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Abstract

Purpose - This study employs the norm activation model (NAM) and the elaboration likelihood model (ELM) to investigate the drivers of consumers' buying intent (BUI) for eco-friendly products (EFP). The primary emphasis is on eco-consciousness, which includes environmental literacy (ENL) and environmental concern (ENC). The research further examines the mediating role of ENC in the relationship between ENL and BUI while also considering the sequential mediation effects involving both ENC and eco-responsible practices (ERP). Additionally, the study explores the moderating influence of attitude (ATT) on the relationship between ENC and ERP and its effect on ERP and BUI.

Design/methodology/approach - Employing purposive sampling, 412 online survey responses were statistically analysed using partial least squares structural equation modelling (PLS-SEM).

Findings - The findings of this study demonstrate that ENL exerts a significant and positive influence on ENC, subsequently enhancing BUI. Moreover, there is a positive relationship between ENC and ERP and ERP and BUI. This research further indicates that ENC positively mediates the relationship between ENL and BUI. Additionally, ENC and ERP sequentially and positively mediate the relationships involving ENL and BUI. Furthermore, the results suggest that the strength of the association between ENC and ERP marginally decreases (trivial), and the strength of the relationship between ERP and BUI decreases (small).

Originality/value - This study advances the existing body of knowledge by integrating NAM and ELM to examine the drivers of consumers' BUI toward EFP thoroughly. The research offers novel insights into the relationship between ENL and ENC and their effects on ERP and BUI, underscoring the significant role of consumers' eco-consciousness. The findings have practical implications for businesses and policymakers who seek to formulate strategies that align with consumers' psychological, cognitive, and behavioural processes in the context of Sustainable Development Goal 12 (SDG12), which can contribute to the global effort to foster more eco-friendly products and a sustainable future.

Keywords: Eco-friendly products, Buying intent, Norm activation model, Elaboration likelihood model, Consumer behaviour, SDG12

1. Introduction

In today's society, there is a notable shift towards eco-consciousness, with 89 percent of global consumers actively selecting eco-friendly products (EFP) to combat climate change ("A 'Natural' Rise in Sustainability Around the World," 2019). A 2022 survey conducted in Malaysia found that 63 percent of consumers are moving towards EFP, such as biodegradable and organic goods, as well as energy-saving appliances, in response to environmental challenges, thus indicating a growing embrace of sustainable living practices (Azhari *et al.*, 2023).

Therefore, companies must understand the key drivers influencing consumers' willingness to purchase EFP (Arora and Mishra, 2023). By showcasing their commitment to sustainable production and minimising environmental impact (Abbas *et al.*, 2024; Ketelsen *et al.*, 2020), these businesses can differentiate themselves in the market and align with the increasing consumer preference for EFP (Niu *et al.*, 2024).

Evidently, businesses that adopt eco-friendly production practices significantly reduce their reliance on chemicals, energy, and water, making this approach more environmentally sustainable (Sharma *et al.*, 2024). This shift has led to a noticeable rise in eco-friendly labels on product packaging and marketing campaigns. Notable examples include IKEA's 'Sustainable Living Shops' campaign and Unilever's 'Sustainable Living Plan'. Additionally, policymakers have initiated eco-friendly purchasing campaigns, such as Plastic Free July and the United Nations 'ACT NOW Climate Action Campaign' encouraging consumers to buy EFP.

Additionally, in response to the global initiative to achieve the United Nations' Sustainable Development Goals (SDGs), particularly SDG12 ("Sustainable Development Goals", n.d.), which emphasises 'Responsible Consumption and Production', scholars, businesses, and policymakers are increasingly committed to enhancing the availability of eco-friendly and sustainable products globally. These efforts aim to minimise waste, improve resource efficiency, and foster sustainable consumer behaviours (Sharma *et al.*, 2024).

It is, therefore, crucial to understand consumer propensity to purchase EFP, particularly in identifying the drivers of sustainable buying intent (BUI) and developing effective strategies to encourage EFP behaviours among consumers (Shehawy and Ali Khan, 2024). This focus has become increasingly pertinent as corporations and policymakers work to meet global sustainability targets, reduce carbon emissions, and conserve natural resources (Cenci *et al.*, 2023). Additionally, EFP provides consumers with a tangible means to contribute to

environmental preservation ("What is an Eco-Friendly Product?", 2024). By making conscientious purchasing decisions, consumers can significantly influence market trends towards enhanced environmental sustainability (Ki *et al.*, 2024; Shehawy and Ali Khan, 2024; Sun *et al.*, 2024). Therefore, research findings in this domain are integral to the overarching objective of SDG12, which seeks to promote sustainable development by aligning consumer BUI with their eco-consciousness.

Despite the increasing interest in EFP, as indicated by Mishal *et al.* (2017), Raj *et al.* (2023), and Rustam *et al.* (2020), there remains a substantial need for empirical research to investigate how eco-consciousness affects consumers' intentions to purchase such products. Numerous prior studies such as Asif *et al.* (2022), He *et al.* (2019), Kumar *et al.* (2021), Panda *et al.* (2020), and Sreen *et al.* (2021) have predominantly concentrated on frameworks such as the theory of planned behaviour (TPB), social cognitive behaviour (SCB), responsible environmental behaviour (REB), and the unified theory of acceptance and use of technology (UTAUT), among others. Nevertheless, there exists a scarcity of in-depth inquiry into the psychological, cognitive, and behavioural processes that shape consumers' BUI for EFP. It is crucial, therefore, to explore further the drivers such as eco-consciousness, attitude (ATT), and eco-responsible practices (ERP) on BUI towards EFP. This exploration can be significantly advanced by employing models such as the norm activation model (NAM) and the elaboration likelihood model (ELM) to understand consumer intent in this domain comprehensively.

Thus, the following research objectives of this study are delineated to address identified gaps in the existing literature:

The *primary objective* of this study is to analyse the impact of environmental literacy (ENL) and environmental concern (ENC) - both integral aspects of eco-consciousness on consumers' buying intent (BUI) for eco-friendly products (EFP).

The *second objective*, guided by the NAM (norm activation model) and the ELM (elaboration likelihood model), aims to provide valuable insights into the psychological, cognitive, and behavioural processes at play. This objective will examine the intricate relationships among environmental literacy (ENL), environmental concern (ENC), eco-responsible practices (ERP), and buying intent (BUI).

The *third objective* seeks to elucidate how the NAM (norm activation model) and the ELM (elaboration likelihood model) enhance the understanding of the study by illustrating the mediating role of environmental concern (ENC) between the relationship of environmental

literacy (ENL) and buying intent (BUI) and the sequential mediating effects of both environmental concern (ENC) and eco-responsible practices (ERP) in this relationship.

The *fourth objective* is to clarify how attitude (ATT) can strengthen the relationships between environmental concern (ENC) and eco-responsible practices (ERP) and between eco-responsible practices (ERP) and buying intent (BUI).

By addressing these objectives, this research provides valuable insights for businesses and policymakers to enhance their sustainability initiatives and deepen their understanding of consumers' willingness to purchase EFP, particularly within sustainable production agendas. By identifying the primary drivers influencing BUI, the findings can inform the development of strategies that align with consumers' psychological, cognitive, and behavioural processes with SGG12. Such alignment may significantly contribute to the global effort to promote a more eco-friendly and sustainable future.

From its theoretical perspective, this study provides significant insights into the influence of eco-consciousness on BUI, specifically within the context of sustainable consumption. The research establishes a comprehensive model to examine the complex interrelationships among various factors by integrating NAM and ELM. This integration addresses existing gaps within the literature by clarifying the underlying drivers of consumers' BUI towards EFP.

In brief, the structure of this article is organised into several key sections. Initially, a thorough theoretical examination of NAM and ELM is conducted to establish a comprehensive conceptual framework and elucidate the study's underlying assumptions. Subsequently, the methods employed in the study are presented, detailing the instrumentation and sampling techniques utilised. Following this, the study's findings are reported, accompanied by an analysis of their implications. Finally, the conclusion section addresses the study's limitations and provides recommendations for future researchers.

2. Theoretical background

2.1 Norm activation model (NAM)

Developed by Schwartz (1977), the norm activation model (NAM) provides a foundational framework for analysing an individual's internalised sense of moral obligation, referred to as personal norms (PN). This model is particularly pertinent in contexts necessitating altruistic or morally driven actions. According to NAM, the activation of these personal norms is primarily influenced by two factors: (1) the attribution of responsibility (AR) and (2) the

awareness of consequences (AC). NAM is especially relevant in environmental behaviour as it elucidates why individuals may engage in eco-responsible practices (ERP) (Sajjad *et al.*, 2024).

This study employs NAM to elucidate the influence of eco-consciousness, consisting of environmental literacy (ENL) and environmental concern (ENC), on ERP and, subsequently, the acquisition of EFP. According to NAM, when consumers become aware of the adverse consequences associated with unsustainable actions (i.e. AC) and perceive a personal sense of responsibility (i.e. AR) to alleviate these impacts, they are likely to experience an activation of PN (Schultz *et al.*, 2005). Such PN represents an internalised obligation to engage in eco-responsible purchases of EFP. The model elucidates the psychological and behavioural processes underpinning EFP purchases (Nketiah *et al.*, 2022). For instance, research by Kumar *et al.* (2021) indicates that consumers exhibiting heightened eco-consciousness are generally more conscious of the detrimental effects of unsustainable practices (i.e. high AC) and are more inclined to feel a personal obligation to participate in behaviours that mitigate these impacts (i.e. high AR). This heightened awareness subsequently activates their PN, driving them toward eco-responsible purchasing actions, such as buying intent (BUI) toward EFP (Kumar *et al.*, 2021).

Furthermore, the integration of NAM in this study emphasises the mediating role of ENC in the relationship between ENL and ERP (Zhang *et al.*, 2013). An elevated ENL enhances consumers' awareness of environmental issues and fosters understanding of the ramifications of inaction, thereby increasing their awareness of negative impacts (i.e. AC). As consumers acquire greater knowledge, they are more likely to assign responsibility to themselves (i.e. increasing AR), which activates their PN and results in eco-responsible purchasing behaviour (Zhang *et al.*, 2013).

Therefore, incorporating NAM into this study enables a more thorough exploration of the eco-consciousness factors (i.e. ENL and ENC) that drive ERP and examines how these practices affect BUI towards EFP. Consequently, the proposed model will establish a robust framework for understanding the transition from eco-consciousness to actionable behaviour, thereby highlighting the significance of PN as a vital driver of eco-friendly conduct.

2.2 Elaboration likelihood model (ELM)

The dual-process theory, commonly referred to as the Elaboration Likelihood Model (ELM), was formulated by Petty and Cacioppo (1986). This model elucidates how individuals process

persuasive information, thereby influencing attitude change. The ELM posits two distinct routes of information processing: (1) the central route (CR) and (2) the peripheral route (PR) (Liu *et al.*, 2022). The CR thoroughly evaluates the presented arguments, resulting in a more lasting attitude change. Conversely, the PR necessitates less cognitive engagement, relying on superficial cues such as the source's credibility or emotional appeals, which yields a more transitory attitude change (Liu *et al.*, 2022).

This study integrates ELM to clarify how consumers develop attitudes (ATT) and intentions towards EFP (Rucker and Petty, 2006). When consumers come across information about EFP, they may process it through a cognitive route (i.e. CR) if they are particularly concerned about environmental issues. This leads to a deeper understanding and stronger ATT toward EFP, reinforcing their BUI. For instance, consumers with high ENC are more likely to carefully evaluate the environmental benefits of a product, resulting in a more informed and committed BUI (Angst and Agarwal, 2009). Consumers who pay less attention to ENC may rely on their PR and external factors, such as eco-friendly labels, to assess a product's eco-friendliness. However, this approach often means they do not fully consider the product's environmental impact (Chan *et al.*, 2006). While this reliance can still create positive ATT towards EFP, such attitudes and the resulting buying intentions (BUI) may be more vulnerable to change if any external cues are altered (Chan *et al.*, 2006).

Integrating ELM into this study establishes a framework for understanding the varying levels of consumer commitment to EFP and their subsequent impact on BUI. By investigating CR and PR, this study seeks to understand consumer behaviour within the eco-friendly market comprehensively. It aims to elucidate how different forms of persuasive information can effectively influence BUI, contingent upon consumers' ENC and ATT. Consequently, this research employs the NAM-ELM model as the foundational theoretical basis for developing the research model, as depicted in Figure 1.

Thus, this research employs the NAM-ELM model as the theoretical foundation for developing the research model depicted in Figure 1.

Insert Figure 1 here.

3. Hypotheses development

3.1 Drivers that influence buying intent (BUI)

Eco-consciousness, which encompasses environmental literacy (ENL) and environmental concern (ENC), is instrumental in shaping consumers' buying intent (BUI) toward eco-friendly products (EFP). As Tan et al. (2019) articulated, eco-conscious consumers understand how their sustainable practices influence the environment and demonstrate a willingness to alter their consumption behaviours to mitigate adverse effects. This awareness is intricately connected to their levels of ENL and ENC (Laheri *et al.*, 2024).

An individual's capacity to comprehend and analyse environmental issues is referred to as ENL (Aktan and Kethüda, 2024). Conversely, ENC reflects the extent to which an individual's values shape their perception of the impacts of environmental degradation on themselves, others, and living beings (Maduku, 2024). As ENL increases, it tends to enhance ENC as individuals become more aware of their action's adverse environmental effects. This awareness recognises environmental challenges' urgency and instils a stronger moral duty to safeguard the environment (Bai *et al.*, 2024). Hence, ENL encompasses an understanding of the interconnectedness of ecosystems and the consequences of environmental deterioration, elevating concern and motivating individuals to adopt behaviours that mitigate these impacts (Maduku, 2024). Consequently, this cognitive understanding deepens emotional responses, resulting in a more profound commitment to environmental preservation. Therefore, the following hypothesis is proposed:

H1. Environmental literacy (ENL) has a significant positive influence on environmental concerns (ENC).

In this study, the term' buying intent' (BUI) refers to the interplay between a consumer's interest in a product and their financial capacity to make a purchase (Bläse *et al.*, 2024). Consumers are increasingly concerned about environmental issues, which motivates them to align their purchasing intent with their values (Shehawy and Ali Khan, 2024). This heightened awareness of environmental impacts fosters a moral obligation among these consumers to select products that minimise ecological harm (Maduku, 2024). Consequently, this concern translates into a preference for products that are perceived as environmentally responsible. By choosing such products, consumers can express their commitment to environmental protection (Cerri *et al.*, 2018). The relationship between ENC and BUI is further strengthened

by the desire to alleviate cognitive dissonance, as consumers seek to ensure that their purchasing actions, such as acquiring EFP - are consistent with their beliefs regarding ENC.

Heightened ENC cultivates a more robust psychological and cognitive commitment to resolving environmental issues (Schultz et al., 2005). This elevated concern prompts consumers to adopt behaviours that diminish their environmental impact, fostering a pronounced sense of personal responsibility and urgency (Kollmuss and Agyeman, 2002). Chiu et al. (2014) indicate that individuals who engage in activities to prevent environmental harm have eco-responsible practices (ERP). Furthermore, Mainieri et al. (1997) demonstrated that consumers exhibiting heightened concern for environmental issues are more inclined to engage in eco-responsible practices (ERP), including acquiring EFP (Gifford & Nilsson, 2014). Consequently, ENC is identified as a crucial driving force that translates into substantive ERP, reflecting a deeper congruence between personal values and actions. In light of this analysis, the following propositions are put forth:

H2. Environmental concern (ENC) has a significant positive influence on the buying intent (BUI) of eco-friendly products (EFP).

H3. Environmental concern (ENC) has a significant positive influence on eco-responsible practices (ERP).

Engaging in ERP enhances individuals' self-identification as environmentally conscious consumers, thereby increasing the likelihood that they will make purchasing decisions aligned with their eco-friendly behaviours (Sajjad et al., 2024). Moreover, such practices frequently lead to heightened awareness and comprehension of environmental issues, underscoring the significance of supporting EFP (Hines et al., 1987). The relationship between self-identity and product selections further reinforces the consumer's commitment to the responsible use of EFP, reflecting their overarching environmental values. Consequently, it is hypothesised that:

H4. Eco-responsible practices (ERP) significantly positively influence the buying intent (BUI) of eco-friendly products (EFP).

3.2 Environmental concern (ENC): The mediator

Research conducted by scholars such as Kollmuss and Agyeman (2002) indicates that an increase in ENC motivates consumers to engage in more ERP. This heightened awareness fosters a greater commitment to mitigating environmental impact (Maduku, 2024). Therefore, ENC is essential in converting ENL into actionable behaviours that reflect eco-responsibility (Kumar et al., 2021). This finding emphasises the significance of comprehending environmental issues through ENL, as it can lead to an enhanced ENC, thereby influencing positive behavioural changes, i.e. ERP. Considering this, the following proposition has been formulated:

H5. Environmental concern (ENC) mediates the relationship between environmental literacy (ENL) and eco-responsible practices (ERP).

3.3 Environmental concern (ENC) and eco-responsible practices (ERP): The serial mediator

ENL is vital for enhancing consumer understanding of ecological issues and increasing their concern for the environment by fostering awareness of the consequences of their actions (Sajjad *et al.*, 2024). This elevated awareness encourages individuals to adopt ERP to mitigate environmental harm (Mobley *et al.*, 2010). Consequently, these practices enhance the intention to purchase EFP, aligning with the consumers' values and commitment to sustainability (Tikka *et al.*, 2000). The relationship between ENL and purchasing intent is strengthened through increased ENC and the adoption of ERP, thereby linking ENL to BUI. Therefore, the following hypothesis is posited:

H6. Environmental concern (ENC) and eco-responsible practices (ERP) sequentially and positively mediated the relationship between environmental literacy (ENL) and the buying intent (BUI) of eco-friendly products (EFP).

3.4 Attitude (ATT): The moderator

An attitude (ATT) is defined as a predisposition either for or against a specific object, individual, or phenomenon (Dawson, 1992). In the context of this study, consumers exhibiting a strong ENC are more likely to engage in eco-friendly behaviours when they possess a positive ATT toward EFP. This occurs because a positive ATT is aligned with personal values emphasising environmental protection, thereby increasing the probability of translating concerns into ERP

(Cerri *et al.*, 2018). ATT functions as a cognitive filter, significantly influencing how individuals interpret and respond to their concerns. This, in turn, enhances the likelihood of behaviours consistent with ATT and ENC. A favourable attitude toward EFP reinforces the connection between ENC and the BUI towards EFP. When consumers demonstrate care for the environment and maintain a positive ATT towards EFP, they are more likely to express intentions to buy these products (Shehawy and Ali Khan, 2024). Furthermore, ATT is critical in motivating consumers to align their behaviours with their concerns, particularly during purchasing (Ogiemwonyi *et al.*, 2023). Consequently, a strong eco-friendly mindset significantly increases the likelihood that ENC will manifest as a tangible intention to purchase EFP. Therefore, the following hypothesis is proposed:

H7. Attitude (ATT) towards eco-friendly products (EFP) strengthens the positive relationship between environmental concern (ENC) and eco-responsible practices (ERP).

H8. Attitude (ATT) towards eco-friendly products (EFP) strengthens the positive relationship between eco-responsible practices (ERP) and the buying intent (BUI) of eco-friendly products (EFP).

4.0 Methodology

4.1 Sampling

The research employed Google Forms to conduct an online survey to collect participant data systematically. A purposive sampling method was utilised to ensure that participants fully understood the subject matter, considering specific factors pertinent to the study. To guarantee the accuracy and relevance of the responses, potential participants were meticulously screened based on two specific criteria: (1) whether they had purchased eco-friendly products (EFP) within the last six months, and (2) whether they could identify the specific EFP they purchased. Individuals who did not meet these criteria were excluded from participation in the questionnaire.

The study contacts the target respondents by disseminating the online survey link across prominent social media platforms, including Instagram and Facebook, and within relevant online groups and communities. This approach effectively engages the desired participants, enhancing the survey's outreach and overall participation. Subsequently, the data collection

process commenced, gathering information from a sample of 50 consumers. Following this initial phase, a pilot study was conducted to evaluate the face validity of the collected data. Consequently, minor modifications were implemented to enhance the clarity and simplify the complexity of the questionnaire items. After these revisions, the final questionnaire was administered to the primary sample for comprehensive analysis.

A total of 412 valid responses were obtained for this study. To ascertain the appropriate sample size for the purposive sampling method, the research applied the formula proposed by Tabachnick and Fidell (2018), expressed as '$N \geq 50 + 8\ m$', where N denotes the minimum sample size, and m represents the number of items. Based on this formula, the study requires a minimum sample size of 250, calculated as 50 + 8 X 25 = 250. The '10-times rule' method advocated by Hair et al. (2011) was also employed. Given that the research model comprises 25 items across five constructs, this method indicates a minimum sample size of 250 (25 X 10). Therefore, this study's sample size of 412 usable cases significantly exceeds the recommended benchmark for testing the proposed model.

According to the demographic profile of the respondents presented in Table 1, the predominant gender among participants is male, accounting for 58.5% of the total. The majority of respondents fall within the age range of 26 to 30 years, comprising 20.4% of the sample. Furthermore, 39.1% of respondents are degree holders, and 47.3% are married. A considerable proportion, 30.6%, report a monthly household income between MYR 3,001 and MYR 4,000 (approximately USD 677 to USD 902). Additionally, 19.2% of respondents indicate that their monthly expenditures related to EFP range from MYR 201 to MYR 250 (roughly USD 45.80 to USD 56.47).

Insert Table 1 here.

4.2 Instrumentation

To ensure empirical rigour, the questionnaire was developed by adapting validated instruments from prior literature (refer to Table 2). It employed a seven-point Likert scale, ranging from 1 (indicating strongly disagree) to 7 (indicating strongly agree). To enhance the clarity and accuracy of the instrument, a preliminary pilot test was conducted with four academic experts in the relevant field. After incorporating necessary edits and grammatical corrections, a revised questionnaire was administered to a sample of 50 eligible participants.

Insert Table 2 here.

5. Results

The analysis started by examining the demographic profile of the respondents using SPSS (version 29). Subsequently, SmartPLS (version 4) was employed to conduct partial least squares structural equation modelling (PLS-SEM). This method was particularly useful for the research objectives, including predictive and exploratory elements (Sarstedt *et al.*, 2022). Additionally, PLS-SEM is recognised as an effective statistical tool for evaluating complex structural models, including sequential mediation (Nitzl *et al.*, 2016) and moderation (Becker *et al.*, 2023).

5.1 Common method variance

This study utilised two primary approaches to mitigate common method variance (CMV) and to address potential limitations associated with a cross-sectional research design (Kock *et al.*, 2021): (1) procedural measures and (2) statistical measures. In the procedural measure, the survey's cover page contains vital information designed to reassure respondents regarding the confidentiality and anonymity of their contributions. It specifies that the survey can be completed in approximately ten minutes or less while emphasising that there are no right or wrong answers, thereby encouraging truthful responses. Additionally, the projected completion time ensures respondents have ample time to participate without feeling rushed. As for the statistical measure, a full collinearity test was performed following the methodology outlined by Kock (2015). This involved creating a dummy variable with random values, which was subsequently regressed against all variables included in the study. The variance inflation factor (VIF) values obtained ranged from 1.072 to 1.817, all falling below the critical threshold of 3.3. This finding firmly indicates that any potential CMV did not significantly compromise the integrity of the data collected in the study.

5.2 Measurement model analysis

An analysis was undertaken to assess the measurement model focusing on internal consistency (including confidence and factor loadings), convergent validity, and discriminant validity, as delineated by Hair *et al.* (2019). As indicated in Table 2, all variables exhibited a

Cronbach's alpha and composite reliability exceeding 0.7, signifying strong internal consistency among the scales of each variable (Hair *et al.*, 2022). This outcome demonstrates a high degree of alignment among the items within each construct, thus conveying a cohesive meaning and yielding satisfactory results. Consequently, this analysis determined the extent of the relationships among the items in the questionnaire, particularly concerning the measurement scale. The findings suggest that the scale can reliably evaluate the constructs, facilitating further investigation. Subsequently, factor loadings and average variance extracted (AVE) were assessed to evaluate convergent validity. Table 2 illustrates that the loading values and AVE were greater than 0.7 and 0.5, respectively (Hair et al., 2017), thereby confirming convergent validity. It is important to note that the items ERP1, EPR6, and BUB4 were excluded from the analysis due to their low outer loading (less than 0.4). Furthermore, the evaluation of the Heterotrait-Monotrait ratio (HTMT) criterion, as presented in Table 3, indicated that the values for each variable remained below the conservative threshold of 0.85 (Henseler *et al.*, 2015), thereby establishing discriminant validity.

Insert Table 3 here.

5.3 Structural model analysis

Before assessing the structural model, an examination of the collinearity among the predictor variables was conducted. The VIF values were determined to be below the established threshold of 5, as Hair et al. (2022) recommended, thereby alleviating concerns regarding predictor collinearity and its associated complications. Subsequently, the significance of the relationships among the constructs was evaluated (refer to Table 4) through bootstrapping procedures utilising 10,000 subsamples per the methodology outlined by Becker *et al.* (2023). Following that, the structural model in this study, the significance of coefficients, coefficients of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2) were examined. As detailed in Table 4, the results indicate a robust positive relationship between ENL and ENC ($\beta = 0.588$, $p < 0.001$), thus supporting *H1*. Moreover, both ENC ($\beta = 0.186$, $p < 0.01$) and ERP ($\beta = 0.274$, $p < 0.001$) demonstrated positive correlations with BUI, providing support for *H2* and *H4*. Additionally, substantial support for *H3* is evident, as ENC significantly affects ERP ($\beta = 0.497$, $p < 0.001$).

Subsequently, the effect sizes (f^2) were analysed using Cohen's (1988) guidelines to assess the relevance of each hypothesis. The findings in Table 4 indicate that H1 exhibits a large effect size (f^2 = 0.528), while *H3* exhibits a medium effect size (f^2 = 0.321). Furthermore, *H2* (f^2 = 0.040) and *H4* (f^2 = 0.091) show small but meaningful effect sizes. Regarding explanatory power, the coefficient of determination (R^2) values for ENC, ERP, and BUI are 0.346, 0.437, and 0.527, respectively.

The PLS*predict* procedure was employed to evaluate the model's predictive relevance (Chin *et al.*, 2020; Shmueli *et al.*, 2019). According to Shmueli *et al.* (2019), a model is considered to have predictive quality when $Q^2predict$ values exceed the threshold of zero, as proven in Table 4. As indicated in Table 5, all indicators ($Q^2predict$) values for endogenous constructs - BUI, ERP, and ENC - range from 0.089 to 0.366, confirming that all values are greater than zero. Furthermore, a comparison of the root mean squared error (RMSE) values for the indicators between the PLS-path model (PLS-SEM_RMSE) and the linear model (LM_RMSE) demonstrates the superiority of the PLS-path model. Specifically, the PLS-path model consistently yielded lower RMSE values for most indicators, indicating medium predictive relevance.

Insert Table 4 here.

Insert Table 5 here.

5.4 Mediating and moderating effects assessments

As for the mediation effects, Hair *et al.* (2022) approach was employed. Table 4 presents the examination of two indirect effects: *H5* (ENL -> ENC -> BUI) and *H6* (ENL -> ENC -> ERP -> BUI). *H5* and *H6* were supported, as evidenced by the confidence intervals for *H5* (lower bound: 0.048; upper bound: 0.184) and *H6* (lower bound: 0.048; upper bound: 0.121), which do not encompass zero. These results indicate that ENC positively mediates the relationship between ENL and BUI in the case of *H5* and that this relationship is further sequentially mediated by both ENC and ERP in the case of *H6*.

The moderation analysis was conducted utilising a two-stage approach, as outlined by Becker *et al.* (2023). Table 4 illustrates that ATT significantly moderates the relationship

between ENC and ERP (β = -0.082, $p < 0.05$). As ATT increases, the strength of the relationship between ENC and ERP exhibits a marginal decrease, thereby supporting *H7*. Nevertheless, it should be noted that the effect size is trivial ($f^2 = 0.014$). Furthermore, the moderation effect of ATT on the relationship between ERP and BUI is highly significant (β = -0.129, $p < 0.001$), thus substantiating *H8*. With an increase in ATT, the strength of the relationship between ERP and BUI correspondingly diminishes; hence, the effect size is relatively small ($f^2 = -0.043$).

The findings are delineated in the slope analysis (interaction plots) in Figures 2 and 3. Figure 2 indicates that consumers exhibiting a stronger preference for EFP are less likely to display ERP when their ENC is elevated. This suggests a weakening influence of ENC on ERP as individuals become increasingly inclined towards EFP. In contrast, Figure 3 illustrates that a heightened preference for EFP attenuates the positive relationship between ERP and BUI engagement. This observation implies a potential trade-off between ERP and BUI when consumers are more oriented towards such products.

Insert Figure 2 here.

Insert Figure 3 here.

6. Discussion and implications

6.1 Discussion of results

This study underscores the increasing relevance of eco-friendly products (EFP) in the marketplace and the heightened emphasis on sustainable consumption practices. To effectively inform marketing strategies and environmental policies, a comprehensive framework has been developed that integrates the elaboration likelihood model (ELM) and the norm activation model (NAM). This framework aims to elucidate eco-consciousness, specifically through the constructs of environmental literacy (ENL) and environmental concern (ENC) concerning predicting buying intent (BUI). The analysis further explores the mediating role of ENC. It evaluates the serial mediation effect of ENC and eco-responsible practices (ERP) within the context of the relationship between ENL and BUI. Additionally, the study examines the moderating influence of attitude (ATT) on the interactions between ENC and ERP and between ERP and BUI. By incorporating the NAM-ELM model, the findings align with existing literature and substantiate all proposed hypotheses. Thus, this research

contributes valuable theoretical insights and offers significant implications for future investigations into eco-friendly consumption practices.

The research findings reveal a robust and statistically significant positive relationship between ENL and ENC (*H1*), which is consistent with prior studies conducted by Kaiser and Fuhrer (2003) and Mobley *et al.* (2010). As emphasised by Tikka *et al.* (2000), individuals demonstrating eco-consciousness - indicative of higher levels of environmental and sustainability education - are more predisposed to exhibit ENC. This observation underscores that participants in environmental education initiatives, including outdoor nature activities in educational settings, community clean-up campaigns, and workplace waste reduction programs, are more likely to display heightened ENC (Ardoin *et al.*, 2020). These initiatives provide essential knowledge that enables individuals to appreciate the gravity of environmental challenges and the implications of detrimental human activities, such as deforestation, pollution, climate change, and habitat destruction. The initial phase of adopting ERP commences with a sincere commitment to environmental stewardship, which can be effectively cultivated through engagement in these specialised programs.

This research indicates a positive correlation between ENC and BUI (*H2*). The findings are consistent with the work of Bamberg and Möser (2007), Chan (2001), and Kollmuss and Agyeman (2002), all of whom have demonstrated that individuals who prioritise ENC are more likely to express a commitment to reducing their environmental footprint through the purchase of EFP. Furthermore, the research conducted by Kim and Choi (2005) supports the assertion that ENC is a significant predictor of pro-environmental behaviours, particularly concerning purchasing decisions regarding EFP. Collectively, these consistent findings validate the premise that ENC is a robust and reliable predictor of BUI.

Interestingly, ENC is positively and significantly associated with ERP (*H3*), corroborating findings from prior research (Harland et al., 1999; Schwartz, 1977) that support this connection. Evidence indicates that individuals who demonstrate a heightened awareness of environmental issues are more likely to endorse sustainable practices, minimise waste, and conserve resources (Gifford and Nilsson, 2014; Kollmuss and Agyeman, 2002). As Gifford and Nilsson (2014) articulated, consumers with ENC tend to engage in more proactive measures aimed at environmental protection. Consequently, the results of this study affirm that ENC serves as a significant catalyst for ERP in this particular context.

Furthermore, the present study has established a positive and significant correlation between ERP and BUI (*H4*), a finding supported by previous research, including that of Kim and Lee (2023) and Schultz *et al.* (2005). Consistent with the findings of Ogiemwonyi *et al.* (2023), it is evident that sustained environmental behaviour enhances consumers' commitment to sustainable choices. Consequently, consumers who embrace ERP exhibit a pronounced inclination toward purchasing EFP. This research underscores the influence of ERP on BUI, illustrating the substantial conversion of ERP into actionable BUI.

This study also aimed to develop and analyse mediation hypotheses that investigate the relationships between ENL and BUI while accounting for the roles of ENC as a mediator (*H5*) and the serial mediation of ENC and ERP (*H6*). The findings provided support for both *H5* (ENL -> ENC -> BUI) and *H6* (ENL -> ENC -> ERP -> BUI), respectively. The mediating role of ENC in the relationship posited in H5 is corroborated by the works of Straughan and Roberts (1999) and Taufique and Vaithianathan (2018). Specifically, ENL establishes a foundation for educating consumers on environmental issues, enhancing ENC and promoting BUI towards EFP. Consumers with a higher level of ENL tend to exhibit an increased eco-consciousness, resulting in a more profound ENC. This increased concern serves as a key driver for acquiring EFP, thereby illustrating the mediating influence of ENC between ENL and BUI. Furthermore, this research substantiates that the relationship between ENL and BUI is serially mediated by the pathway ENC -> ERP (*H6*), underscoring the critical roles of ENL and ENC in driving sustainable consumer intentions towards EFP. This finding underscores the significance of moral values and personal concern as motivators for eco-friendly behaviours. It further suggests that a forceful cognitive engagement with environmental issues facilitated by concern can catalyse consumer intention shifts. The results obtained in *H5* and *H6* accentuate the vital role of concern in translating knowledge into actionable outcomes, as noted by Hansla et al. (2008). Moreover, they underscore the necessity for sustained engagement with eco-consciousness to encourage environmentally responsible behaviour in BUI.

Concerning the moderation analyses, the moderator variable ATT was hypothesised to influence the positive association between *H7* (ENC -> ERP) and *H8* (ERP -> BUI). The results of the interaction analyses provide significant support for both *H7* and *H8*. These findings are consistent with existing literature, including the studies by Schlegelmilch et al. (1996) and Hines et al. (1987), which demonstrate that ATT is a significant predictor of environmental behaviour across diverse contexts. Furthermore, consumers who exhibit a positive ATT

toward EFP are more likely to engage in purchasing decisions, highlighting the influence of ATT on sustainable consumer behaviour, as highlighted by Kumar and Ghodeswar (2015) and Paul et al. (2016).

6.2 Theoretical implications

This study offers several significant theoretical contributions to the existing literature. First and foremost, integrating NAM and ELM creates a more comprehensive research framework for understanding consumer psychology, including the cognitive and behavioural processes involved. NAM primarily focuses on moral and normative motivations, emphasising consumer accountability, awareness of consequences, and a sense of obligation. While it effectively highlights the importance of recognising the impact of one's understanding of the awareness of consequences (AC) and the attribution of responsibility (AR), this model may not fully capture the complexity of the phenomenon in question. Additionally, NAM overlooks the cognitive processes influencing consumers' attitudes, decision-making, and information assessment. These limitations suggest that the model might miss critical elements, such as how environmental messages are communicated, how consumers interpret them, and the influence of external cues and cognitive efforts on their attitudes and behaviours. Therefore, ELM serves as a valuable complementary framework for understanding the cognitive processes that shape the formation of consumers' attitudes and judgments.

Additionally, by incorporating ATT as an interaction variable, this study expands the conceptual frameworks of both NAM and ELM. It elucidates how positive attitudes can either strengthen or weaken the relationships between ENC and ERP, as well as between ERP and BUI. This advancement enhances our understanding of attitudinal dynamics within sustainable consumption literature. The findings suggest that further research is necessary to explore how attitudes can be shaped or enhanced to foster eco-friendly purchasing intentions among consumers. This could involve investigating the impacts of targeted educational programs, social influences, and policy interventions on consumer attitudes towards EFP.

Lastly, the empirical findings reveal that, particularly within Malaysia's cultural and economic context, the intricate interactions among ENL, ENC, ERP, and ATT (as the moderating variable) are crucial to understanding consumer behaviour regarding EFP. These findings underscore the significant influence of Malaysia's cultural values and economic factors on consumers' decision-making processes pertaining to sustainable behaviours.

6.3 Managerial implications

This comprehensive research provides critical insights that can be utilised to enhance the formulation of effective marketing strategies designed to promote and accelerate the adoption of EFP. Additionally, the study offers practical recommendations for businesses, educators, and policymakers to foster sustainable and environmentally conscious consumer behaviour, supported by rigorous data analysis.

One of the significant findings of this study is the enhancement of environmental stewardship through (1) educational programs, (2) public policies, and (3) corporate social responsibility (CSR) initiatives. At the outset, policymakers can foster environmental awareness from an early age by incorporating comprehensive environmental education into school curricula. This strategy can cultivate greater eco-consciousness within the community. Educational institutions must include subjects such as sustainability, biodiversity, and climate change to equip students with a robust understanding of environmental issues. Green School Bali is a noteworthy example of such an initiative, which has gained international recognition for its innovative sustainability curriculum. This program effectively combines traditional academic subjects with hands-on experiential learning. Students engage in activities that include organic farming and waste management. Furthermore, the campus operates as a living laboratory, showcasing sustainable practices through bamboo architecture, solar energy systems, and composting toilets. These elements collectively illustrate a commitment to sustainable living.

Public outreach initiatives may encompass educational advertisements, social media campaigns, and community events to raise awareness about critical environmental issues. A prominent example is the 7EGoGreen initiative, implemented by 7CAFé at 7-Eleven, which introduced the Bring Your Own Cup (BYOC) campaign. This initiative emphasises the company's commitment to environmental sustainability through its innovative motto: 'Cawan Sendiri, Alam Bestari', translating to 'Own Cup, Nature Smart'. By encouraging consumers to utilise their reusable cups, 7-Eleven aims to eliminate approximately 3,000 disposable cups per month, promoting more sustainable consumption practices. Beyond raising awareness, such initiatives aim to actively engage individuals in ways that enhance their concern for environmental issues, ultimately fostering broader support for environmental policies and programs. Moreover, marketers at EFP can integrate educational content into their marketing

strategies to inform consumers about the environmental impact of their choices. By enhancing consumer knowledge, companies can cultivate greater eco-consciousness, potentially resulting in increased demand for sustainable products. For instance, product packaging could be designed to provide information on the environmental advantages of selecting a particular product, thereby enhancing consumer awareness at the point of purchase.

Additionally, by educating individuals about the ramifications of environmental degradation and the significance of personal responsibility, governmental bodies and non-governmental organisations (NGOs) can implement public awareness campaigns to elevate ENC. These campaigns can foster a sense of accountability and encourage eco-friendly behaviours, such as waste reduction, energy conservation, and the selection of sustainable products (Tavitiyaman *et al.*, 2024). Furthermore, these initiatives can aim to inform consumers about eco-friendly certifications, including green-certified products and labels, thereby enhancing the likelihood of making environmentally conscious purchasing decisions. Labels such as 'eco-friendly', 'certified organic', 'low carbon footprint' and the 'MyHIJAU Mark' indicate to potential consumers that a product aligns with their eco-conscious values, influencing their purchasing behaviour.

Moreover, legislators possess the authority to establish regulations and legislation that foster environmentally sustainable practices. Policies aimed at enhancing recycling efforts, improving energy efficiency, and promoting the use of public transportation are likely to achieve greater effectiveness when complemented by initiatives that raise public awareness regarding environmental issues.

Lastly, companies should prioritise innovation and advocate for environmentally friendly practices to enhance their CSR initiatives. By aligning their business operations with the environmental priorities of their customers, firms can effectively meet their ethical obligations, broaden their customer base, and strengthen brand loyalty. A strategic approach may involve publicly committing to reducing their environmental footprint or designating a substantial percentage of their profits to environmental causes. Such proactive measures are likely to resonate profoundly with environmentally conscious consumers.

7. Limitations and future research recommendations

While this study offers valuable insights, it is essential to acknowledge a few limitations and explore opportunities for further research.

One primary concern is that the data were collected exclusively from Malaysia. This limitation raises focal questions about how applicable the findings are to other populations with different cultural, economic, and environmental contexts. Future research should investigate these concepts in a broader range of non-Western and Western countries. Such studies could provide valuable insights into whether the trends observed in Malaysia reflect a broader, universal phenomenon that extends beyond specific regional characteristics and can be applied in various global contexts.

The study employed cross-sectional data by disseminating an online survey link through prominent social media platforms and relevant online groups and communities. While this data collection method is efficient and convenient, it has inherent limitations in establishing causal relationships. Thus, future studies should consider adopting longitudinal or experimental methodologies to enhance the quality of evidence from correlational to causal within this research domain.

Moreover, this research examines a defined set of variables, including eco-consciousness (ENL, ENC), ERP, BUI, and ATT. For subsequent studies, it is advisable to incorporate additional variables such as social norms, social pressure, and product quality. Including these elements would provide a more comprehensive understanding of the subject matter.

Besides, this study examines Malaysia, a collectivist culture with an emerging economy that faces significant societal pressure. In this environment, individuals tend to align their actions with community beliefs, which can restrict their autonomy and confidence in making personal decisions about EFP (Ogiemwonyi *et al.*, 2023). Malaysia comprises three main ethnic groups: Malays, Chinese, and Indians. In this context, community approval is crucial in influencing ERP behaviour. Unlike in individualistic cultures, individuals often seek societal validation when purchasing EFPs, where personal values primarily drive decisions. Economic constraints in emerging markets may also limit access to EFP, affecting consumer behaviour differently than in developed economies where such products are more readily available. Future research should explore these dynamics through comparative studies across various cultural and economic contexts. For example, examining ERP in individualistic, high-income countries like Germany could provide insights into how cultural and economic factors shape

sustainable behaviour. Such studies could validate and expand the findings of this research, enhancing our understanding of the relationships among ENL, ENC, ERP, ATT, and BUI of ERP.

Although this study employs well-established scales for most of its constructs, it incorporates a limited number of indicators to evaluate ENC, adapted from Issock *et al.* (2018). Therefore, future researchers should either adapt the existing scales, adopt alternative measures, or develop more comprehensive scales that include additional indicators. Such an approach would enhance the precision and inclusivity in understanding the BUI of EFP.

Lastly, it is imperative to recognise that the findings of this study are context-specific and primarily applicable to EFP. To enhance the credibility of these results, future researchers are encouraged to replicate the NAM-ELM model employed in this research across various contexts. Furthermore, investigating a broader and more diverse array of products - including organic food, electric vehicles, cosmetics, textiles, food packaging, and apparel - would significantly contribute to a comprehensive understanding of the impact of eco-consciousness on consumers' purchasing intentions across different product categories.

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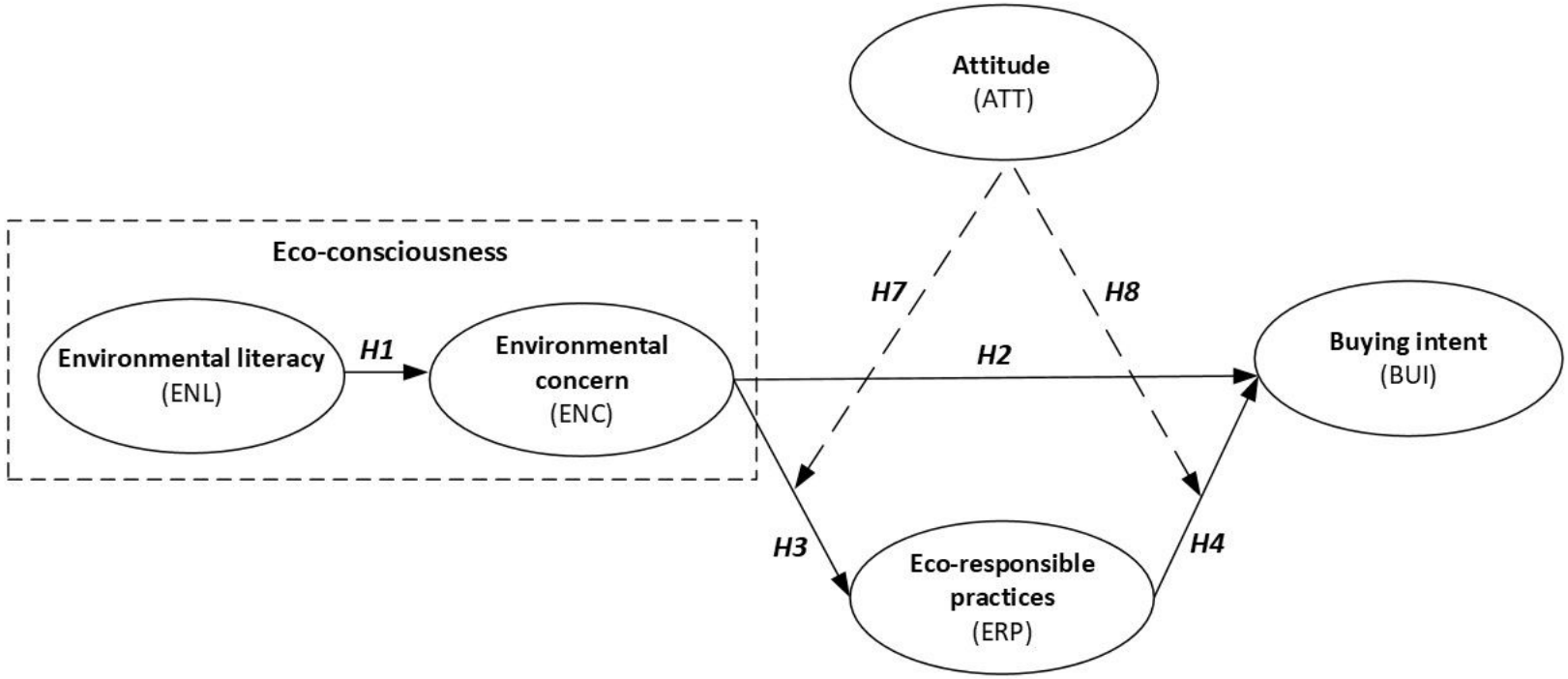

Figure 1.

Research model.

Source: Authors' own illustration

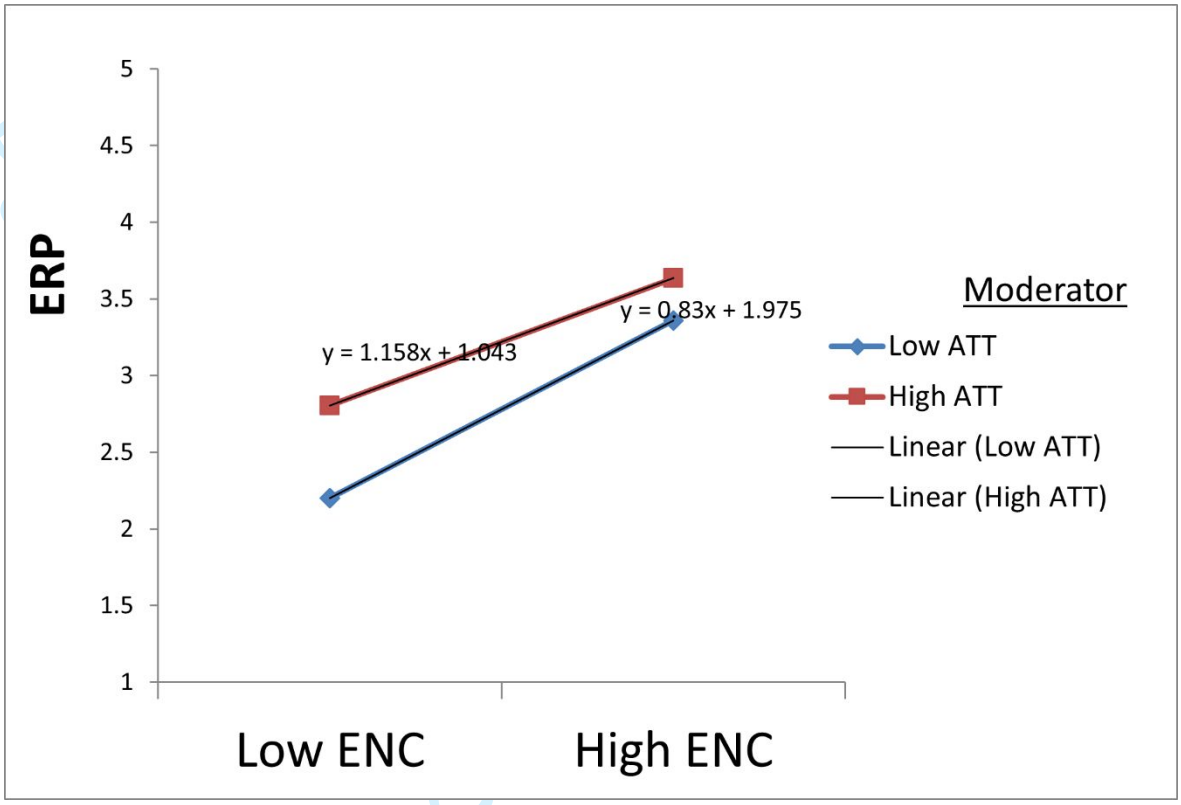

Figure 2.

Moderating effect of ATT on the relationship between ENC and ERP.

Notes: ATT = Attitude; ERP = Eco-responsible practices; ENC = Environmental concern.

Source: Authors' own illustration

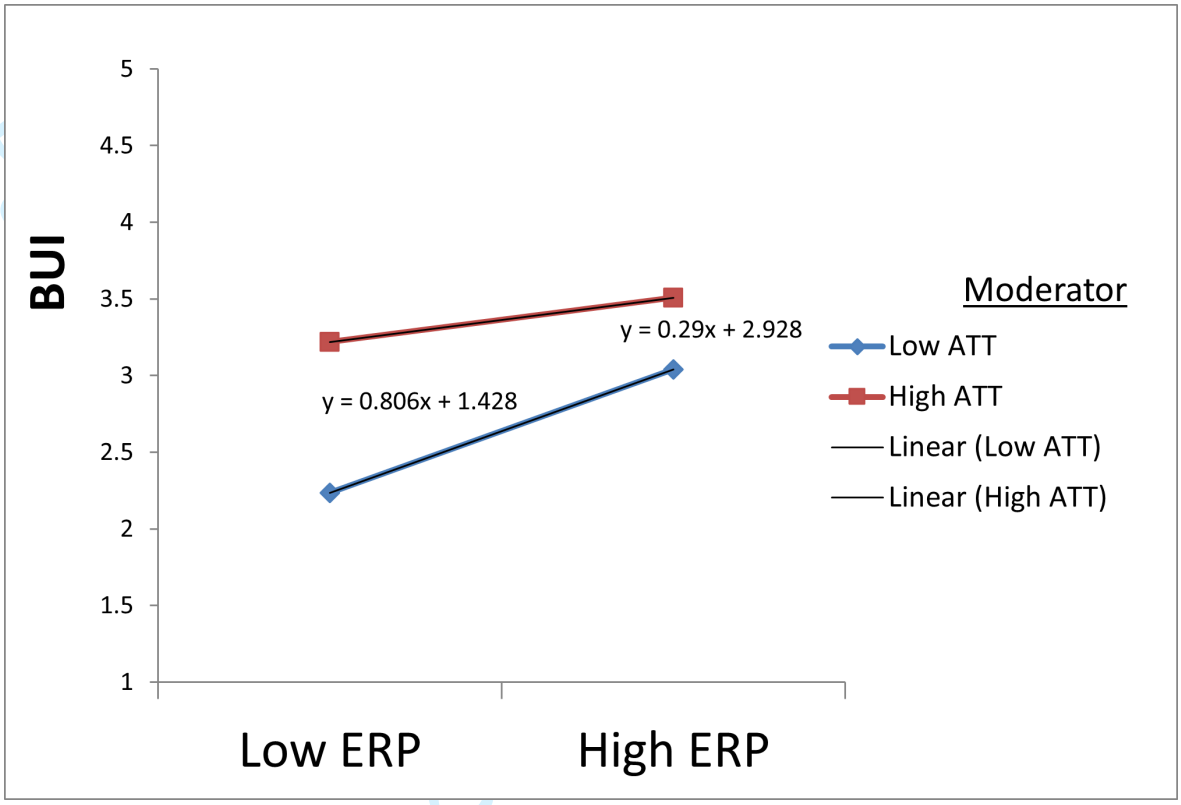

Figure 3.

Moderating effect of ATT on the relationship between ERP and BUI.

Notes: ATT = Attitude; BUI = Buying intent; ERP = Eco-responsible practices.

Source: Authors' own illustration

Table 1.

Respondents' demographic profile (*N* = 412)

Category	Item	Frequency	Percentage (%)
Gender	Male	171	41.5
	Female	241	58.5
Age	21 - 25	64	15.5
	26 - 30	84	20.4
	31 - 35	79	19.2
	36 - 40	80	19.4
	41 - 45	52	12.6
	46 - 50	32	7.8
	51 - 55	19	4.6
	56 and above	2	0.5
Education level	Secondary	28	6.8
	Diploma/vocational	112	27.2
	Bachelor's degree	161	39.1
	Master's degree	76	18.4
	Doctoral degree/PhD	35	8.5
Marital status	Single	182	44.2

	Married	195	47.3
	Widow	35	8.5
Monthly household income (MYR)	0 - 1,000 (~USD$0 – USD$225)	11	2.7
	1,001 - 2,000 (~USD $226 – USD $451)	30	7.3
	2,001 - 3,000 (~USD $452 – USD $676)	96	23.3
	3,001 - 4,000 (~USD $677 – USD $902)	126	30.6
	4,001 - 5,000 (~USD $903 – USD $1,128)	64	15.5
	5,001 - 6,000 (~USD $1,129 – USD $1,354)	30	7.3
	6,001 - 7,000 (~USD $1,355 – USD $1,580)	28	6.8
	7,001 - 8,000 (~USD $1,581 – USD $1,806)	13	3.2
	8,001 - 9,000 (~USD $ 1,807– USD $2,031)	4	1.0
	9,001 - 10,000 (~USD $2,032 – USD $2,257)	3	0.7
	10,000 and above (~USD $2,258 and above)	7	1.7
Monthly expenses on EFP	0 - 50 (~USD $0 - USD $11.29)	7	1.7
(environmentally friendly	51 - 100 (~USD $11.51 – USD $22.58)	33	8.0
products) (MYR)	101 - 150 (~USD $22.80 – USD $33.87)	49	11.9
	151 - 200 (~USD $34.09 – USD $45.16)	53	12.9
	201 - 250 (~USD $45.38– USD $56.45)	79	19.2
	251 - 300 (~USD $56.67 – USD $67.64)	61	14.8
	301 - 350 (~USD $67.96 – USD $79.03)	43	10.4

351 - 400 (~USD $79.26 – USD $90.33)	37	9.0
401 and above (~USD $90.55 and above)	50	12.1

Table 2.

Results of measurement model.

Construct	Item	Loading	AVE	Cronbach's α	CR	Source
Environmental literacy (ENL)	ENL1: I know more about environmental issues than the average person.	0.885	0.803	0.918	0.942	(Issock *et al.*, 2018)
	ENL2: I know how to select products that reduce environmental problems.	0.906				
	ENL3: I am knowledgeable about the certification/labels of eco-friendly products.	0.899				
	ENL4: I am very knowledgeable about environmental issues.	0.894				
Environmental concern (ENC)	ENC1: I am concerned about air pollution.	0.909	0.818	0.889	0.931	(Issock *et al.*, 2018)
	ENC2: I am concerned about natural resources depletion/reduction.	0.904				
	ENC3: I am concerned about climate change.	0.901				
Eco-responsible practices (ERP)	ERP2: I will save water when bathing and cleaning.	0.834	0.688	0.887	0.917	(Zhang *et al.*, 2018)
	ERP3: When I leave the room, I will turn off the lights.	0.814				

	ERP4: I will avoid using air conditioners when I am in a room/own space.	0.819				
	ERP5: I will choose eco-friendly lights when purchasing lights.	0.864				
	ERP7: I prefer choosing products with eco-friendly certification/labels.	0.816				
Buying intent (BUI)	BUI1: I intend to purchase eco-friendly products.	0.862	0.754	0.918	0.939	Issock *et al.* (2018)
	BUI2: I am willing to purchase eco-friendly products over non-eco-friendly products.	0.863				
	BUI3: I will make an effort to purchase eco-friendly products.	0.890				
	BUI4: I intend to buy eco-friendly products the next time I purchase them.	0.867				
	BUI5: I intend to engage in activities related to purchasing eco-friendly products in my daily life.	0.859				
Attitude (ATT)	ATT1: I believe that non-eco-friendly products have the potential to cause significant environmental issues.	0.797	0.644	0.862	0.900	(Wang *et al.*, 2019)
	ATT2: I have a sense of guilt if I do not buy eco-friendly products.	0.801				
	ATT3: I am motivated to purchase eco-friendly products because of the environmental problems.	0.788				

ATT4: I am happy with my purchase of an eco-friendly products.	0.816
ATT5: I will increase my effort to purchase an eco-friendly product as these will help with the environment.	0.808

Notes: AVE = Average variance extracted, Cronbach's α = Cronbach alpha, CR = Composite reliability; ATT = Attitude, BUI = Buying intent, ERP = Eco-responsible practices; ENC = Environmental concern; ENL = Environmental literacy. The below items (ERP1, ERP6 and BUB4) were deleted: ERP1: Despite having my own transportation, I prefer using public transportation daily; ERP6: I prefer to buy a car with fuel savings; BUB4: I have been purchasing energy efficient appliances because of the rebates/tax credits/other incentives offered.

Source: Authors' own illustration

Table 3.

Assessment of discriminant validity using Heterotrait-monotrait (HTMT) ratio of correlations.

	ATT	BUI	ERP	EVC	EVL
ATT					
BUI	*0.673*				
ERP	0.525	*0.639*			
ENC	0.529	0.623	*0.697*		
ENL	0.753	0.611	0.513	*0.641*	

Notes: Diagonal figures are square roots of AVE, while regular figures are correlations between constructs. ATT = Attitude; BUI = Buying intent; ERP = Eco-responsible practices; ENC = Environmental concern; ENL = Environmental literacy. HTMT < 0.85 (Henseler *et al.*, 2015).

Source: Authors' own illustration

Table 4.

Structural model results.

Effect	Hypothesis	Std Beta	Std Error	*t*-value	*p*-value	BCCI 95% LB	BCCI 95% UB	VIF	f^2	R^2	$Q^2predict$
Direct	H1: ENL -> ENC	0.588	0.050	11.729***	0.000	0.501	0.666	1.000	0.528 (L)	0.346	0.335
	H2: ENC -> BUI	0.186	0.068	2.772**	0.003	0.083	0.307	1.817	0.041 (S)		
	H3: ENC -> ERP	0.497	0.050	9.955***	0.000	0.415	0.576	1.367	0.321 (M)	0.437	0.238
	H4: ERP -> BUI	0.274	0.057	4.838***	0.000	0.179	0.366	1.753	0.090 (S)	0.527	0.386
Indirect	H5: ENL -> ENC -> BUI	0.110	0.041	2.692**	0.004	0.048	0.184				
	H6: ENL -> ENC -> ERP -> BUI	0.080	0.023	3.502***	0.000	0.048	0.121				
Interaction	H7: ATT*ENC -> ERP	-0.082	0.046	1.778*	0.038	-0.152	-0.004		0.014 (T)		
	H8: ATT*ERP -> BUI	-0.129	0.042	3.090***	0.001	-0.195	-0.059		0.043 (S)		

Notes: ATT = Attitude; BUI = Buying intent; ERP = Eco-responsible practices; ENL = Environmental literacy; ENC = Environmental concern; ***p < 0.001, **p < 0.01, *p < 0.05; Std Beta = Standard Beta; Std Error = Standard Error; BCCI = Bias-corrected bootstrap confidence interval; LB = Lower Bound; UB = Upper Bound; VIF = Variance Inflation Factor; R^2 = Coefficients of determination; $Q^2predict$ = Predictive relevance; Effect size (f^2): T = Trivial (< 0.02), S = Small (0.02-0.15), M = Medium (0.15-0.35), L = Large (> 0.35) (Cohen, 1988).

Source: Authors' own illustration

Table 5.

The PLSpredict results.

Item	$Q^2predict$	PLS-SEM_RMSE	LM_RMSE	PLS-SEM_RMSE - LM_RMSE	Decision
BUI1	0.302	0.774	0.774	0.000	
BUI2	0.265	0.749	0.730	0.019	
BUI3	0.297	0.748	0.751	-0.003	
BUI4	0.208	0.771	0.761	0.010	
BUI5	0.366	0.769	0.787	-0.018	
ERP2	0.186	0.875	0.878	-0.003	
ERP3	0.089	0.924	0.920	0.004	Medium predictive power
ERP4	0.165	1.021	1.028	-0.007	
ERP5	0.172	0.857	0.866	-0.009	
ERP7	0.201	0.818	0.806	0.012	
ENC1	0.214	0.795	0.782	0.013	
ENC2	0.306	0.766	0.769	-0.003	
ENC3	0.289	0.770	0.768	0.002	

Note(s): $Q^2predict$ = Predictive relevance; PLS-SEM = Partial least squares structural equation modelling; RMSE = Root mean squared error; LM = Linear model. BUI = Buying intent; ERP = Eco-responsible practices; ENC = Environmental concern; ENL = Environmental literacy. PLS-SEM_RMSE must produce smaller values than LM_RMSE, thus generating negative values in PLS-SEM_RMSE - LM_RMSE.

Source: Authors' own illustration