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From Values to Action: Unpacking the Serial Mediation of Environmental Concern and Perceived Consumer Effectiveness in Eco-Consumerism

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Keywords:
Environmental values, Environmental Concern, Perceived Consumer Effectiveness, Eco-Consumerism, Theory of Planned Behavior.

ABSTRACT

The study examines the impact of environmental values on eco-consumerism, with a focus on the serial mediating roles of environmental concern and perceived consumer effectiveness (PCE). Grounded on the assumptions of theory of Planned Behavior, the study proposes that environmental values influence eco-consumerism not directly, but through a serial mediating mechanism of environmental concern and PCE. The data were collected through convenience sampling technique from 410 individuals above 18 and was analyzed through Andrew Hayes Process Macro Model 6 for serial mediation in the SPSS version 25. The results revealed that while the direct effect of environmental values on eco-consumerism was not significant, the total effect was significant and fully mediated through environmental concern and PCE—both independently and in sequence. These findings offer a nuanced understanding of how environmental values are translated into pro-environmental behavior through key psychological mechanisms. By integrating TPB's components of attitudes (concern) and perceived behavioral control (PCE), this study contributes to theoretical advancement and provides practical implications for promoting green consumption. The research highlights the importance of cultivating both environmental concern and consumer self-efficacy to drive meaningful eco-consumer actions.

INTRODUCTION

Consumerism has expanded at an extraordinary rate since the mid-20th century which now drives enormous production volumes while generating massive consumption and waste that heavily strains environmental resources (Permana & Ekowati, 2024). The traditional consumerism model which emphasizes mass consumption and material accumulation faces growing criticism because it delivers short-term satisfaction at the cost of long-term sustainability (Sawant & Nayak, 2024). Both consumers and policymakers increasingly recognize the need for a fundamental transformation, as the escalating challenges of climate

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change, environmental pollution, and resource depletion demand urgent and comprehensive action (Menzies, 2024; Permana & Ekowati, 2024). Eco-consumerism has emerged as the new consumer trend that prioritizes ethical responsibility together with environmental protection and social equity (Boström & Klintman, 2008; Jain & Jain, 2019; Sawant & Nayak, 2024). The practice of eco-consumerism extends beyond product selection because it requires people to completely transform their consumption patterns and underlying motivations (Moisander, 2007; Slijepcevic, 2023). Eco-consumerism promotes decreased consumption of unnecessary items and encourages support for sustainable production systems and purchasing choices which protect future generations(Isac et al., 2024; Moraga et al., 2025). The rise of eco-consumerism serves as a corrective response to consumerism by directly challenging its basic principles and seeking to integrate ecological and ethical requirements into consumption patterns (Ibrahim, 2022; Moraga et al., 2025; Zameer & Yasmeen, 2022). The advancement of environmental science brought increasing public worry about sustainability issues. The 1987 Brundtland Report, "Our Common Future", established sustainable development as the core principle which shapes contemporary eco-consumer perspectives. According to the report people should fulfill their present needs without depleting resources that future generations need to meet their needs. The 1992 Earth Summit (Rio Conference) stood as a significant milestone which advanced sustainable development principles that affected global policy and consumer conduct. The mainstream consumer vocabulary includes terms such as "carbon footprint," "organic," "recyclable," and "green products." Eco-consumerism developed from a fringe interest into a widespread market expectation because of climate change discussions and international climate agreements such as the Paris Agreement as well as rising environmental awareness among younger generations. Research about consumer behavior and corporate sustainability strategies now recognizes this as a fundamental component. Global consumer data from Nielsen IQ shows that 73% of people worldwide indicate they would adjust their purchasing decisions to decrease environmental harm. The 2022 Gallup Pakistan study found that 48% of urban consumers in Pakistan choose eco-friendly products whenever they are available which demonstrates growing green awareness in developing markets. Eco-consumerism has emerged as a popular worldwide movement because people are increasingly concerned about the environment and ethical practices and government rules. People practice eco-consumerism through their conscious selection of environmentally friendly products which are ethically made and socially responsible. The world has shifted its consumption habits because people now understand better the environmental consequences of climate change along with pollution and sustainability issues. People who follow eco-consumerism choose products

that create low environmental impact by selecting recyclable materials and organic items and energy-efficient technologies (Ottman, 2011).

While the existing literature provides valuable insights into the predictors of eco-consumerism, several critical limitations suggest the need for a more integrated and psychologically grounded model. For example, Arpaci et al. (2024) emphasize digital literacy, global social responsibility, and environmental attitudes as predictors of eco-consumerism among emerging adults. However, their study is largely predictive and does not unpack the underlying psychological mechanisms through which these values result in behavior. Sahoo et al. (2024), though the Theory of Planned Behavior (TPB), employs a meta-analytic approach that aggregates findings without exploring the *processes* through which attitudes are formed or transformed into intentions and actions. Likewise, Wang et al. (2024) attempt to enrich the TPB framework using Self-Determination Theory but stop short of modeling sequential mediating variables, such as emotional activation and perceived efficacy, that explain how motivation is translated into green behavior. Furthermore, Shang et al. (2024) and Hoang and Tung (2024) focus on moderating variables like sustainability awareness and marketplace influence, yet fail to clarify *how* internal value systems channel into behavioral outcomes. These studies commonly overlook the value–behavior gap and do not capture the serial psychological processes that could account for this disconnect.

Many of these studies overlook the persistent value–behavior gap—the well-documented discrepancy between individuals' pro-environmental values and their actual sustainable consumption behaviors. This gap suggests that the presence of environmental values alone does not guarantee the translation into eco-friendly consumer actions. To better understand this, disconnect, it is essential to consider the underlying psychological mechanisms that mediate this relationship. Two key constructs—environmental concern and perceived consumer effectiveness (PCE)—are particularly relevant in this context. Environmental concern reflects an individual's emotional and cognitive engagement with environmental issues, while PCE refers to the belief that one's individual actions can make a meaningful difference in addressing environmental challenges.

Integrating these mediators into the framework aligns with the Theory of Planned Behavior (TPB), which posits that behavioral intentions—and ultimately behaviors—are shaped by attitudes, subjective norms, and perceived behavioral control. In this context, environmental concern can be seen as influencing the attitudinal component, strengthening positive evaluations of sustainable behaviors. Meanwhile, perceived consumer effectiveness enhances

an individual's perceived behavioral control, making them more likely to believe that engaging in eco-consumerism is both feasible and impactful.

Moreover, these two constructs may not operate independently but rather in a serially mediated pathway. Specifically, individuals with strong environmental values are likely to develop higher environmental concern, which in turn fosters a stronger belief in their own ability to make a difference—that is, perceived consumer effectiveness. This enhanced sense of efficacy then increases the likelihood of engaging in eco-consumer behaviors. Thus, environmental concern and PCE function in a sequential chain, where concern activates cognitive engagement with environmental issues, and PCE converts that concern into actionable confidence, ultimately leading to pro-environmental consumer behavior. This serial mediation provides a more comprehensive explanation for how deep-seated values translate into meaningful action and helps bridge the often-noted value–behavior gap in sustainability research.

The proposed study makes a significant theoretical and practical contribution by addressing a long-standing issue in environmental psychology and consumer behavior literature—the value–behavior gap. While prior research has established the importance of environmental values in shaping sustainable consumption intentions, the inconsistent translation of these values into actual behavior remains underexplored. This study contributes by introducing and empirically testing a serial mediation model, where environmental concern and perceived consumer effectiveness (PCE) sequentially mediate the relationship between environmental values and eco-consumerism. This nuanced model not only clarifies *how* and *why* individuals with strong environmental values may or may not engage in pro-environmental consumption but also extends the Theory of Planned Behavior (TPB) by unpacking the psychological mechanisms embedded within its attitudinal and control components. By theorizing environmental concern as an affective-attitudinal construct and PCE as a perception of control, the study bridges classical TPB with emerging constructs that are contextually relevant to environmental behavior. This theoretical advancement offers a richer, more dynamic understanding of sustainable consumer decision-making and provides a robust foundation for future behavioral interventions. On a practical level, the findings can inform the design of targeted awareness campaigns and policy measures that not only promote environmental concern but also enhance consumers' belief in their ability to effect change, thereby transforming passive concern into empowered action. In doing so, the study offers actionable insights for marketers, environmental organizations, and policymakers seeking to foster deeper and more consistent eco-conscious consumer behavior.

Hypotheses Development

Environmental values and Eco-consumerism

The scientific literature has established environmental values as a fundamental psychological basis which drives eco-consumerism (Afridi, Shahjehan, et al., 2021; Arpaci et al., 2024; Isac et al., 2024). People develop their ethical perspectives about nature and sustainability through three categories: biospheric which concerns nature, altruistic which shows concern for others, and egoistic which focuses on self-interest (Bell, 2023; De Groot & Steg, 2008; Dey et al., 2022; Guo et al., 2023). Multiple recent studies demonstrate environmental values maintain a steady positive relationship with pro-environmental purchasing behavior (see e.g, Afridi, Shahjehan, et al., 2021; Moraga et al., 2025; Rana & Solaiman, 2023). People who hold strong environmental values tend to make decisions based on ecological factors which include buying green products and avoiding plastic and supporting sustainable brands (Arpaci et al., 2024; Rana & Solaiman, 2023; Sajid et al., 2025).

Environmental values drive actual consumer behavior in eco-consumerism by affecting both purchase decisions and willingness to pay extra for eco-labeled products (Caniëls et al., 2021; Chaihanchanchai & Anantachart, 2023). These values create moral obligation and psychological ownership which strengthen internal motivation to act sustainably despite the absence of external rewards (Bhardwaj et al., 2023; Parker et al., 2023).

Furthermore, The TPB (Ajzen, 1991) provides a detailed model which explains the connection between different variables. The TPB states that behavioral intentions develop from attitudes toward behavior together with subjective norms and perceived behavioral control. In this case, the Environmental values affect the attitudinal part of consumers because those who hold stronger pro-environmental attitudes tend to form intentions toward eco-friendly consumption (Arpaci et al., 2024; Dou et al., 2025; Moraga et al., 2025). The more consumers understand that their personal actions can produce meaningful change (perceived behavioral control) the more they will act according to their values (Ajzen, 1991; Chaihanchanchai & Anantachart, 2023; Isac et al., 2024). Environmental values serve as the foundational moral force that drives consumers to develop pro-environmental intentions and behaviors even though attitudes may not guarantee sustainable behavior. The transformation of values into behavior becomes clear through TPB when consumers perceive social support (subjective norms) and control over their actions (perceived control). Environmental values function as essential yet insufficient elements which determine eco-consumerism. The successful achievement of sustainable consumer change requires interventions to address all components of the TPB while focusing on the underlying values.

On the basis of all this empirical evidence we propose the following hypothesis:

H1: There is a significant impact of environmental values on eco-consumerism

Environmental Values and Environmental Concern

Research demonstrates that environmental concern develops primarily from biospheric and altruistic values which drive individuals to care about environmental degradation(Chaihanchanchai & Anantachart, 2023; De Groot & Steg, 2008). Environmental concern functions as a critical psychological factor which predicts various eco-friendly actions such as recycling and energy conservation and sustainable consumption (Afridi, Shahjehan, et al., 2021; Hoang & Tung, 2024). Previous research demonstrates that values create concern instead of concern creating values (Hoang & Tung, 2024; Yu et al., 2023; Zeng et al., 2023). People who strongly value the biosphere develop a moral responsibility toward nature that intensifies their emotional and cognitive environmental concern (Afridi, Shahjehan, et al., 2021; Pandey & Yadav, 2023; Song et al., 2021; Stern & Dietz, 1994). Moreover, TPB also provides additional support while stating that concern is shaped by environmental values and fosters favorable attitudes toward pro-environmental actions (Afridi, Shahjehan, et al., 2021; Ajzen, 1991; Hoang & Tung, 2024). As a result, values serve as the psychological foundation, while concern serves as the driving force behind long-lasting goals and deeds. In the absence of strong environmental values, concern is more likely to be reactive and surface-level than long-term and proactive. In order to cultivate deep, enduring environmental concern and behavior change, it is strategically imperative to cultivate biospheric and altruistic values.

On the basis of above discussion, we proposed that:

H2: *Environmental Values significantly affect Environmental Concern.*

Environmental concern and perceived consumer effectiveness

Research continuously demonstrates that those who care more about the environment are more likely to think that their personal actions can have a positive impact on the environment (Ferreira et al., 2023; Pandey & Yadav, 2023; Rahman et al., 2023; Stojanova et al., 2023). According to Kim and Lee (2023), environmental concern essentially stimulates moral awareness and urgency, and this emotional engagement fosters a belief in personal efficacy, or PCE.

For instance, a customer who is very concerned about climate change is more likely to think that minimizing plastic waste or purchasing energy-efficient products will help to lessen environmental harm. PCE and perceived behavioral control (PBC) are conceptually related in the Theory of Planned Behavior (Ajzen, 1991). According to TPB, people are more likely to make plans and carry out actions when they think they have control over how things turn out.

Particularly in environmental domains, environmental concern shapes attitudes and can act as an affective and cognitive prelude to perceived control (Afridi, Asad, et al., 2023; Afridi, Javed, et al., 2023). Therefore, through its impact on PCE, concern indirectly increases behavioral intention and actual behavior.

Promoting sustainable consumer behavior requires more than just environmental concern. To transform awareness into action, concern must be combined with a belief in personal impact, or PCE (Hanss & Doran, 2020; Stojanova et al., 2023). By fostering consumer confidence in the effectiveness of their actions, environmental concern, as seen through the TPB lens, improves attitudes and fortifies perceived behavioral control (Afridi, Khan, et al., 2021; Ajzen, 1991). As a result, encouraging concern without developing PCE results in passive eco-anxiety rather than action. The most reliable route to sustainable behavior is a dual strategy that increases consumer effectiveness and environmental concern.

H4: *There is a significant relationship between environmental concern and perceived consumer effectiveness*

Mediation of Environmental concern between environmental values and eco-consumerism

Environmental values, especially biospheric and altruistic values, are considered stable psychological dispositions that guide the way in which people evaluate and respond to environmental issues (De Groot & Steg, 2008; Dou et al., 2025; Guo et al., 2023). They are core in influencing environmental concern - a particular attitude toward the environment that encompasses people's affect-laden and cognitive responses to environmental deterioration(Afridi, Shahjehan, et al., 2021; Hoang & Tung, 2024; Ibrahim et al., 2025; Pandey & Yadav, 2023). However, eco-consumerism denotes a consumer's inclination to buy and act in ways that have a reduced detrimental impact on the environment (Peattie, 2010). Recently, some empirical works support that environmental concern mediates the relationship between environmental values and eco-consumer behavior. For instance, individuals who endorse biospheric values do not directly take on green behaviors, but have the willingness and concerns about harm to the environment (i.e., environmental concerns) driven by values (Bouman et al., 2020; Guan et al., 2023; Yasir et al., 2023). This concern serves as the emotional and cognitive bridge of moral orientation (values) to actual consumer behaviours, such as buying organic, rejecting plastics, or selecting environmentally friendly tourism (Pandey & Yadav, 2023). As characterized by the Theory of Planned Behavior (Ajzen, 1991), environmental concern is frequently represented as an attitudinal precursor—a fundamental link and intermixture between attitude and behavior. Values impact on attitudes to the behaviour and environmental concern focuses this attitude by bringing moral salience, urgency

and relevance. As a result, strong environmental values create concern, which leads to positive attitudes, higher intention in eco-consumerism (Menzies, 2024; Permana & Ekowati, 2024; Sawant & Nayak, 2024). This is consistent with enhanced TPB models including affective and moral factors to make better predictions to pro-environmental conduct. Although the environmental values constitute the motivational base, in and of themselves, they are too abstract to directly determine behavior. Environmental concern functions as mediator, not only cognitive mediator, but also affective mediator, that transfers value-based orientation into concrete eco-consumer behavior (Menzies, 2024; Permana & Ekowati, 2024). This mediation adds to the predictive ability of attitudes within the TPB model, since it imbues attitudes with moral salience. Thus, the promotion of environmental values in the absence of environmental concern may lead to an inert acceptance instead of a pro-environmental behavior. Activities creating value- based anxiety will have a greater chance of triggering long-term eco-consumer behavior.

H5: *There Is a Significant Mediating Role of Environmental Concern on Environmental Values and Eco-Consumerism*

Mediation of perceived consumer effectiveness environmental values and eco-consumerism

A deep-seated ethical concern for the environment and future generations is represented by environmental values, particularly biospheric and altruistic orientations (AbdelAziz et al., 2023; Almazrouei et al., 2024; De Groot & Steg, 2008). Although these values are positively associated with sustainable consumption patterns, studies reveal that, unless perceived consumer effectiveness (PCE) acts as a mediating factor, they frequently do not translate directly into eco-consumerism (Afridi, Khan, et al., 2021; Afridi, Shahjehan, et al., 2021; Arpaci et al., 2024; Chaihanchanchai & Anantachart, 2023; Noh & Liu, 2024). Strong environmental values make consumers more likely to think that their actions have an impact, which in turn makes them more likely to practice eco-consumerism (Chaihanchanchai & Anantachart, 2023; Dou et al., 2025). Customers are empowered to act on their values rather than just passively because of this belief in personal impact. According to recent research, PCE serves as a cognitive and motivational conduit for the conversion of environmental values into sustainable behavior (Shao et al., 2021). PCE closely resembles the perceived behavioral control component when viewed through the prism of the Theory of Planned Behavior (Ajzen, 1991). Although TPB contends that attitudes are influenced by values, PCE stands for the consumer's sense of efficacy or control, which facilitates the formation and fulfillment of intentions. In extended TPB models, where environmental values impact PCE, which forecasts

attitudes, intentions, and actual eco-behavior, this integration has been confirmed (Hanss & Doran, 2020; Noh & Liu, 2024; Pandey & Yadav, 2023).

Moral motivation is provided by environmental values, but they are frequently insufficient to influence behavior if one does not believe that one's actions will be effective (Hoang & Tung, 2024; Stojanova et al., 2023). PCE reinforces the consumer's role as a change agent by converting values into self-efficacy. PCE plays a crucial role in influencing perceived behavioral control and enhancing intention within the TPB framework (Afridi, Shahjehan, et al., 2021; Ajzen, 1991). Therefore, PCE is the primary psychological mechanism that permits value-consistent behavior, not merely a mediator. Therefore, encouraging eco-consumerism necessitates not only fostering environmental values but also giving customers the confidence that their decisions have an impact.

H6: *There is a Significant Mediating Role of perceived consumer effectiveness on Environmental Values and Eco-Consumerism*

Serial mediation of environmental concern and perceived consumer effectiveness

Environmental values have been recognized as fundamental psychological constructs that predispose people to eco-friendly attitudes and behaviors in the expanding corpus of research on sustainability and green behavior (Bhardwaj et al., 2023; Chaihanchanchai & Anantachart, 2023; De Groot & Steg, 2008; Dou et al., 2025). But the relationship between values and behavior is convoluted and indirect, frequently necessitating the involvement of cognitive and motivational mediators. According to recent empirical research, the impact of environmental values on eco-consumerism is successively transmitted by environmental concern and perceived consumer effectiveness (Hoang & Tung, 2024; Stojanova et al., 2023).Strong biospheric or altruistic values are associated with increased environmental concern, which is the emotional and mental engagement with the condition of the environment (Noh & Liu, 2024; Pandey & Yadav, 2023).

These worries are a result of the moral significance that these values hold, which makes people believe that environmental concerns are urgent and personally relevant (Yu et al., 2023; Zeng et al., 2023). People who are concerned are more likely to think that their actions count. Concern encourages moral responsibility, internal motivation, and a belief in behavioral efficacy, which leads to such behavioral change (Hanss & Doran, 2020; Noh & Liu, 2024). Customers are more likely to practice eco-consumerism, a pattern of behavior that includes reducing consumption, choosing sustainable brands, and purchasing green products, when they think their actions are effective (Arpaci et al., 2024; Bhardwaj et al., 2023; Dou et al., 2025). By promoting behavioral control and personal accountability, PCE acts as the proximal driver

that motivates action. This serial mediation fits neatly into the cognitive–motivational architecture of the Theory of Planned Behavior (Ajzen, 1991). Environmental concern, which in turn refines attitudes toward pro-environmental behavior, is fueled by environmental values. One type of perceived behavioral control (PBC) that supports the idea that behavior is effective and actionable is PCE. Concern and PCE work together to influence behavioral intentions and, eventually, eco-consumer behavior. Numerous studies have provided support for this expanded TPB model. For instance, Han and Hyun (2018) discovered that the relationship between moral norms and intentions for green travel was jointly mediated by environmental concern and PCE. Similarly, serial mediation models involving concern and PCE in sustainable consumption were directly empirically supported by Goh et al. (2023).Environmental values serve as motivational seeds, but they hardly ever develop into sustainable behavior in the absence of concern (emotional activation) and PCE (cognitive empowerment). PCE facilitates agency; concern generates urgency. Through the integration of affective and cognitive dimensions, these mediators enhance the predictive power of TPB. A more realistic and psychologically sound route from internal values to visible eco-consumerism is thus captured by a serial mediation model.

H7: ***Environmental concern and perceived consumer effectiveness in turn serially mediate the environmental knowledge and sustainable consumption behavior.***

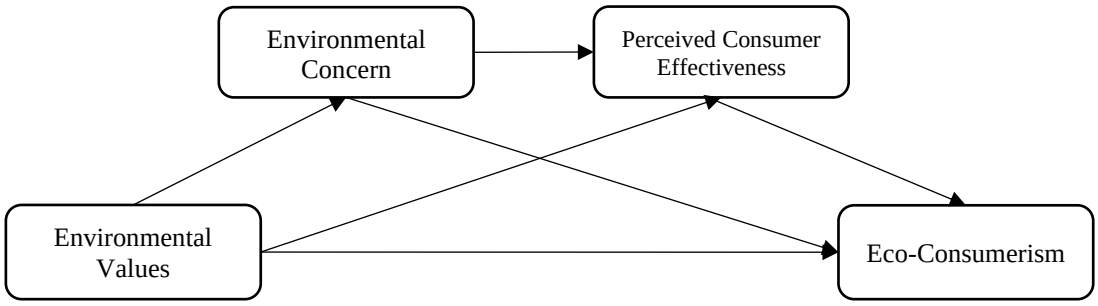

Figure No. 1: Conceptual Framework

METHODOLOGY

Participant and Procedure

The study employed a quantitative, cross-sectional survey design to collect data from general consumers across various urban and semi-urban regions. Participants included individuals aged 18 and above who had engaged in purchasing consumer goods within the past six months, ensuring relevance to the context of eco-consumerism. A non-probability convenience sampling technique was used to reach a diverse demographic through online platforms (e.g., social media, email, WhatsApp) and offline channels (e.g., shopping centers, community events). Respondents were invited to complete a structured questionnaire comprising validated

scales measuring environmental values, environmental concern, perceived consumer effectiveness, and eco-consumer behaviors. Prior to data collection, ethical approval was obtained, and participants were informed about the voluntary nature of their participation, the anonymity of responses, and the overall purpose of the study. To ensure data quality, attention-check items were included, and incomplete responses were excluded from the analysis. The final sample consisted of 410 respondents, which met the recommended criteria for conducting structural equation modeling (SEM) to test the hypothesized relationships and serial mediation effects. The sample was predominantly male (79.5%) and highly educated, with over half (51.2%) holding a university degree. Most respondents (74.1%) were aged between 21 and 40 years, indicating a young and educated demographic profile (see table no.1)

Table No. 1

Table: Demographic Characteristics of Respondents (N = 410)

Variable	Category	Frequency	Percent (%)	Cumulative Percent (%)
Gender	Male	326	79.5	79.5
	Female	84	20.5	100.0
Age	Less than 20	40	9.8	9.8
	21–30	201	49.0	58.8
	31–40	103	25.1	83.9
	41–50	47	11.5	95.4
	50+	19	4.6	100.0
Education	Elementary School	24	5.9	5.9
	Secondary Education	49	12.0	17.8
	Graduate	105	25.6	43.4
	Diploma	22	5.4	48.8
	University	210	51.2	100.0

Measurement

For this study, well-established and validated scales were adopted to measure the key constructs. Environmental values were measured using the Revised New Ecological Paradigm (NEP) scale developed by Dunlap et al. (2000), which consists of 15 items assessing pro-ecological worldviews such as the belief in the limits to growth, the fragility of nature's balance, and the rejection of anthropocentrism. Sample item includes "Humans are severely abusing the environment" and the Cronbach's alpha was recorded as 0.82. To assess environmental concern, a 10-items scale was adapted from Schultz's (2001) Environmental Concern Scale, which captures individuals' affective and cognitive concern for the environment, including concern for self, others, and the biosphere. The sample items include "I am very concerned about environmental issues" with Cronbach's alpha value 0.79. PCE was

measured using 5-items scale developed by Ellen, Wiener, and Cobb-Walgren (1991), which evaluates the extent to which individuals believe their personal consumption choices can contribute to solving environmental problems. The sample items include "Each consumer's actions can have an impact on solving environmental problems" with Cronbach's alpha score of 0.85. Lastly, eco-consumerism was measured using the Ecologically Conscious Consumer Behavior (ECCB) scale with 11 items proposed by Roberts (1996), which captures behaviors such as purchasing eco-friendly products, recycling, and avoiding products that harm the environment. The sample items include "I have purchased products because they cause less pollution" with Cronbach's alpha value of 0.81. All items were rated on a five-point Likert scale ranging from strongly disagree to strongly agree. These scales have demonstrated strong psychometric properties in prior research and are suitable for use in diverse consumer populations.

ANALYSIS

Correlation Matrix

The correlation table shows that all variables are significantly and positively correlated ($p < .001$), with the strongest relationship observed between environmental concern and eco-consumerism ($r = .517$), followed by PCE and environmental concern ($r = .498$). These results suggest that higher environmental values, concern, and perceived consumer effectiveness are associated with increased eco-consumer behavior.

Table No.2

Correlations

Control Variables			ENV	PCE	MNOR	ECONSUM
Gender & Age Education	&ENV	Correlation	1.000	.459	.416	.340
		Significance (2-tailed)	.	.000	.000	.000
		df	0	405	405	405
	PCE	Correlation	.459	1.000	.498	.451
		Significance (2-tailed)	.000	.	.000	.000
		df	405	0	405	405
	MNOR	Correlation	.416	.498	1.000	.517
		Significance (2-tailed)	.000	.000	.	.000
		df	405	405	0	405
	ECONSUM	Correlation	.340	.451	.517	1.000
		Significance (2-tailed)	.000	.000	.000	.
		df	405	405	405	0

The serial mediation analysis aimed to examine how environmental values (ENV) influence eco-consumerism (ECONSUM) through two key mediators: environmental concern (ECnrn) and perceived consumer effectiveness (PCE). The analysis was conducted with a sample of 410 respondents using PROCESS Model 6.

A. Direct and Mediated Paths (Regression Paths)

The standardized regression results indicate that ENV significantly predicts ECnrn ($\beta = 0.4131$, $p < .001$), suggesting that individuals with strong environmental values are more likely to express concern for the environment. In turn, ECnrn strongly predicts PCE ($\beta = 0.3829$, $p < .001$), and both ECnrn ($\beta = 0.3785$, $p < .001$) and PCE ($\beta = 0.2352$, $p < .001$) significantly predict eco-consumer behavior. However, the direct path from ENV to ECONSUM was not statistically significant ($\beta = 0.0717$, $p = .1268$), indicating that environmental values alone do not directly lead to eco-consumerism when mediators are included.

B. Total, Direct, and Indirect Effects

The total effect of environmental values on eco-consumerism was positive and significant (effect = 0.4061, BootCI [0.2947, 0.5176]), showing that ENV is a strong overall predictor of eco-consumer behavior. However, the direct effect became non-significant (effect = 0.0871, BootCI [-0.0248, 0.1991]) when mediators were introduced, confirming a full mediation model.

More importantly, the total indirect effect was significant (effect = 0.3190, BootCI [0.2373, 0.4068]), with three specific pathways contributing:

- Ind1 (ENV → ECnrn → ECONSUM): Effect = 0.1899 — the strongest mediation path, indicating that environmental concern alone significantly channels the effect of environmental values toward eco-consumer behavior.
- Ind2 (ENV → PCE → ECONSUM): Effect = 0.0839 — indicating that PCE also serves as an independent mediator, though to a lesser extent than ECnrn.
- Ind3 (ENV → ECnrn → PCE → ECONSUM): Effect = 0.0452 — demonstrating a significant serial mediation path where environmental values increase concern, which enhances perceived effectiveness, ultimately promoting eco-consumerism.

Table 3: Summary of Serial Mediation Analysis (Model 6)

Sample Size: 410

A. Regression Paths

Path	B (Unstd.)	β (Std.)	t-value	p-value	R^2
ENV → ECnrn	0.4934	0.4131	9.16	< .001	0.1706
ENV → PCE	0.2590	0.2936	6.57	< .001	
ECnrn → PCE	0.2828	0.3829	8.57	< .001	0.3257
ENV → ECONSUM	0.0871	0.0717	1.53	.1268	
ECnrn → ECONSUM	0.3850	0.3785	7.82	< .001	
PCE → ECONSUM	0.3239	0.2352	4.76	< .001	0.3311

B. Total, Direct, and Indirect Effects of ENV on ECONSUM

Effect Type	Path	Effect	BootLLCI	BootULCI	Significance
Total Effect	ENV → ECONSUM	0.4061	0.2947	0.5176	Significant
Direct Effect	ENV → ECONSUM (c′)	0.0871	-0.0248	0.1991	Not Significant
Indirect Effects	**Total Indirect**	0.3190	0.2373	0.4068	Significant
	Ind1: ENV → ECnrn → ECONSUM	0.1899	0.1175	0.2723	Significant
	Ind2: ENV → PCE → ECONSUM	0.0839	0.0398	0.1400	Significant
	Ind3: ENV → ECnrn → PCE → ECONSUM	0.0452	0.0224	0.0766	Significant

DISCUSSION

The study was intended to examine the impact of environmental values on eco-consumerism through a serial mediating path of environmental concern and perceived consumer effectiveness. For this purpose, that data was collected through convenience sampling from 410 individuals aged 18 and above who had engaged in purchasing consumer goods within the past six months. The data was analyzed through Andrew hayes Process Macro, model 6. The results indicate that environmental values significantly influence individual eco-consumerism behavior directly and through serially mediated mechanism of environmental concern and PCE.

These findings align with and extend previous research. For example, prior studies have consistently shown that environmental values predict environmental concern (Bhardwaj et al., 2023; Dou et al., 2025; Hoang & Tung, 2024; Pandey & Yadav, 2023), and that concern can translate into behavioral outcomes, such as sustainable consumption (Bhardwaj et al., 2023; Chaihanchanchai & Anantachart, 2023). Similarly, the role of PCE as a predictor of pro-

environmental behavior has been emphasized in the literature (Noh & Liu, 2024; Pandey & Yadav, 2023). However, many past studies have treated these mediators in isolation, overlooking the sequential psychological process through which environmental values evolve into meaningful behavior. This study addresses this gap by demonstrating that environmental concern not only mediates the relationship between values and behavior but also serves as a precursor to perceived consumer effectiveness, which in turn influences eco-consumerism.

Grounded in the TBP, the study offers important theoretical insights. TPB posits that behavior is driven by intention, which is in turn influenced by attitudes, subjective norms, and perceived behavioral control. In this context, environmental concern reflects a positive attitude toward the environment, while PCE aligns with perceived behavioral control—a belief in one's ability to influence environmental outcomes through consumption choices. By empirically validating a model where values shape attitudes (concern), which enhance perceived control (PCE), and ultimately lead to eco-consumerism, this study contributes to a nuanced understanding of behavioral intention formation and action in the realm of sustainable consumption.

Overall, this research offers significant value by unpacking the value–attitude–control–behavior pathway in a single, integrative model. It not only confirms the psychological mechanisms driving eco-consumerism but also provides actionable implications for policymakers and marketers aiming to promote green consumer behavior. Encouraging environmental concern and strengthening individuals' belief in their impact as consumers could be more effective than relying on value-driven campaigns alone.

Conclusion

This study concludes by highlighting the important and favorable connections among eco-consumerism, environmental values, perceived consumer effectiveness, and environmental concern. The results show that people who place a high priority on environmental values are more likely to show concern for environmental issues, which improves their perception of how effective they are as consumers. The significance of cultivating environmental values in order to encourage eco-friendly consumer behavior is highlighted by this serial mediation. The findings also imply that programs designed to raise environmental consciousness can further empower customers and encourage more sustainable consumption habits. Organizations and legislators can encourage people to make eco-friendly decisions by improving the perception of consumer effectiveness, which will ultimately support more general sustainability objectives. The study highlights how important it is to support a close relationship between individual values and purchasing decisions to promote eco-consumerism and solve urgent environmental issues.

Practical implications

For companies, legislators, educators, and environmental groups looking to encourage sustainable consumer behavior, the study's conclusions have significant real-world applications. Marketers should first create campaigns that speak to consumers' environmental values and clearly show how small actions, like buying eco-friendly products, can have a big impact on the environment. Marketing messages should highlight the power of individual choices, such as “Your decision makes a difference” or “This product helps reduce waste,” as perceived consumer effectiveness plays a crucial mediating role. These statements can greatly increase consumer motivation and engagement. Businesses should also make sure that their sustainability initiatives are credible and transparent. Companies must offer transparent, verifiable proof of their environmental impact in order to gain trust and enduring loyalty of environmentally conscious consumers who are sensitive to greenwashing.

The findings imply that encouraging eco-consumerism necessitates more than just offering green product options; instead, public policies ought to concentrate on empowering consumers via financial incentives, eco-labeling, and education. For example, tax breaks for eco-friendly purchases or government-supported eco-certification labels could improve the population's perception of consumer efficacy. The idea that one's behaviors contribute together to environmental protection should be reinforced in the education sector by incorporating environmental values into curricula and encouraging a sense of agency among young learners. These insights can also be used by community-based campaigns and non-governmental organizations to create interventions that demonstrate the practical effects of sustainable behavior while striking a deep chord with people's values and concerns. In general, the study emphasizes how critical it is to address both the cognitive and emotional aspects of environmental decision-making in order to promote In order to promote more consistent and significant eco-consumer practices, the study emphasizes the significance of addressing both the emotional and cognitive aspects of environmental decision-making.

Limitations

A number of limitations must be noted, even though the study offers insightful information about the psychological processes influencing eco-consumer behavior. First, there is a chance of social desirability bias due to the use of self-reported data. To appear socially conscious, participants might exaggerate their eco-friendly practices or environmental beliefs, which could distort the relationships seen in the mediation model and lower the study's external validity. Second, the capacity to make causal inferences is limited when a cross-sectional research design is employed. Without longitudinal or experimental data, it is impossible to

determine the precise temporal order of these variables, even though the study proposes a serial mediation path from environmental values to eco-consumerism via environmental concern and perceived consumer effectiveness.

Furthermore, the study might be geographically or culturally restricted, and its conclusions might only apply to one country. This restricts generalizability because sociopolitical, economic, and infrastructure factors influence environmental attitudes and behaviors, which differ greatly among cultures.

The limited definition of eco-consumerism is another significant drawback. The study may miss other important aspects of sustainable consumption, like reducing, reusing, or recycling, by concentrating primarily on green purchasing behavior. This would leave an incomplete picture of environmentally conscious consumer behavior. Furthermore, the model ignores important moderating factors that can greatly affect the direction and strength of the observed relationships, such as income, education, and accessibility to eco-friendly products. The model might overestimate the consistency between values and behavior because, for example, consumers with strong environmental values might still steer clear of green products if they are unavailable or too expensive. Finally, rather than treating environmental concern and perceived consumer effectiveness as dynamic and context-sensitive constructs, the study views them as stable psychological traits. In actuality, these opinions can change based on a variety of variables, including media influence, environmental crises, and product category. Ignoring these situational factors could limit the findings' applicability to marketers and legislators who want to encourage sustainable consumption.

Future Recommendations

To improve knowledge of eco-consumerism, future research should address the conceptual and methodological shortcomings of this study. In order to determine the causal connections between environmental values, environmental concern, perceived consumer effectiveness, and eco-consumer behavior, future research should first use experimental or longitudinal designs. This would help determine whether behavioral engagement also gradually reinforces psychological constructs and clarify the directionality of the mediation model. In order to reduce social desirability bias and obtain more accurate depictions of consumer behavior, researchers should also use observational techniques, behavioral tracking, or actual purchase data in addition to self-reported data.Future research must also broaden its cultural and geographic focus. Findings can be made more broadly applicable by using cross-cultural comparisons or multi-country sampling to show how consumer perceptions and environmental values differ depending on the context.

Furthermore, by incorporating a greater variety of practices like recycling, reusing, cutting back on consumption, or engaging in circular economy initiatives, future studies should expand the conceptual definition of eco-consumerism. This would offer a more thorough understanding of sustainable consumption that goes beyond consumer behavior. Potential moderating factors that could affect the consistency and strength of the value-behavior relationship include social norms, income level, environmental knowledge, and accessibility to green products. Lastly, it is necessary to consider perceived consumer effectiveness and environmental concern as dynamic constructions that are impacted by product categories, environmental events, and media exposure. Future research could use longitudinal tracking or context-sensitive methodologies to see how these factors change and influence consumer choices over time. Models of eco-consumer behavior that take these suggestions into consideration will become more reliable, practical, and useful.

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