

The Impact of Environmental Awareness on Green Consumption Behavior: The Mediating Role of Environmental Citizenship

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Abstract

This research aims to investigate the impact of environmental awareness on green consumption behavior, alongside the mediating role of environmental citizenship. The study was quantitative and included both descriptive and deductive methods of analysis. A questionnaire was distributed online using Google Forms, and collected 384 samples of consumers in the province of Dhi Qar. The data were analyzed using structural equation modeling (PLS 4) to analyze the impacts between the basic variables, in addition to using SPSS to analyze the demographic variables of the participants. Cronbach's alpha and composite reliability were used to evaluate the study's reliability, while the Fornell-Larcker criterion and heterotrait-monotrait ratio (HTMT) were used to evaluate the study's validity, being in all cases satisfactory. The results revealed a significant positive effect of environmental awareness on green consumption behavior, and confirming the mediating role of environmental citizenship in promoting this behavior. The study recommends enhancing environmental awareness programs to increase awareness among consumers about the importance of adopting green consumer practices. The study also recommends intensifying future research to include broader geographic areas and diverse population segments to verify the generality of the results and generalize the benefits derived.

Keywords: Environmental Awareness, green consumption behavior, environmental citizenship.

Introduction

Environmental management is becoming both a difficulty and a requirement in the current world due to the growing number of environmental issues, and the recognized effects of human conduct are becoming more and more negative. Changes in the environment and consumer knowledge of their potential effects on environmental conservation are the results of these factors. Consumer behavior is influenced by a variety of environmental changes; thus it is critical to constantly monitor these elements to satisfy customer requests (Skataric, 2021). A worldwide concern, the degradation is comparable to the economic tragedy of the commons. Reducing carbon emissions and environmental degradation is a top priority for governments. People's quality of life is negatively impacted by environmental issues, which causes a change in consumers' knowledge of and attitudes toward green consumption (Zheng, 2023). Numerous environmental challenges are mostly caused by human activity, including waste management, transportation, agriculture, urban expansion, industrial pollutants, and consumption patterns. While research has shown how production and lifestyle choices affect environmental difficulties, it is still unclear how precise consumption patterns on a human level might improve environmental conditions (Mahmoud, 2022). From the standpoint of republican environmental citizenship, resolving these issues would include taking action to establish standards necessary for the political community's existence and the defense of the general welfare. This point of view is consistent with the European Network of Environmental Citizenship's definition of environmental citizenship (Ariza, 2021). According to this theory, an environmental citizen demonstrates the competences (defined as the effective synthesis of knowledge, values, attitudes, and abilities) and the will to actively engage in preventing and solving sustainability issues, promoting environmentally friendly relationships, and guaranteeing fairness within and between generations. Regarding the skills required to actively participate in sustainable development (Sarid, 2021). However, the impact of environmental awareness on green consumption is still up for debate. To ensure a sustainable future, these prospective customers need to be educated about environmental issues. As a result, it is suggested that research be done to find out how people feel and behave about green consumption. As a result, it is advised to analyze to look at people's opinions and behavior about green consumerism (Shehawy, 2024). Research structure as below:

First: Research Methods

Second: Literature Review

Third: Research Methodology

Fourth: Results

Fifth: Conclusions and Recommendations

First: Research methods

1. Research statement

In the presence of increasing environmental challenges, environmental awareness and green consumption behavior have rapidly become essential for sustainable development. However, the impact of environmental awareness in green consumption behavior is still sufficiently unclear, especially alongside the mediating role that environmental citizenship can serve. Therefore, the research problem revolves around the question: What is the impact of environmental awareness on green consumption behavior alongside the mediating role of environmental citizenship?

2. Research importance

2.1. An overview of the theoretical framework for the research variables: Environmental Awareness, Environmental Citizenship, Green Consumption Behavior.

2.2. Promoting insight into the relationship between environmental awareness and green consumption behavior, which can contribute to achieving sustainable development by reducing harmful impacts on the environment and preserving natural resources.

2.3. Providing a comprehensive set of recommendations to promote environmental awareness and education, leading to increased public understanding of global environmental challenges and the need to act responsibly and sustainably.

3. Research Objectives

3.1. Estimating the impact of environmental awareness on green consumption behavior.

3.2. Estimating the impact of environmental awareness on environmental citizenship.

3.3. Estimating the impact of environmental citizenship on green consumption behavior.

4. Research Hypothesis

4.1. Environmental awareness has a positive impact green consumption behavior.

4.2. Environmental awareness has a positive impact on environmental citizenship.

4.3. Environmental citizenship has a positive impact on green consumption behavior.

5. Research method

The current research employed the descriptive method in the study as it focuses on describing and analyzing environmental phenomena accurately and in detail, to provide an accurate picture of the current state of the environment and document temporal changes in it.

6. Research Population & Sample

The research was conducted in province of Dhi Qar, and it focused on consumers, a random sample was used, using a structured questionnaire, distributed in online through Google Forms, the research sample was 384.

7. Research Conceptual Model

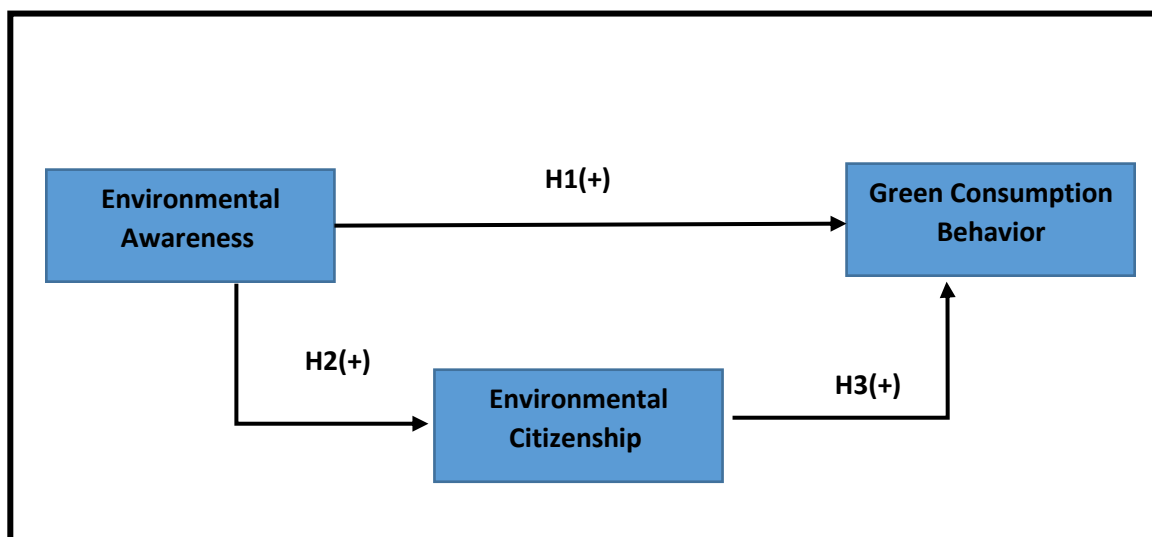


Figure1: Research Conceptual Model

Second: Literature Review

1. Environmental Awareness

Understanding the environment and identifying environmental issues are two aspects of environmental awareness (Ferreira, 2023). Simultaneously, growing awareness of the negative effects resulting from environmental problems has sparked a greater care for the environment. As a result, more people are embracing actions that put ecological well-being first. Consumption that considers the environment is a key component of this trend. This entails not just minimizing environmental damage but also carefully considering the environmental effects of consumption over the whole life cycle (Daoud, 2024). Ecologically friendly behavior is influenced by environmental awareness. Consumer trust in a firm is influenced by brand recognition as well. Consumers with excellent environmental awareness are more likely to be aware of a company's eco-friendliness, and they are also more inclined to purchase it when they have a higher level of brand trust (Alhamad, 2023). To be environmentally conscious means to comprehend the environment, how human behavior affects it, and how important it is to preserve it. Individuals become more environmentally conscious, choosing to act in environmentally friendly ways and spreading environmentally friendly ideas in both the social and economic domains of life. This circumstance lessens the amount of garbage generated and promotes green technology and eco-friendly energy. Thus, it is possible to maintain carbon neutrality (Chien, 2024). The level of environmental consciousness among consumers also has an impact on resource recycling. The issue of resource waste brought on by express packaging cannot be solved by recyclers alone, nor can we rely solely on technology and science to develop more ecologically friendly packaging materials. Customers at the express delivery terminal must assume significant responsibility for recycling the express packaging (Ding, 2023). With higher environmental awareness consumers are more likely to buy products based on their social responsibility and environmental claims. An individual's environmental concern was found to be more closely associated with the subsequent adoption behavior of green innovation than their level of awareness. An individual's fundamental environmental ethics views or principles are referred to as environmental consciousness. Environmental awareness is positively impacted by altruistic ideals like biosphere and negatively by egoistic values like collectivism (Polas, 2023). Thus, one potential way to address

environmental issues brought on by human activity is to increase public awareness of climate and climate change issues. As a result, people will be more aware of the negative effects of their actions on the environment and will be more likely to adopt eco-friendly or environmentally protective habits (Kousar, 2022) There are misconceptions, nonetheless, that the notions of environmental consciousness and climate change awareness are interchangeable, even if they are not. Climate awareness is the capacity of humans to identify the nature of the environmental process and problems as a whole, their concerns regarding the quality of the environment, and the extent to which they devote themselves to environmental protection activities in their daily lives (Osman, 2023). A clear and thoughtful grasp of the issues confronting humanity is always sought after by environmental awareness, which also develops the ability to act both individually and collectively. But altering consumer behavior is difficult and necessitates modifying ingrained attitudes, habits, and beliefs. Environmental sustainability education (ESE), which incorporates the eco-media and digital components, and environmental communication both need to take critical and reflective approaches to this (Oe, 2022). Finally, raising public knowledge of environmental awareness is essential for governments to enact pertinent environmental laws and for businesses to develop effective product strategies. Raising public awareness can also help minimize the usage of plastics and water waste while encouraging recycling can help cut down on waste ending up in landfills (Yu, 2022).

2. Environmental Citizenship

The modern conceptualization of citizenship to address current global issues is becoming increasingly important to philosophers, practitioners, activists, and researchers in various fields due to the interconnectedness of the modern world, the growing urgency of global challenges, and the deepening global problems affecting individual countries. Environmental citizenship is one of these conceptions. Due mostly to its worldwide nature, the notion is still somewhat unclear (Mravcova, 2023). However, the concept of environmental citizenship is not easy to define because it intersects with other well-established concepts like sustainability and sustainability education, environmental behavior, environmental attitudes, environmental literacy, and awareness, it can be challenging to describe the idea of environmental citizenship. Furthermore, because of this concept's political, economic, and societal elements, it is examined by a variety of academic fields. This explains why the concept of environmental citizenship is found in the literature under various names, including ecological, green, and sustainability citizenship (D'Arco,

2022) and most people view the idea of global citizenship as the restoration of the Stoic ideal of the cosmopolitan citizen. The idea articulates the hope that citizenship's ethical obligations can go beyond nationalism's ethical particularism. The idea has been dubbed several titles when it comes to environmental difficulties such as "post-cosmopolitan environmental citizenship," "global environmental citizenship," or "post-national environmental citizenship" Additional classification options may become apparent after a more thorough analysis of the literature. Some works see global environmental citizenship as a growing reality (Lenzi, 2023). However, to accomplish these lofty goals through educational interventions, we need to go much beyond the problem-free dissemination of knowledge or the advocacy of specific sustainable behaviors within the framework of laws and societal norms. We must think about how to influence the core societal and individual values associated with cultural and personal identity. These include the social and personal ideals that influence one's outlook on life as well as the strategies and tactics used to guarantee social fairness, economic success, and sustainable development on a global and intergenerational scale (Ariza, 2021). Despite its importance, environmental citizenship has not gotten much attention, despite how important it is. One possible explanation for this is the intricate conceptual structure of environmental citizenship and its relationship to other, more widely accepted concepts (such as sustainability, environmental behavior, environmental attitudes, environmental literacy, and environmental knowledge and awareness), which are frequently employed in conjunction with or in place of one another. However, environmental citizenship has come to encompass a broad range of character, including the ability to address environmental issues and the civic engagement and active participation in society that go hand in hand with the knowledge, skills, attitudes, values, and beliefs that go along with it (Georgiou, 2021). A perspective like this on citizenship requires people and organizations to act in ways that protect the environment and advance social justice, even in the absence of any immediate financial gain or benefit. Proponents of SC and EC argue that these modern forms of citizenship are more appropriate for the world's current problems since they are driven by ecological considerations. "Pro-sustainable behavior, in public and private, driven by a belief in fairness in the distribution of environmental goods, in participation, and the co-creation of sustainability policy," is how citizenship theorist Dobson describes EC (Sarid, 2021). Culture and social environment are important factors in learning because there are normative values and rules conditioning people's behavior and attitudes due to their personal and educational background. Education for Environmental Citizenship enhances the development of active environmental citizens

and enhances active participation in environmental activities. Environmental citizenship is one of the most important factors in achieving both the Sustainable Development Goals for 2030 and the objectives of the EU's economic growth strategy for 2050 (Monte, 2021). So, environmental citizenship refers to local, national, and international network-based citizenship exercises; these include the concept of excellences that take on a major role and are used to demonstrate appropriate traits and behaviors for the achievement of manageability, through modifications in domestic behavior, to be an environmentally conscious citizen, discipline, and a greater emphasis on ecological rights. and encouraging locals to acquire knowledge and skills is part of environmental citizenship. Because environmental citizenship encompasses an understanding of biological concerns as well as residents' rights and obligations regarding ecological issues, the activities have not only brought ecological issues to light but have also advanced good and sustainable human collaboration with the state of the environment (Fatimah, 2021).

3. Green consumption Behavior

Green consumption has become increasingly important to society as people become more conscious of environmental deterioration and show increasing care for the environment. According to the notion of sustainability, developing nations are the engine of global economic growth and have the potential to lead the way in ethical production and consumption. Businesses that have a stake in public marketing strategies that are sustainable could gain from analyzing customer preferences and inclinations toward sustainable buying (Lavuri, 2023) due to overconsumption and rising environmental degradation are now global issues for consumers, corporate management, and policy leaders. Along these lines, customers are starting to ask for items that are more environmentally friendly and sustainable (Risitano, 2023), and the propensity to demonstrate their support for environmental conservation via their consumption and purchase patterns, and place a higher priority on environmental and personal resource conservation are more environmentally conscious consumers. Green consumption values drive green trust, which in turn influences green attitudes and intentions (Ribeiro, 2023). Recent years have seen a rise in interest in and a deluge of studies on green consumption. However, there are still several difficulties. Many different factors influence green consumption, and the underlying mechanism is complex. As a result, further research into the factors influencing green consumption is required, as is the improvement of relevant theories (Liu, 2024) To do this, we must motivate customers to embrace more environmentally friendly habits, match those

behaviors to their unique attributes, and develop relevant tactics. Understanding how customers' perceived costs and government policy interventions affect their eco-friendly choices, as well as how consumers' environmental knowledge affects their green consumption, is crucial for effectively promoting green consumption (Hassan S.H., 2022). Consuming green products can, in certain cases, help reduce the consequences of global warming to some extent. When it comes to buying, using, and discarding green items, eco-friendly products and services have become the main emphasis of green consumerism. Furthermore, green products are designed to have as little of an impact as possible on the environment and are produced with recyclable and renewable resources, which cut down on waste and pollution (Hong, 2024). Using environmentally friendly products is seen by many as an effective means of protecting the environment. Purchasing eco-friendly products shows our support for businesses that integrate sustainable practices into their supply chains and production processes. As a result, we can stop the carbon footprint from increasing and work toward a more sustainable future (Guan, 2024).

Third: Research Methodology

The research is applied research in terms of its outcomes, and it is a survey, case study, and correlation in terms of its technique. To collect data, online questionnaires were sent to customers in the province of Dhi Qar using social media. The instrument used to measure study variables consists of 17 questions. The questions related to the Environmental Awareness variable include 5 questions from (Navia, 2024), the questions related to the Environmental Citizenship variable include 5 questions from Karatekin, 2018), and the questions related to Green Consumption Behavior include 7 questions that adopted from (Navia, 2024). The questions were set on a 5-point Likert scale (from strongly agree = 5 to disagree = 1 strongly). The research's statistical population consisted of over 100,000 customers in the province of Dhi - Qar at the time of the study. Random sampling was used as the research sampling technique, and utilize Mogran table to determine the sample of research. A total of 384 customers received the questionnaire link, and 384 of the useable surveys were filled up. To ensure the accuracy of the scale items used in the field research carried out in the province of Dhi-Qar. The authors translated them from English (the original language) into Arabic, using a twofold back-translation method. After comparing and modifying the two versions, the terminology and translation were suitable for the Arabic language. The translated scales were verified to be appropriate for inclusion in the questionnaire through this careful process (Nham, 2023).

Table 1: Demographic Profile of the Respondents.

N= 384

Responses	Frequency	Percentage
Gender		
Male	249	65%
Female	135	35%
Status	384	
Married	210	55%
Single	174	45%
Age		
20- 30 Years	120	31%
31- 40 Years	90	23%
41- 50 Years	110	29%
51 ≥ Years	64	17%
Educational		
Secondary	40	10%
Diploma	60	16%
Bachelor's	136	35%
Postgraduate	148	39%
Incoming level		
Low	198	52%
Medium	140	36%

High	46	12%
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Fourth: Results

To assess the measurement, the suggested model, and the direct effects of the presented hypotheses, a Partial Least Squares (PLS) analysis with conventional bootstrapping (5000 random samples) using the Smart PLS tool (Becker et al., 2023) was put into practice.

1. Measurement Model Assessment

The measurement of latent variables in the PLS-SEM route modeling is dealt with by the measurement model, referred to as the outer model. Every latent construct in the model is made up from multiple reflective observations. The factor loadings for all constructs and items relevant to the Measurement Model Assessment are shown in Figure 2.

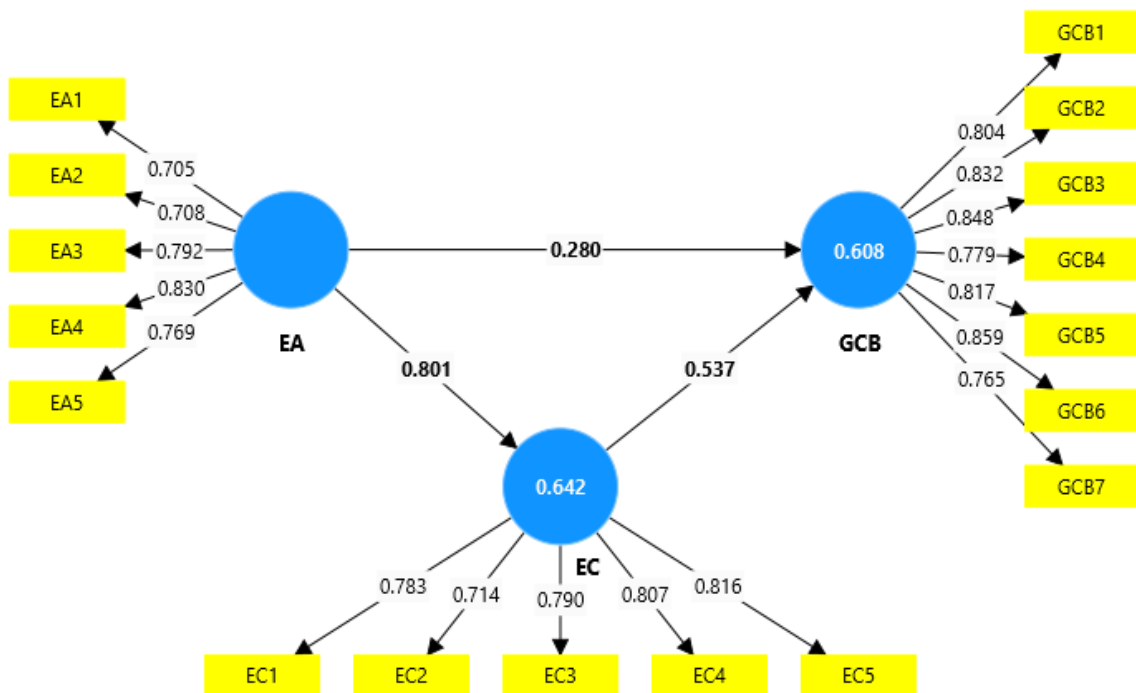


Figure (2) Measurement Model

Before progressing on to the structural model evaluation, the measurement model was evaluated to make sure the quality requirements were met. Because of this, comprehensive assessments have been conducted which are shown below.

Table 2: Constructs Validity and Reliability

Constructs	Question number	Factor Loadings	CA	CR	AVE
Environmental Awareness	EA1	0.705	0.821	0.874	0.581
	EA2	0.708			
	EA3	0.792			
	EA4	0.830			
	EA5	0.769			
Environmental Citizenship	EC1	0.783	0.842	0.888	0.613
	EC2	0.714			
	EC3	0.790			
	EC4	0.807			
	EC5	0.816			
Green Consumption behavior	GCB1	0.804	0.916	0.933	0.665
	GCB2	0.832			
	GCB3	0.848			
	GCB4	0.779			
	GCB5	0.817			
	GCB6	0.859			
	GCB7	0.765			

The standard technique for assessing the dependability of the variables or constructs is Cronbach's alpha. Cronbach's alpha value of ≥ 0.7 is posited as excellent, but the actual

value of more than 0.8 is adequate to guarantee the construct's dependability. Composite reliability is assessed for the reliability-ensuring structures in PLS-SEM. Each construct in this model has a composite reliability of >0.8 , which is sufficient for advanced study. A composite reliability of 0.8 is excellent in this model. Furthermore, the convergent validity of the constructs is measured by the average variance extracted (AVE) value. For the constructs to be validated, an AVE value of ≥ 0.5 is accepted. As a result, the model meets every requirement listed above for further measures. While one model construct is not represented by another in the model, discriminant validity ensures that each model construct is different from each other. The PLS-SEM analytical approach was used in this study to examine discriminant validity in different ways (Ahmed, S., 2017).

Table 3: Fornell- Larcker Criterion

Constructs	EA	EC	GCB
Environmental Awareness	0.75		
Environmental Citizenship	0.607	0.776	
Green Consumption behavior	0.528	0.471	0.78

The Fornell-Larcker method is more widely accepted when evaluating the validity of reflective items. The diagonal values in table 3 indicate that validity measures are more valuable than correlations with other constructs (Ab Hamid, 2017).

Table 4: Heterotrait-Monotrait Ratio (HTMT)

Constructs	EA	EC	GCB
Environmental Awareness			
Environmental Citizenship	0.628		
Green Consumption behavior	0.591	0.468	

Table 4 shows the study constructs were assessed using the Heterotrait-Monotrait Ratio of Correlations (HTMT). According to this analysis, all study constructs have a value of less than 0.85, meaning that it met the discriminant validity requirement (Mohamad, 2024).

2. Structural Model Assessment

The relationship among the latent variables in the PLS-SEM path model is described by the structural model. The T-value between the constructions and related indicators of the specific latent variable is determined using the route model equation (Figure 3). As a result, the structural model indicates all the manifest variables and the construct level.

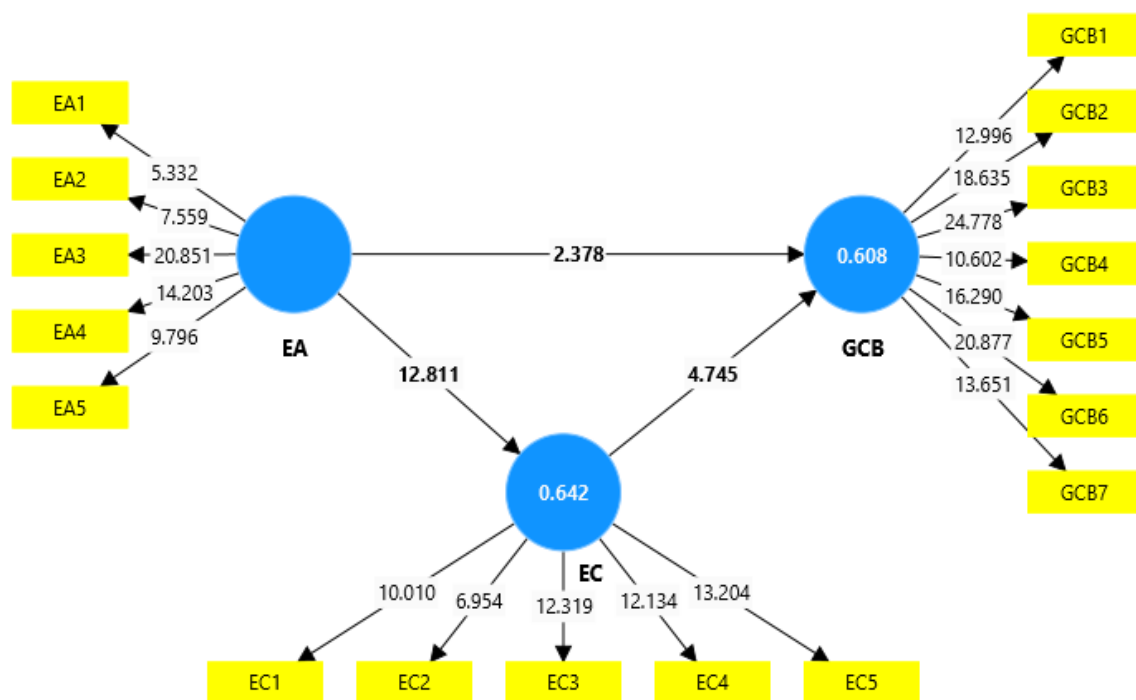


Figure 3: Structural Model

Hypothesis Testing

Table 5: Path Coefficient of Structural Model

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STD EV)	T Value	P Value
EA -> EC	0.801	0.795	0.063	12.811	0.000
EA ->	0.280	0.299	0.118	2.378	0.017

GCB					
EC -> GCB	0.537	0.523	0.113	4.745	0.000

The bootstrapping method (5,000 subsamples, one-tailed significance) was used for estimating the parameter's statistical significance. The results of the direct effect hypothesis are shown in Table 5. Three significant conclusions emerged from the investigation. First, environmental awareness is positively and significantly with green consumption behavior (H1, $\beta=0.280$; $t=2.378$; $p=0.017$). Second, environmental awareness is positively and significantly with environmental citizenship (H2, $\beta=0.801$; $t=12.811$; $p=0.000$). Third, environmental citizenship is positively and significantly with green consumption behavior (H3, $\beta=0.537$; $t=4.745$; $p=0.000$). Therefore, H1, H2, H3 were supported.

Fifth: Conclusions and Recommendations

Conclusions

1. The results confirm a significant positive effect of environmental awareness on green consumption behaviors, indicating that individuals with high environmental awareness tend to adopt more environmentally friendly behaviors.
2. The study indicates that environmental citizenship performs an important mediating role in influencing as a mediating variable between environmental awareness and green consumption behavior, which enhances the understanding of how environmental responsibility is deepened in individuals' behaviors.
3. Despite the confirmation of the hypotheses, there may be alternative explanations that suggest that individuals' environmental behaviors may be driven by broader social and moral reasons and not just environmental awareness.

Recommendations

1. The study recommends strengthening environmental awareness programs through educational institutions and governments in performing environmental awareness campaigns to promote environmental citizenship, thus impacting green consumption behavior.
2. the necessity of developing strategies and programs that focus on enhancing environmental citizenship, as a mediating variable in promoting green consumption behavior.

3. performing examine the impact of environmental awareness programs experimentally to determine the most effective methods for promoting green consumption behavior. and to develop strategies based on these evaluations.
4. The study recommends conducting future research that includes large, geographically and culturally diverse samples to examine the impact of environmental awareness and green consumption behaviors in different contexts, which enhances the accuracy and generalization of the results.

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