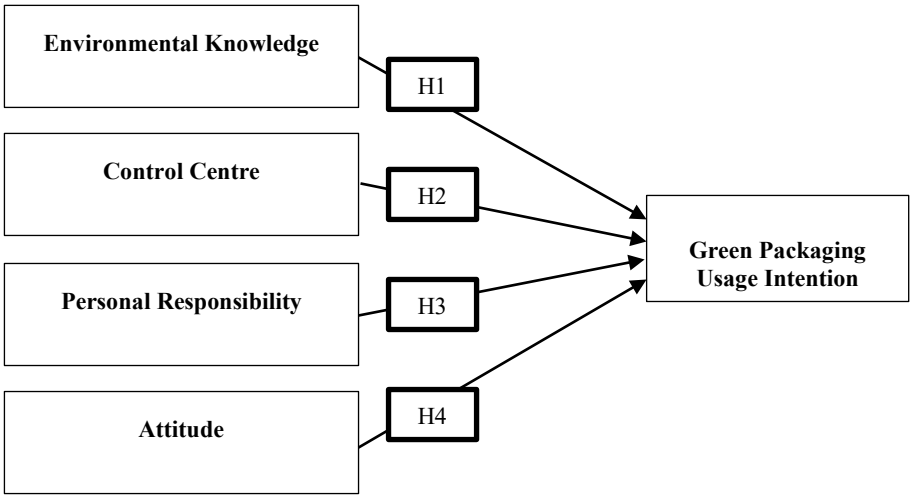

Figure 1: Research Framework

RESEARCH METHODOLOGY

Sampling

This research has utilized "Environmentally Responsible Behaviour" frameworks to determine marine tourists' usage behaviour towards green packaging in Bangladesh (Hines, Hungerford & Tomera, 1986). Therefore, this study aims to clarify the definition and impact of the ERB theory to investigate the impact of environmentally responsible factors on green packaging usage intention from the Bangladeshi marine tourist perspective.

A non-probability purposive sampling method was employed to select participants due to an unidentified population. The participation of respondents in this study is completely voluntary, which was essential to guarantee their candour. Participants were instructed to evaluate four distinct variables according to their perceived factors utilising a 5-point Likert scale, with 1 indicating Strongly Disagree and 5 indicating Strongly Agree. Each question in the poll was originally formulated in Bangla and subsequently transcribed into English.

Data Collection

The research population comprises tourists visiting the marine tourism region of Bangladesh, specifically the Cox's Bazar maritime destination. This research has examined Kolatoli Beach, Himchhari, Sonadia, Moheshkhali, and Saint Martin Island for data collection, as these are the five most frequented coastal attractions in the Cox's Bazar region (Hasan & Alam, 2024). A total of 380 questionnaires were gathered from the Cox's Bazar region in Bangladesh by physical distribution, with 365 being selected for data analysis following data screening. This research gathered data in June and July 2025. Data was gathered by the distribution of face-to-face questionnaires.

DATA ANALYSIS AND FINDINGS

Tools Used

SPSS version 26.0 was utilized in order to provide an analysis of the demographic profile. To begin, a descriptive analysis was carried out in order to establish the demographic profile of the individuals who responded to the survey. Then, for this investigation, SPSS-AMOS software version 26.0 was utilized to validate both the measurement model and the structural model in order to evaluate the hypothesis.

Demographic Profile

Table 1 displays the demographic data gathered from tourists who have visited the maritime tourism sites in Cox's Bazar in Bangladesh. A total of 380 questionnaires were sent; however, only 365 were retained for further analysis after eliminating 6 with incomplete data. Nine participants did not meet the study's criteria. Table 1 reveals a greater quantity of male responses in contrast to female responses. Among the study participants, 253 (69.3%) identified as male, while 112 (30.7%) identified as female. The primary age groups were 20 to 29 years (12.1%), 30 to 39 years (46.6%), 40 to 49 years (29%), 50 to 59 years (10.4%), and 60 years and older (1.9%). The participants reported the following levels of educational accomplishment: primary (6.6%), secondary (22.2%), and tertiary (71.2%). Students constitute 22.2% of the respondents, followed by individuals employed in private services at 40%, businesspersons at 6%, government employees at 23.8%, and others at 7.7%. Ninety-one percent of respondents reported awareness of green packaging, whilst nine percent did not. A significant 82.7% of respondents lack experience with green packaging. In contrast, the predominant number of respondents (344) indicated a willingness to use green packaging, which represents 94.2%.

Table 1: Demographic Profile

Measures	Items	Frequency	Percentage
Gender	Male	253	69.3
	Female	112	30.7
Age	20-29	44	12.1
	30-39	170	46.6
	40-49	106	29.0
	50-59	38	10.4
	60 and above	7	1.9
Marital Status	Single	191	52.3
	Married	97	26.6
	Divorced	52	14.2
	Widowed	25	6.8
Educational Qualification of the Respondents	Primary	24	6.6
	Secondary	81	22.2
	Tertiary	260	71.2
Professional Status of the Respondents	Student	82	22.5
	Private Service	146	40.0
	Government Job	87	23.8
	Business	22	6.0
	Others	28	7.7
Awareness of Green Packaging	Yes	332	91.0
	No	33	9.0
Green Packaging Usage Experience	Yes	63	17.3
	No	302	82.7
Green Packaging Usage Intention	Yes	344	94.2
	No	5	1.4
	Maybe	16	4.4

Exploratory Factor Analysis (EFA)

The initial phase in implementing efficient Structural Equation Modelling (SEM) is Exploratory Factor Analysis (EFA). Exploratory Factor Analysis (EFA) is a technique widely utilised in social science research. This analysis enables researchers to discern relevant findings from a particular data set concerning a single element or factor (Hair et al., 2014). Moreover, Hair et al. (2012) contend that exploratory factor analysis (EFA) is an essential technique since it enables the consolidation and classification of several variables into more manageable groups. Kline (2018) asserts that exploratory factor analysis (EFA) is a commonly used statistical method for data analysis, mostly applied to simplify data by clarifying the interrelationships among a set of variables based on their important associations. The principal component extraction method utilising varimax rotation has been applied to discern the essential components. The principal aim of EFA is to distil huge data sets into several variables, including factor loadings, covariance, and correlation estimates. The primary objective of doing EFA is to evaluate the requisite number of items for each component, necessitating a comprehensive procedure.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.927**
Bartlett's Test of Sphericity	5558.503	**5558.503**
	435	**435**
	.000	**.000**

The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity were initially performed, as illustrated in Table 2. Tabachnick and Fidell (2007) assert that the Kaiser-Meyer-Olkin (KMO) value must lie between 0 and 1, with a minimum acceptable threshold of 0.60 and a significant p-value ($p < .05$) necessary. The present study demonstrates a Kaiser-Meyer-Olkin (KMO) value of 0.927, signifying that the sample adequacy criteria have been fulfilled. A significant result from Bartlett's test of Sphericity revealed the presence of sufficient interconnection among variables. The positive results for both KMO and Bartlett's Test of Sphericity indicate that the researcher can conduct factor analysis effectively, as demonstrated in Table 2.

Rotated Component Matrix

Table 3 displays a notable rotation factor as evidenced by the rotated component matrix. Rotating factor loadings is essential for the extraction of several factors. We employ Varimax to analyse this factor and ascertain whether the orthogonal rotation method reduces the number of variables. The subsequent stage involves examining the questions associated with the same factor to discern analogous themes and prevent conflating distinct variables. The rotating component matrix provides the clearest representation of item allocation to each factor, as distinct factors must emerge during multiple rounds of factor analysis, resulting in the elimination of certain items that align with multiple factors.

Table 3: Rotated Component Matrix

Factors	**Component**				
	1	**2**	**3**	**4**	**5**
Env_Know1	.659				
Env_Know2	.726				
Env_Know3	.708				
Env_Know4	.749				
Env_Know5	.720				
Env_Know6	.724				
Con_Cen1		.751			
Con_Cen2		.706			
Con_Cen3		.728			
Con_Cen4		.670			
Con_Cen5		.780			
Con_Cen6		.735			
Per_Res1			.693		
Per_Res2			.794		
Per_Res3			.789		
Per_Res4			.710		
Per_Res5			.648		
Per_Res6			.696		
Attitude1				.674	
Attitude2				.700	
Attitude3				.685	
Attitude4				.598	
Attitude5				.638	
Attitude6				.686	
Usage_Int1					.603
Usage_Int2					.709
Usage_Int3					.613
Usage_Int4					.686
Usage_Int5					.627
Usage_Int6					.659
Extraction Method: Principal Component Analysis. *Rotation Method: Varimax with Kaiser Normalization.*					
a. Rotation converged in 6 iterations.					

Confirmation Factor Analysis (CFA)

Measurement Model

Before hypothesis testing, the evaluation model was assessed for suitable factor loadings and goodness-of-fit indices. The proposed measurement model was evaluated using SPSS-AMOS software (Figure 2).

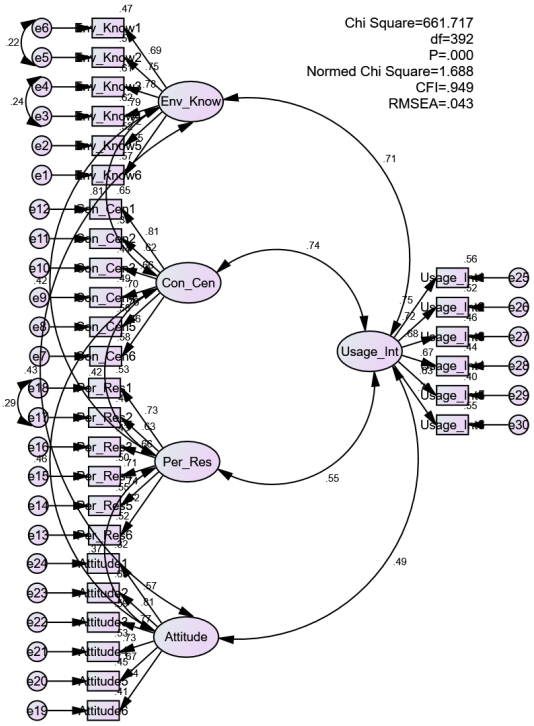

Figure 2: Measurement Model

The AMOS-based confirmatory factor analysis (CFA) was employed to assess the structural integrity of the 30-item scale. The five latent constructs were thought to be connected. Three indicators were removed from the measurement model because their loadings were below 0.5, according to the modification indices supplied by AMOS. Hair et al. (2012) assert that a loading value of 0.5 is considered insignificant. Table 2 presents the comprehensive model fit to ensure effective alignment. We examined the nine goodness-of-fit indicators. Hair et al. (2014) suggest that for optimal model fit, the RMSEA should be below 0.05, and the GFI and CFI values should be above 0.90. Table 4 is considered suitable and possesses an acceptable value for k^2/df. The TLI should exceed 0.90. The 30-item scale has an adequate level of model fit.

Table 4: Model Fit

x^2	df	x^2/df	GFI	RMSEA	CFI	IFI	TLI
661.717	392	1.688	.904	.043	.949	.949	.943

Discriminant and convergent validity were assessed to evaluate the measurement model. The assessment of convergent validity was conducted by the calculation of composite reliability. In accordance with Chin's (1988) advice, a minimum acceptable threshold of 0.7 was suggested to attain satisfactory composite dependability. Babin et al. (2008) assert that the AVE value must be 0.5 or more for optimal outcomes. The current study's AVE computation indicates a favourable outcome. The average valid estimate (AVE) was calculated by squaring the standardised loadings (Figure 2) of each build item, summing all construct items, and dividing the total by the number of indicators. All AVE values exceeded 0.5, with a minimum of 0.511 and a maximum of 0.560. The results demonstrate that the CR spans from 0.852 to 0.884, exceeding the acceptable threshold of 0.7. Consequently, we may assert that all construct items exhibited strong dependability based on the findings of the current empirical testing.

Table 5: Confirmation Factor Analysis (CFA) Report

	CR	AVE	MSV	MaxR (H)	Env_Know	Con_Cen	Per_Res	Attitude	Usage_Int
Env_Know	0.884	0.560	0.658	0.887	**0.749**				
Con_Cen	0.865	0.519	0.658	0.874	0.811***	**0.721**			
Per_Res	0.852	0.515	0.298	0.855	0.415***	0.416***	**0.712**		
Attitude	0.852	0.511	0.236	0.866	0.427***	0.462***	0.373***	**0.702**	
Usage_Int	0.852	0.505	0.553	0.855	0.706***	0.744***	0.545***	0.486***	**0.700**

Discriminant validity may only be confirmed once it is demonstrated that no link should exist between the measurements (Hair et al., 2014). The Fornell-Larcker test and the Heterotrait-Monotrait correlation ratio (HTMT) serve to measure discriminant validity by evaluating cross-loads among constructs. The square root of the AVE values in relation to the correlations of the latent variables serves as an alternative method for assessing discriminant concept validity (Fornell & Larcker, 1981). The discriminant validity is exceptional, since the squared Average Variance Extracted (AVE) for each component surpasses the cumulative correlations with other components, as illustrated in Table 5.

Structural Equation Model (SEM)

This study evaluates four hypotheses to investigate the causal pathways. Table 6 displays the outcomes of hypothesis testing based on the proposed structural model. All four tested hypotheses exhibited a statistically significant value ($p < 0.05$). The R^2 value was computed. Consequently, environmental knowledge accounted for 20.9% of the variation (R^2=0.209), control centre for 36.8% (R^2=0.368), and personal responsibility for 21.8% (R^2=0.218). Meanwhile, attitude accounted for 11.4% of the variance (R^2=0.114) in their inclination to utilise green packaging.

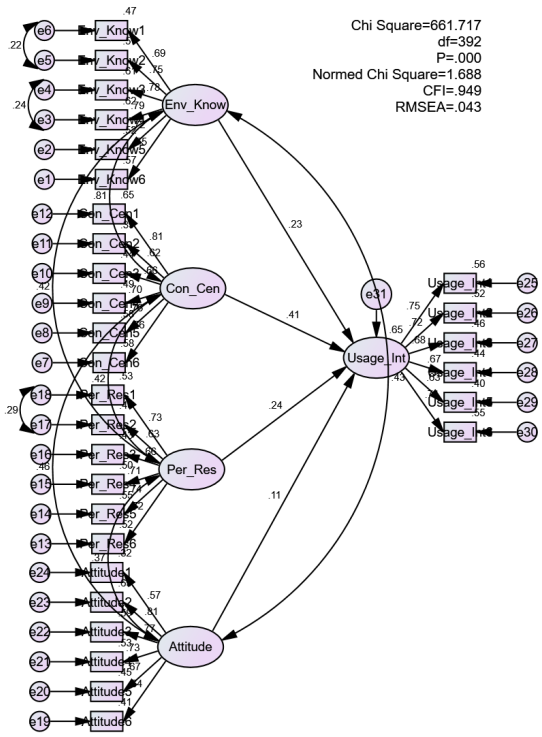

Figure 3: Structural Model

Hypotheses Testing

The findings of the hypotheses indicate that H1, which posits a substantial positive correlation between environmental knowledge and intention to use green packaging, is substantiated with β = 0.209; SE = 0.082; CR = 2.537. Correspondingly, H2 and H3 are endorsed according to the β value, which is 0.368 for H2 and 0.218 for H3, respectively. H2 displays an SE of 0.085, a CR of

4.314, and a substantial P value, demonstrating that the control centre positively and significantly influences the usage intention. A comparable situation is seen for H3, with SE=0.48 and CR=4.539.

Table 6: Regression Weights

			Estimate	S.E.	C.R.	P	Label
Usage_Int	<---	Env_Know	.209	.082	2.537	.011	
Usage_Int	<---	Con_Cen	.368	.085	4.314	***	Minimum was achieved Chi-square = 661.717 Degrees of freedom = 392
Usage_Int	<---	Per_Res	.218	.048	4.539	***	Probability level = .000
Usage_Int	<---	Attitude	.114	.053	2.155	.031	

Thus, H3 is validated by demonstrating a positive correlation between personal responsibility and the intention to utilise green packaging. H4, which pertains to attitude, also shows a significant positive correlation with the intention to use, as indicated by β = 0.114; SE = 0.053; CR = 2.155.

Table 7: Hypothesis Testing

Hypothesis	Result
H1: Environmental knowledge has a significantly positive impact on tourists' intention to use green packaging.	**Accepted**
H2: The Control centre has a significantly positive impact on tourists' intention to use green packaging.	**Accepted**
H3: Personal responsibility has a significantly positive impact on tourists' intention to use green packaging.	**Accepted**
H4: Attitude has a significantly positive impact on tourists' intention to use green packaging.	**Accepted**

DISCUSSION

The present research examines the intention to use green packaging, influenced by environmental knowledge, control centre, personal responsibility and attitude among marine tourists in Bangladesh. This study not only investigates the legitimacy of integrating environmentally responsible behavioural components from the Bangladeshi perspective but also analyses the impact of environmental knowledge, control centre, personal responsibility and attitude on tourist intention to use green packaging in marine tourism destinations in Bangladesh, especially in Cox's Bazar region. The study's results unequivocally indicate that tourists' environmental knowledge will enhance their readiness to use green packaging in marine tourism destinations (H1 is supported). The outcome aligns with prior research conducted by Singh et al. (2023) and Sabuz et al. (2021). Secondly, the control centre has been identified as a substantial factor influencing intention to use green packaging (H2 is supported). Increased personal responsibility correlates with a greater propensity to use green packaging in Bangladesh. Tourists in the maritime region believe that personal responsibility is vital for all consumers. Sultana et al. (2020) and Uddin (2020b)'s prior research confirmed the outcome. Personal responsibility is also determined to be significant in influencing preference to use (H3 is supported). The outcome was determined to be consistent with the previous research conducted by Manzoor (2019) and Chowdhury & Hossain (2022). Conversely, the attitude was found to have a substantial effect on consumers' usage intention towards green packaging (H4 supported). The study contradicts previous research by Islam & Rahman (2021), Rahman & Hasan (2020) and Akter & Islam (2023). ERB theory indices, such as environmental knowledge, control centre, personal responsibility, and attitude, are highly correlated with the green packaging usage intention among maritime tourists.

This study is complementary evidence supporting the Environmental Responsibility Behaviour theory by demonstrating that environmental knowledge, personal responsibility, locus of control, and attitude, in effect, affect marine tourists' intention to use green packaging in Bangladesh. According to Hasan and Aziz (2024), environmentally necessary consumption habits are likely to be maintained by environmentally conscious people as an awareness of the ecological consequences increases their personal accountability to environmental conditions. The results agree with Panwanitdumrong and Chen (2021), emphasising the fact that perceived behavioural control and environmental attitudes constitute important factors for responsible tourism behaviour. The belief that behavioural intentions stem from moral responsibility is further reinforced by ethical norms and consumer ethics, as shown by Hossen et al. (2024). Thus, awareness development, internal control belief and positive environmental attitudes will substantially increase tourist green consumption practices. In addition, ERB theory provides an integrated set of psychological, moral, and behavioral mechanisms, both theoretically and practically, that serves as theoretically and practically in supporting sustainable tourism and packaging policies in developing coastal areas.

LIMITATIONS AND RECOMMENDATIONS

The study presented next emphasises specific limitations that require further investigation. This study was exclusively conducted in Cox's Bazar marine tourism destination in Bangladesh, suggesting that future researchers could enhance the generalisability of their findings by incorporating data from other regions of the country, such as Saint Martin, Moheshkhali, Patenga Beach, and Kuakata, among others. Secondly, another concern is the omission of the impacts of mediating and moderating variables. Future studies may examine the influence of mediating and moderating variables on the proposed model to tackle these problems. Relevant

researchers may also include client demographic factors like as gender, age, and ethnicity as moderators. This study has concentrated on mixed generations; subsequent research may include more generations, such as Generation Z, X, Y, or the millennial cohort. This study concentrated on a restricted set of elements within ERB theory components; however, future research could include supplementary factors such as climate change, resource efficiency, biodiversity, community engagement, consumer welfare, transparency, and ethical conduct. Future researchers may examine specific biodegradable and sustainable packaging, while this study mostly focused on green packaging in general. This quantitative survey utilises a standardised questionnaire that restricts respondents from expressing their opinions on specific matters. Future scholars may utilise qualitative and quantitative methodologies, or solely qualitative analysis, to investigate current occurrences. Comparing consumer data from many nations or generations would substantiate the study's methodologies across varied cultures and circumstances, perhaps benefiting future research.

IMPLICATIONS

The article offers a set of recommendations for the regulatory authorities overseeing the green packaging sector in Bangladesh. The study demonstrated that ERB elements, including environmental awareness, control centre, personal responsibility, and attitude, affect marine visitors' use of green packaging. Therefore, stakeholders in bio-based packaging should emphasise marine visitors when developing an operational plan. Therefore, governments and pertinent agencies must prioritise public awareness to increase the inclination towards sustainable packaging, as individual responsibility and mindset also affect the willingness to adopt such practices. The study demonstrated that control centre and environmental expertise empower packaging authorities to formulate policies that promote the use of sustainable packaging among maritime visitors.

Some other countries, especially those who depend on coastal or eco-tourism, can benefit from lessons from the marine tourism situation in Bangladesh. This research suggests the need for developing environmental knowledge and personal responsibility as a means of fostering green behaviour change among tourists. Indonesia, Thailand and Indonesia, as well as other countries, could use similar ERB-based strategies to encourage more ecological engagement in tourists by increasing their environmental engagement (Panwanitdumrong & Chen, 2021). As in Bangladesh, environmental education is one means for balance between economic growth and ecological preservation by integrating tourism services and packaging policies. With Bangladesh’s approach, policy makers can draw specific awareness campaigns that will inspire targeted consumer awareness, encourage eco-friendly consumer choices, and promote sustainable packaging industries that are aligned with national waste management policies. This study is thus a transferable model of a country looking to merge tourism development with sustainable consumption practices in behavioural theory.

CONCLUSION

In conclusion, environmental awareness, individual accountability, and a constructive mindset are becoming increasingly significant for marine tourists regarding their aim to utilise green packaging. Utilising SPSS for demographic analysis and SEM-AMOS for hypothesis testing, all hypotheses were substantiated by evidence indicating that various attributes were linked to marine visitors' utilisation of sustainable packaging. The principal reason for this heightened awareness is that more consciousness renders the adoption of greener alternatives more appealing to individuals. The intention to utilise green packaging highlighted the significance of personal responsibility and sustainability in enhancing consumer desire to adopt such practices, as the transparency of business operations rendered consumer attitudes more pronounced, alongside increased environmental awareness. The control centre was proven to bolster tourists' confidence by linking ethical standards to an increased readiness to engage. Linking ERB principles facilitates a comprehensive approach to fostering sustainable consumption behaviours, and governments and businesses could leverage this equilibrium in their marketing and educational initiatives to advocate for green packaging and further Bangladesh's sustainable future.

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