

Research Article

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The Mediating Role of Climate Change Mitigation Behaviors in the Effect of Environmental Values on Green Purchasing Behavior within the Framework of Sustainable Development

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Abstract: Global environmental challenges, including the depletion of natural resources, pollution, and population growth, have significantly impacted modern lifestyles. The environmental and socioeconomic dimensions of this reality are represented by climate change, one of the major threats facing the planet. People's environmental values and the green behaviors they exhibit based on these values are crucial in mitigating significant environmental problems, such as climate change. In this context, raising environmental awareness and motivating individuals to contribute to sustainable development and the circular economy particularly environmental protection can serve as an effective starting point. In line with this idea, data were collected from 236 participants in Istanbul in 2024 using the convenience sampling method. The data collected through the survey technique in the study were analyzed using the SPSS program and PROCESS, a macro developed for SPSS. In addition, confirmatory factor analysis and path analysis were performed with the Python programming language, and fit index was also presented. The research findings reveal a significant relationship between environmental values and green purchasing behavior. The mediating role of climate change mitigation behavior was also found.

Keywords: climate change, green purchasing behavior, environmental values, sustainable development, circular economy, word cloud

1 Introduction

Life expectancy and life satisfaction have improved significantly for billions of people due to the phenomenal increase in production and consumption globally over the last 200 years, enabled by significant scientific and technological advances. However, human activities have caused or are on the verge of causing critical planetary boundaries to be exceeded, which could have devastating impacts on both humans and other species on the planet. At the same time, human activities have expanded to such an extent that scientists refer to this era as a new geological epoch, the "Anthropocene" (Steffen et al., 2018). Rapid population growth has led to changes in human consumption behaviors, which have directly and indirectly affected the well-being of the population. This consumption has significantly impacted the ecosystem, leading to problems such as pollution, deforestation, depletion of the stratospheric ozone layer, pollution of seas and rivers, global warming, and the climate crisis (Chen & Chai, 2010; Ramlogan, 1997). Despite ongoing environmental degradation, estimates suggest that the global average temperature could increase by up to 4.8°C by 2,100 if urgent measures are not implemented (Tracker, 2020). Evidence from various sources indicates that Earth's climate is undeniably undergoing significant changes. Instrumental climate records from numerous stations worldwide reveal a clear and urgent warming trend (Kirat et al., 2024; Patterson et al., 2022). The pressing environmental problems and their adverse impacts on human health have drawn attention from academics, governments, and organizations (Haytko & Matulich, 2008).

This has led to increased environmental sustainability, with corresponding shifts in consumer demand and behavior (Mendleson & Polonsky, 1995). Research and studies on

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the effective management and use of natural resources for mitigating environmental impacts have become increasingly common over time. In this context, the concept of sustainable development gained increasing importance, particularly after the United Nations (2015), an international organization dedicated to promoting global cooperation and solutions for global issues, introduced the 17 sustainable development goals (SDGs) in 2015. The SDGs emphasize the influence of environmental values and green practices at the core of sustainability, while also bringing into focus the need for the integration of environmental, economic, and social dimensions. Green buying behavior, as an extension of green values and attempts to offset the effects of climate change, is a key instrument for sustainable consumption (Goal 12) and climate action (Goal 13). Therefore, it has a direct impact on the larger sustainable development agenda. This study provides an opportunity for you, as students, scholars, and researchers, to investigate the role green purchasing behavior (GPB) and environmental attitudes have in mitigating climate change through the use of the traditional theory of planned behavior (TPB) framework. To this extent, your involvement in this approach meets a void in the research.

Recent Turkish literature concerning green consumption behavior and environmental values has been well researched. Turna (2024) examined the relationship between perceived environmental knowledge and sustainable consumption behavior, testing environmental concern as a mediator. The study utilized an online survey of 343 participants with structural equation modeling (SEM) and confirmatory factor analysis (CFA) to analyze the data. The study found that perceived environmental knowledge and environmental concern positively influence sustainable consumption behavior, with environmental concern mediating this relationship. The study concluded with the result that enhanced environmental awareness and concern can effectively trigger sustainable consumption tendencies. Yilmaz and Aytekin (2020) also examined green purchase behavior using the extended value-attitude-behavior model. They conducted a survey among 550 consumers in Samsun and used the Kruskal-Wallis test for statistical analysis. Their study indicated that environmental consciousness has an indirect impact on green consumption behavior through environmental attitudes. Conversely, green product awareness, product quality, and reference groups all have a direct influence on buying behavior. The authors stated that increasing environmental consciousness and the impact of reference groups would stimulate GPB. Korkmaz et al. (2017) investigated the relationship between green product purchasing behaviors, susceptibility to interpersonal influence, and social impact among college students. Their study of 264 students, which employed factor

analysis, correlation analysis, and simple linear regression, revealed that social influence and susceptibility to interpersonal influence have a positive impact on GPB. The authors suggested that strengthening social influence and susceptibility could lead to increased purchasing of green products.

Although Turkey has emphasized environmental sustainability in various national policy documents in recent years, there are significant challenges in translating individual awareness in this area into actual pro-environmental behaviors. In particular, a considerable attitude-behavior gap has been observed between consumers' positive attitudes toward environmentally friendly products and their actual purchasing behavior. This gap highlights the importance of understanding how environmental values influence green purchase behavior through climate change mitigation actions. Although the relationships among these three variables have been examined individually in the literature, no empirical study has been found that tests a comprehensive structural model of environmental values, climate change mitigation behavior (CCMB), and green purchase behavior within the context of Turkey. This study aims to address this gap by providing a theoretically grounded explanation of environmentally conscious consumer behavior specific to the Turkish context.

Despite the existing body of literature on environmental values and GPB, a significant gap remains concerning studies directly addressing CCMB. The current literature has primarily focused on general environmental attitudes and behaviors without examining how these attitudes translate into specific climate change mitigation actions. This study seeks to fill this gap by focusing explicitly on CCMB, providing a novel contribution to the field. In this study, the "CCMB scale" was adapted into Turkish and administered to voluntary participants in the context of Istanbul. A comprehensive literature review revealed that no prior research in Turkey has directly employed a scale specifically measuring CCMB. This finding underscores the original and innovative nature of this research. This research aims to raise awareness of CCMBs among the Turkish public and to scientifically reveal individuals' behavioral tendencies in this context. This objective constitutes the primary motivation for this study. The originality of the study is that the variables that constitute the subject of this study have not been addressed together before, and the CCMB applied to Turkey shows a similar structure to the original scale. The findings of the study clarify how environmental values shape individuals' sustainable consumption behaviors and demonstrate how these values influence GPBs through CCMBs. Today, the impacts of environmental problems on human health, ecosystem balance, and the quality of life for future

generations have attracted the attention not only of academics but also of governments, the private sector, and broader segments of society. In this context, it is of great importance for individuals to hold environmental values and to transform these values into actual behaviors in line with the goals of sustainable development. The literature includes numerous studies on the effect of environmental values on GPB, with significant contributions particularly from Turkey. However, most existing studies tend to associate environmental values with general attitudes and do not examine how these values translate into more concrete behaviors, such as climate change mitigation actions. This gap hinders our ability to better understand the real-life impact of environmentally conscious values. This study proposes that promoting CCMBs can strengthen the link between environmental values and green purchasing decisions. The results provide strategic recommendations for policymakers and educators to enhance environmental values and climate change awareness, thereby contributing to the promotion of sustainable consumption and environmentally friendly behaviors. While most studies conducted in Turkey have focused on constructing green consumer profiles or measuring pro-environmental attitudes, there remains a notable limitation in understanding how these attitudes translate into actual behavior, particularly through the lens of climate change mitigation actions. Therefore, this study aims to contribute to the literature at a theoretical level while also generating actionable insights at both policy and societal levels to better understand environmentally conscious consumer behavior in the Turkish context.

Following this, our study is organized into four main sections. Section 2 provides an overview of the basic concepts and relevant terminologies from the literature. Section 3 outlines the research hypotheses, participants, procedures, measurement tools, data analysis methods, and findings. Finally, Section 5 presents the study's findings, limitations, and suggestions for future research. Section 6 concludes this article.

2 Conceptual Framework

2.1 TPB

The TPB, an extension of the theory of reasoned action (TRA), was developed by Fishbein and Ajzen (1977); Ajzen and Fishbein (1980) to explain the behavioral intentions of individuals. According to the TRA, an individual's intention

to engage in a particular behavior is the proximal determinant of volitional behavior. The TRA focuses on volitional actions, suggesting that intention solely governs behavior. In contrast, the TPB also seeks to predict nonvolitional behaviors (Ajzen, 1988, 1991; Conner & Armitage, 1998). The TPB posits that attitudes, subjective norms, and perceived behavioral control are the three components that shape intentions, which, in turn, lead to behaviors (Ajzen, 1985, 1987, 1991). An individual's willingness to engage in a behavior and the degree of control they perceive over it (behavioral control) determine whether they will perform the behavior (Ajzen, 2006). Beliefs about behavior or potential influences on behavior are referred to as attitudes. In addition, attitudes can reflect judgments of good or bad, likes or dislikes, or an evaluation of a concept, activity, or item. Attitudes emerge from the acceptance or rejection of something Ajzen & Fishbein (2011). Behavioral control refers to the strong motivation or drive associated with a particular behavior. It represents a dominant belief that stems either from a perceived limitation or, conversely, a compelling reason for performing or avoiding a specific action. Subjective norms are external influences or societal pressures that individuals face when they aim to achieve something. These external influences often come from significant others, such as family, friends, or public figures. Subjective norms consist of two components: the degree to which key referential figures support or oppose a specific behavior, and the strength of an individual's motivation to conform to the expectations of these referential figures (Liu et al., 2023). Subjective norms refer to people's beliefs that influence their behavior. Consumer attitudes, behavioral intentions, subjective norms, and purchase behavior are strongly correlated, according to the recent research. Subjective norms, for instance, have been shown to increase local consumers' intention to visit green hotels significantly (Haq et al., 2023) and to be a powerful predictor of green hotel lodging behavior among Chinese consumers (Agag & Colmekcioglu, 2020).

Si et al. (2019) used bibliometric techniques to study the use of TPB in environmental sciences. They found that TPB is widely used in areas such as sustainable transportation, energy conservation, green consumerism, and waste management. The study highlighted the TPB's ability to explain environmental behaviors and provided recommendations for improving its application. Yuriev et al. (2020) examined the determinants of environmental behaviors using TPB. They examined the application of TPB in different contexts to identify factors that influence environmental behaviors. It also revealed that indirect variables (beliefs) and reported explained variance are often overlooked. Greaves et al. (2013) examined environmental

behavioral intentions in the workplace using the TPB. They found that the TPB could explain between 46 and 61% of employees' intentions to adopt eco-friendly practices. Intentions were found to be strongly predicted by attitudes and perceived behavioral control. Gkargkavouzi et al. (2019) extended the TPB by combining it with the value-belief-norm model and providing a more thorough analysis of people's environmental behaviors. Their study revealed that routines and self-identity significantly impact environmental behavior, thereby enhancing the TPB's predictive capacity.

The TPB has been widely used to predict entrepreneurial and pro-environmental behaviors in various environmentally conscious domains. Previous studies have employed the TPB to explain behaviors such as recycling, organic food consumption, green purchasing, the adoption of green products, energy-efficient products, and other environmentally friendly practices (Aertsens et al., 2009; Boldero, 1995; Chan & Lau, 2000; Han & Hyun, 2018; Han et al., 2019; Kalafatis et al., 1999; Yadav & Pathak, 2016; Yeon Kim & Chung, 2011; Zagata, 2012).

2.2 GPB

Increasing ecological consciousness has resulted in consumers favoring eco-friendly goods and services due to increased awareness of environmental damage. Businesses that emphasize sustainable practices have benefited from this shift (Kalafatis et al., 1999; Laroche et al., 2001; Roberts, 1996). "Green purchasing" refers to avoiding ecologically hazardous products and buying environmentally beneficial ones. Consuming eco-friendly products is directly linked to GPB (Jansson et al., 2010). The demand for eco-friendly items has increased due to growing consumer awareness of environmental damage. Green products help ensure a sustainable future by reducing environmental harm and satisfying customer demands (Soomro et al., 2020). Ecological or environmentally friendly products are often referred to as "green products." According to Shamdasani et al. (1993), a green product is recyclable or reusable, does not harm the environment, and does not consume natural resources. Elkington and Makower (1988) define eco-friendly packaging as a product that minimizes its negative environmental impact through its environmentally conscious design. Growing concern among customers about environmental protection is driving a shift from purchasing traditional products to opting for green products that cause minimal pollution and conserve resources (Marcon et al., 2022). Academic research has identified the motivations underlying environmentally friendly behaviors

and has examined the relationship between cognitive or motivational factors and environmentally conscious behaviors (Dietz et al., 1998; Karp, 1996). According to Krause's (1993) study, consumers are becoming increasingly aware of the environmental impact of their daily habits.

Consequently, some customers have translated their environmental concerns into a commitment to actively purchasing green products (Martin & Simintiras, 1995). The answers to the questions, "What are the barriers to pro-environmental behavior?" and "Why do people act in environmentally friendly ways?" are complex. The gap between having environmental awareness and knowledge and engaging in pro-environmental behavior has been explained using various theoretical frameworks. For instance, Dunlap and Mertig (1995) and Jones (2001) noted that while many individuals are conscious of and concerned about environmental issues, this does not necessarily translate into sustainable behavior (Kaufmann et al., 2012).

2.3 Environmental Values

According to Schwartz (1992), values are considered preferred life goals of differing significance that function as guiding standards in individuals' lives. According to Schwartz, values can be categorized into ten value clusters – conformity, power, universalism, tradition, stimulation, benevolence, hedonism, self-direction, achievement, and security – that characterize individual variations in value priorities. Social values are represented by the first four value clusters, while individualistic values are reflected by the last six. Environmental studies generally show that self-enhancement and self-transcendent values are particularly linked to environmental beliefs, norms, attitudes, action, and intentions: individuals who highly prioritize self-transcendent values tend to exhibit stronger pro-environmental attitudes and normative commitments. According to Thøgersen and Ölander (2003), individuals who endorse self-transcendence values are more inclined to carry eco-friendly behaviors into various areas of their consumption patterns (Mainieri et al., 1997).

Environmental values have a wide-ranging impact, from sustainable consumption to sustainable urban planning, from green trade to environmental awareness among young people. Developing and implementing sustainability policies requires understanding how these principles affect people and businesses. By using data from PISA 2015, List et al. (2020) examined the environmental awareness of young people and showed how environmental values impact sustainable behavior. The study showed that education can promote sustainable behavior by raising

environmental awareness. Perera et al. (2024) investigated the influence of environmental values on sustainable consumption and described how these values impact consumption practices. Gimenez-Jimenez and Harc (2024) examined how environmental values and cultural factors influence environmentally conscious entrepreneurs' intentions to pursue sustainable entrepreneurship. In a study by Ang et al. (2011), the effective use of environmental, social, and economic resources in EU nations was assessed, and the influence of environmental values on sustainable resource management and efficiency was investigated. However, some research suggests that people's environmental views, behavioral intentions, normative perceptions, and behaviors are somewhat correlated with their openness to change and conservation tendencies (Schultz & Zelezny, 1999; Poortinga et al., 2004). For instance, according to Nordlund and Garvill's (2003) study, values are linked to environmental awareness and personal norms that encourage reducing vehicle use. This suggests that behavior-specific norms and beliefs mediate the relationship between values and the desire to avoid using vehicles. Existing research has shown that individuals with environmentally conscious values are more likely to exhibit environmentally responsible purchasing behaviors (Chekima et al., 2016; Lee, 2008). However, several studies (Gupta & Ogden, 2009) show that environmental values do not always directly influence purchasing behavior. These differences suggest that environmental values have an effect through certain intermediary behaviors rather than a direct impact. Moreover, studies examining such relationships in the Turkish context are limited. In this context, it is assumed that environmental values influence behaviors related to combating climate change.

H₁: Environmental values (EV) have a positive effect on GPB.

2.4 CCMBs

Climate change refers to the global phenomenon that primarily impacts the common climate conditions on Earth. It is related to global warming and its effects on weather patterns on our planet (Saxena & Nimala, 2022; Shen et al., 2024). Climate change is primarily caused by global warming and the greenhouse effect. The daily human activity that releases greenhouse gases (GHGs) has led to an unprecedented global temperature rise, and it is predicted to rise even more in the future if left uncontrolled (Hassani et al., 2019). For instance, a significant amount of GHG emissions is caused by the consumption of goods and services. Studies of individual and household behavior are known as behavioral science, and they are conducted in various fields, including psychology, political science,

anthropology, sociology, economics, and transdisciplinary research. In several spheres of life, households and individuals can impact climate change (Ivanova et al., 2020). Behavioral science research on climate change mitigation has frequently focused on individuals' consumer behaviors. Existing research has primarily focused on commonly practiced behaviors (such as recycling, food choices, or modes of transportation), the predictability of individual characteristics (like knowledge and attitudes), and how individuals respond to change initiatives (Clayton et al., 2015; Nielsen et al., 2024). People need to feel both concerned about climate change and confident in their ability to take action to reduce it if they are to adopt individual-level climate change mitigation practices (Ajzen, 1991; Bandura, 1977; Floyd et al., 2006). People must know how to transform their concerns into productive actions (Andrews et al., 2022). People are more inclined to participate in mitigation behaviors (Doherty & Webler, 2016; Lubell et al., 2007), climate change activism (Bamberg et al., 2015; Jugert et al., 2016), and discussions about climate change when they believe they can stop it (Geiger et al., 2017; Swim et al., 2014). Individuals can encourage behavioral changes in their workplaces and communities, support mitigation efforts within institutions and organizations, move their private investments to mutual funds and low-emission businesses, and vote for political candidates who support bold climate action. Changes in behavior, such as circular consumption, resource conservation, and sustainable transportation, can help mitigate climate change (Dietz & Whitley, 2018; Kölbl et al., 2020; Nielsen et al., 2021, 2024). However, research explaining the direct transfer from individuals' values to behavior remains limited, and this relationship needs to be further elaborated, particularly concerning CCMBs. Furthermore, the role of CCMBs in environmental purchasing behaviors has not been adequately analyzed. Therefore, it is suggested that CCMBs play a mediating role in the effect of environmental values on GPB.

H₂: Environmental values (EVs) have a positive effect on CCMB.

H₃: CCMB has a positive effect on GPB.

H₄: CCMB has a mediating role in the effect of EVs on GPB.

3 Method

3.1 Participants and Procedure

Between May and October 2024, a survey method and convenience sampling were used to conduct this study among

236 residents of Istanbul. Participants were asked if they would be willing to participate in a study focusing on environmental behaviors and values. All participants will be guaranteed anonymity, and participation in the study is entirely voluntary. After reading the information about the survey and giving their approval for the voluntary consent form, the participants were directed to the online form. In this context, the main factors in choosing this method were time and budget constraints, limited access to the target group, and field difficulties that could be encountered during the data collection process. In addition, since the primary aim of the research was to provide a preliminary insight into environmental awareness and behavioral trends, the convenience sampling method was found appropriate. In addition, an attempt was made to reach individuals of different ages, genders, educational statuses, and occupational groups to ensure sample diversity.

These participants completed the Internet-based survey, which took between 12 and 18 min to complete. Participants in this study were 50.8% women ($N = 120$) and 49.2% men ($N = 116$), with ages ranging from 17 to 58 years ($M = 25.48$, $SD = 8.10$). The participants' education levels were 8.9% high school, 47.5% associate degree, 26.3% bachelor's, 10.2% master's, and 7.2% doctorate.

Informed consent: Informed consent was obtained after informing participants that the survey data had been anonymized and, to prevent disclosure to anyone else, would be destroyed upon completion of the study.

3.2 Measures

Sociodemographic variables: Participants were asked about their age and sex. In addition, marital status, monthly income, education, and occupation information were asked. To measure whether a person's social network has an effect on the formation of environmental values, whether he/she is a member of an environmental NGO is included in the statements. In addition, people's opinions about the environment were asked in an open-ended manner. Participants' environmental values were measured using a seven-item, single-dimensional scale developed by Kaiser et al. (1999). The items concern ecological protection and the value of nature (Table 1). A five-point Likert scale that ranged from agree (1) to disagree (5) was the response format used. An example of the items on the scale is: "I agree that meaning: I admit that all organisms'

Table 1: EFA results

Items	Factor loadings	Variance explained (%)	KMO
EV3. I agree that (meaning: I admit that)... ...all organisms' lives are precious and worth preserving	0.808	54.14	0.86
EV2. ...animals should have legal rights	0.791		
EV4. ...nature must be preserved because God or another supernatural force is part of it, even in its non-living aspects	0.771		
EV1.all things, whether humans, animals, plants, or stones have the right to exist	0.754		
EV7. ...the earth's value does not depend on people; it is valuable in itself	0.753		
EV6. ... for everything that I do, including deeds affecting the environment, I am responsible to a super natural force, for instance God	0.640		
EV5. ...in general, raising animals in cages should be forbidden	0.609		
CCMB5. "Chats about environmental topics"	0.855	57.08	0.84
CCMB3. "Buys seasonal fruits and vegetables"	0.802		
CCMB4. "Reads about environmental topics"	0.798		
CCMB6. "Looks for ways of reuse products"	0.763		
CCMB2. "Buys products with reusable packaging"	0.744		
CCMB7. "Saves gas by walking or biking"	0.527		
GPB2. "I pay a lot of attention to the environmental compatibility of personal care products and household products when shopping"	0.901	75.67	0.70
GPB1. "I inform myself which groceries are environmentally polluted and don't buy them any longer"	0.888		
GPB3. "I more frequently deliberately buy products which have a lower environmental impact"	0.818		

Cronbach alpha: EV (0.85), CCMB (0.85), GPB (0.84).

EV: environmental values; CCMB: climate change mitigation behavior; GPB: green purchase behavior.

lives are precious and worth preserving.” This scale’s Cronbach alpha (reliability measure) in the present study is 0.73.

CCMBs: A five-item scale created by Corral-Verdugo et al. (2020) was used to measure behaviors. According to Table 1, the items are formulated to outline voluntary measures aimed at reducing GHG emissions (Table 1). The response format was a five-point Likert scale ranging from agree (1) to disagree (5). An example of the items on the scale is: “I save gas by walking or biking.” The reliability measure, Cronbach’s alpha, for this scale in the current study is 0.61. A three-item scale modified by Moser (2015) was used to measure GPB. In the context of everyday consumer goods, items were considered to gauge environmentally conscious behavior (Table 1). The response format was a five-point Likert scale ranging from agree (1) to disagree (5). An example of the items on the scale is: “I more frequently deliberately buy products which have a lower environmental impact.” This scale’s Cronbach’s alpha (a reliability measure) in the present study is 0.75.

3.3 Data Analysis

The data obtained in this study were analyzed using statistical and methodological approaches appropriate to the research’s purpose. The mediating role of GPB in the effect of environmental values on climate change combat behaviors was examined. Quantitative analysis was performed using the IBM SPSS 30 software package program. The collected data were examined for missing data, outliers, and inconsistencies before analysis. Skewness–Kurtosis values, which are kurtosis and skewness values, were checked to evaluate normality assumptions in the data set with no missing data. In addition, variance inflation factor values were calculated to eliminate possible multicollinearity problems between variables. Mean, standard deviation, and frequency analyses were used to understand the general tendencies of the participants toward environmental values, GPBs, and CCMBs. Cronbach’s alpha coefficient was calculated to evaluate the reliability of the scales used in the study, and it was found that all scales had an acceptable reliability level ($\alpha > 0.70$) (Cronbach, 1951). In addition, exploratory factor analysis (EFA) was applied to evaluate the validity of the measurement tools. To test the main hypotheses of the study, the Hayes Process Macro, which is more accepted today, was used, unlike the traditional Baron and Kenny’s mediation analysis approach (Gürbüz & Bayık, 2021).

CFA was conducted to verify the factor analysis conducted in the study and to strengthen the measurement

model. CFA is used to test the developed theory, and CFA tests certain hypotheses regarding the nature of the factors (Henson & Roberts, 2006). Analyses are conducted through SEM to reveal fit index values. To strengthen the validity of the study, the measurement model was tested by examining the goodness of fit indexes. In the evaluation of the model, various fit indexes such as the chi-square test, RMSEA, and standardized residual values were highlighted. Then, path analysis was conducted to reveal the causal relationship. The most accurate method for performing CFA and revealing fit indexes was investigated, as AMOS gives good results in large samples and PLS-SEM does not have goodness-of-fit values calculated in classical SEM applications (Sarstedt et al., 2021), so the analysis was done using the Python programming language. Many important authors in the international literature have studied and used Python modules, especially in areas such as software development, data analysis, computer science, and machine learning (Kelleher, 2020). Today, it is also used in the fields of organizational behavior and human resources (Androniceanu, 2025).

4 Findings

Since EFA provides a real factor solution without interfering with the nature of the data, it is recommended to start the analysis with EFA first (Bektas, 2017). To test the construct validity of the scales used in the study, the variables were tested with EFA. According to the explanatory factor analysis (Table 1), the explained variance of the variables is 54.14% (environmental values), 57.08% (climate change mitigation behavior), and 75.67% (green purchase behavior). According to the analysis, the values of the environmental change variable are $KMO = 0.86$; $X^2 = 650.995$; $df = 21$; $p < 0.001$. CCMB is $KMO = 0.84$; $X^2 = 581.143$; $df = 15$; $p < 0.001$. GPB is $KMO = 0.70$; $X^2 = 299.841$; $df = 3$; $p < 0.001$. Since the factor loading of CCMB1 remained below 0.50, it was removed from the analysis (Tabachnick & Fidell, 2013). The values obtained from factor analysis show that the data set is sufficient to perform factor analysis (Hair et al., 2010). Cronbach alpha values of the scales are environmental values $\alpha = 0.85$, CCMB $\alpha = 0.85$, and $\alpha = 0.84$ GPB.

As a result of the factor analysis used, the Mahalanobis (1936) distance method was used to determine whether there were extreme values between multiple variables in the data set. In addition, the suitability of the data set to a normal distribution was evaluated by examining the skewness and kurtosis values. To comply with the normal distribution, Tabachnick and Fidell (2013) accept that the

Table 2: Average values of variables

Items	Minimum	Maximum	\bar{X}	SD
EV1	1	5	4.46	0.92
EV2	1	5	4.37	0.93
EV3	1	5	4.26	1.11
EV4	1	5	4.51	0.86
EV5	1	5	3.74	1.23
EV6	1	5	4.03	1.16
EV7	1	5	4.18	1.13
EV scale overall			4.22	1.04
CCMB2	1	5	3.24	1.16
CCMB3	1	5	3.42	1.22
CCMB4	1	5	3.25	1.28
CCMB5	1	5	3.58	1.24
CCMB6	1	5	3.08	1.45
CCMB7	1	5	4.11	1.05
CCMB scale overall			3.44	1.23
GPB1	1	5	3.24	1.24
GPB2	1	5	3.29	1.16
GPB3	1	5	3.01	1.66
GPB scale overall			3.18	1.35

distribution is normal when the skewness and kurtosis values are between ± 1.50 . In this study, kurtosis and skewness values are EV (1.240; -1.414), CCMB (-0.711; -0.265), and GPB (-0.484; -0.265).

According to Table 2, minimum, maximum, mean (\bar{X}), and standard deviation (SD) values are reported for the items (e.g., EV1, EV2) collected under different factors (EV, CCMB, GPB).

EV scale: the highest mean was observed at EV4 (4.51), and the lowest mean was observed at EV5 (3.74). Generally, the average of all items, “EV scale overall” is 4.22. This shows that the participants typically approach environmental values positively. CCMB was observed with the highest mean in CCMB7 (4.11) and the lowest mean in CCMB6 (3.08). The overall mean (“CCMB scale overall”) was 3.44. This suggests that the participants’ concern about CCMB was moderate. In the GPB scale, the highest mean was observed in GPB2 (3.29), and the lowest mean was observed in GPB3 (3.01). The overall mean (“GPB scale overall”) was 3.18. This indicates that the participants had an average attitude toward GPB.

In the analysis of this research, descriptive statistics such as correlation between variables, reliability statistics, mean, and standard deviation were tested with Pearson correlation analysis to understand how the variables are related to each other, which are presented in Table 3.

As shown in Table 3, there is a statistically significant and positive relationship ($r = 0.352^{**}$) between EVs and CCMB, a statistically significant and positive relationship

Table 3: Descriptive statistics, correlation, and internal consistency levels of variables

Variables	Mean	SD	1	2	3
Environmental values	4.22	0.76	(0.99)		
CCMB	3.44	0.93	0.352**	(0.99)	
Green purchase behavior	3.18	1.07	0.361**	0.699**	(0.99)

*Correlation is significant at $p < 0.05$ significance level. **Correlation is significant at $p < 0.01$ significance level; internal consistency levels (Cronbach’s alpha) are presented in parentheses. (Yildiz et al. 2017)

($r = 0.361^{**}$) between Green Purchase Behavior, and finally a statistically significant, strong, and positive relationship ($r = 0.699^{**}$) between CCMB and green purchase behavior.

These results show that individuals with environmental values exhibit more behaviors aimed at reducing climate change. This result is consistent with the literature on the reflection of environmental values in behaviors (Schultz, 2001; Stern, 2000). Similarly, the tendency of individuals with environmental values to purchase green products is also consistent with the literature. This consistency shows that individuals’ value orientations are also reflected in consumption. It is particularly parallel to research on value-based consumption tendencies (Thøgersen, 2005). In addition, it shows that green consumption behaviors may be part of a more general environmental responsibility behavior pattern. In other words, individuals who exhibit CCMBs are also likely to have environmental sensitivity in the products they consume.

The results of the correlation analysis in Table 3 show that the logical validity envisaged between the variables before moving on to causal relationships (Hair et al., 2010) was achieved. The causal effect of environmental values on GPB and the mediating effect of CCMB on this relationship were analyzed using the PROCESS macro developed by Hayes (2012, 2013) for the SPSS program.

The model results (Table 4) show that the effect of EV on CCMB is significant, $B = 0.430$, $SE = 0.075$, $t(234) = 5.75$, $p < 0.001$, 95% CI [0.282, 0.577]. The standardized coefficient ($\beta = 0.352$) indicates that EV moderately affects CCMB. The model is generally significant ($F(1, 234) = 33.00$, $p < 0.001$). These findings reveal that the effect of EV on CCMB is significant and measurable. In other words, increases in EV lead to a positive and statistically significant increase in CCMB. In the analyses conducted for GPB, both the direct effect of EV and the effect of CCMB were examined. The model explained 50.4% of the total variance ($R^2 = 0.504$, $F(2, 233) = 118.22$, $p < 0.001$). The effect of CCMB on GPB is quite strong and significant ($B = 0.748$, $SE = 0.057$, $t(233) = 13.24$, $p < 0.001$, 95% CI [0.637, 0.860]). The standardized coefficient ($\beta = 0.653$) indicates that CCMB has a high effect on

Table 4: Analysis results

Variable	B	SE	β	t	p	LLCI	ULCI
CCMB							
Constant	1.632	0.321	—	5.086	<0.001	1.000	2.264
Environmental values	0.430	0.075	0.352	5.745	<0.001	0.282	0.577
GPB							
Constant	-0.178	0.292	—	-0.610	0.542	-0.755	0.398
Environmental values (direct)	0.185	0.069	0.132	2.675	0.008	0.049	0.321
CCMB (indirect)	0.748	0.057	0.653	13.235	<0.001	0.637	0.860
Effect type	Effect	SE	T	p	LLCI	ULCI	Std. effect (β)
Total effect ($X \rightarrow Y$)	0.506	0.085	5.927	<0.001	0.338	0.675	0.361
Direct effect ($X \rightarrow Y$)	0.185	0.069	2.675	0.008	0.049	0.321	0.132
Indirect effect ($X \rightarrow M \rightarrow Y$)							
CCMB	0.322	0.072	—	—	0.182	0.465	0.229

GPB. The direct effect of EV on GPB is significant but weaker ($B = 0.185$, $SE = 0.069$, $t(233) = 2.68$, $p = 0.008$, 95% CI [0.049, 0.321]). The standardized coefficient ($\beta = 0.132$) suggests that the direct effect is small.

In this study, when the indirect effects and mediation analysis were examined (Table 5), the indirect effects were tested according to the bootstrap method and were significant ($B = 0.322$, $BootSE = 0.072$, 95% CI [0.182, 0.465]). The standardized indirect effect ($\beta = 0.229$) shows that the mediation is moderate. These results indicate that CCMB is a significant mediator of the relationship between EV and GPB. Compared to the total effect ($B = 0.506$, $SE = 0.085$, $t(234) = 5.93$, $p < 0.001$, 95% CI [0.338, 0.675], $\beta = 0.361$), the indirect effect appears to account for a larger portion of the total effect.

These findings support the TPB model. Although the environmental values held by individuals do not directly have a large effect on consumption, they indirectly drive green consumption through environmental awareness and responsible behaviors (e.g., CCMB). This suggests that policies or campaigns aimed at increasing environmental awareness should not only create value but also strengthen

the intermediary mechanisms through which these values are translated into behavior.

Following EFA and regression analysis with Hayes macro, CFA and path analysis were conducted within the scope of SEM to strengthen the validity of the study. For a model to be acceptable, the “goodness of fit criteria” that reveal how consistent the relationships in the model are with the data are examined. The findings of the CFA conducted with Python and the suggested acceptance range of the criteria used in the evaluation of the model-data fit and the accuracy of the established theory are given in Table 5.

It is observed that the goodness-of-fit values in Table 5 are within the reference values in the literature. According to the obtained data, $X^2/df = 2.65$; $GFI = 0.974$; $AGFRI = 0.973$; $CFI = 1.012$; $RMSEA = 0.090$; $SRMR = 0.000$ AND $NFI = 0.894$. The most deficient aspect of the NFI statistic is that it shows low suitability in models studied with samples under 200 (Mulaik et al., 1989, pp. 430–445). The sample of this study is 236, and it is quite close to 0.90, with 0.894; therefore, the fit of the model can be considered strong. The results of CFA showed that each variable represented

Table 5: Goodness-of-fit values

Index	Result	Comment
X^2/df	2.65	This coefficient is considered acceptable if it falls between 2 and 5 (Hu & Bentler, 1999; Kline, 2023; Kwon & Marzec, 2016)
GFI	0.974	Although a GFI value of ≥ 0.90 indicates an acceptable range, there is no established minimum acceptable threshold (Davicik, 2014)
AGFI	0.973	Similar to the GFI, AGFI ranges between 0 and 1, with values of 0.90 or higher indicating good model fit (Karaman, 2023)
CFI	1.012	The CFI value should be close to or above 0.95 (Hu & Bentler, 1999)
RMSEA	0.090	RMSEA values of ≤ 0.05 are considered excellent, 0.05 to 0.08 good, 0.08 to 0.10 mediocre, and above 0.10 unacceptable (Sarmiento & Costa, 2019)
SRMR	0.000	An RMR value below 0.08 indicates good model fit, while an SRMR value of 0 indicates a perfect fit (Cakir, 2019)
NFI	0.894	The NFI ranges between 0 and 1, with 0.90 generally considered a threshold for good fit (Hu & Bentler, 1999)

importance of environmental sustainability and the protection of natural resources. In the visual, capitalized words such as “environment,” “nature,” “life,” “living,” and “everything” reveal the central role of these concepts around the main theme. In addition, words such as “future,” “protect,” “health,” “harmony,” and “sustainability” draw attention to the reciprocal relationship between humans and nature, indicating long-term environmental responsibilities.

5 Discussion

This study aims to examine the mediating role of GPB in the effect of environmental values on climate change combat behaviors. This study developed a conceptual framework and empirically tested it using data gathered from a diverse sample of participants, drawing on several theoretical frameworks, including the value-attitude-behavior model. As will be discussed later, the study’s conclusions have both theoretical and practical implications.

5.1 Theoretical Implications

This study examines how environmental values influence behaviors related to climate change mitigation and green purchasing. Unlike previous research, which has mostly concentrated on broad environmental values and behaviors (Kaiser et al., 1999; Karp, 1996), this study clearly examines how environmental values impact green buying behaviors indirectly through CCMBs. This approach offers a more nuanced understanding of how green consumer behaviors reflect environmental values. Two of the study’s significant accomplishments are the Turkish translation of the climate change behavior scale and the validity and reliability tests conducted. This translation ensures the applicability of the scale for use in future studies in Turkey, enabling a more precise evaluation of individuals’ climate-related behaviors. This study is consistent with the existing literature examining how environmental values influence sustainable consumption behavior, and it has been noted that these values have a strong impact (Lee et al., 2015; Pakpour et al., 2021; Perera et al., 2024). However, studies on consumption value and sustainable consumption intention have examined the effect of self-identity, revealing a strong relationship and the mediating role of self-identity (Qasim et al., 2019; Zhao et al., 2023). On the other hand, it has been found that perceived gaps in environmental values negatively affect individuals’ behavior and weaken their tendency to repurchase sustainable products (Biswas, 2017).

This study contributes to the overall understanding of sustainable consumer behavior in the literature by demonstrating how CCMBs influenced by environmental values affect green buying behaviors (Eng et al., 2022). Previous studies conducted in Turkey have examined environmental concern and green buying behavior from various perspectives. For example, consumers’ environmental consciousness has been recognized through some of the earlier research studies conducted in Turkey (Alniacik, 2009; Aytöp et al., 2021; Dogan et al., 2017; Duru & Şua, 2013; Özcalık, 2020; Paylan & Varinli, 2013; Yaras et al., 2011; Yilmaz et al., 2009), and others have examined green consumption patterns of products (Eti, 2017; Onurlubas et al., 2017; Özcan & Özgül, 2019; Sua, 2012; Tayfun & Olcü, 2016; Yuruk Kayapınar et al., 2019). This study focuses on examining the impact of environmental values on CCMBs and GPBs through the value-attitude-behavior model. It provides a more detailed understanding of how environmental values influence sustainable consumption behaviors, particularly by examining their effects through CCMBs. This comprehensive approach offers a more thorough understanding of how environmental values, social norms, and perceived behavioral control shape green purchasing and CCMBs.

5.2 Practical Implication

This study has several real-world implications for legislators, educators, corporations, and neighborhood associations interested in promoting eco-friendly practices and mitigating climate change. First, the results emphasize the need for more environmental awareness initiatives that promote climate change mitigation measures. Policymakers must create targeted public awareness campaigns that inspire a sense of personal accountability and clearly explain the connection between individual lifestyle choices and environmental impact. In addition, green labeling and certification schemes for goods can promote environmentally responsible consumption habits by making it simpler to recognize and choose environmentally friendly products.

It is crucial for the education system to include lessons on climate change and sustainability in curricula at all educational levels. Through education, students can develop an appreciation for the environment and become more aware of the need to address climate change. In addition, community-based adult education initiatives can raise public awareness of sustainable lifestyles. Social media and digital platforms can also increase access to educational resources. Businesses must foster a culture of sustainability

by promoting eco-friendly behaviors, such as recycling, energy conservation, and responsible consumption, among their staff members. Businesses can create and promote sustainable products by aligning their offerings with their customers' environmental values. Providing employees with sustainability training and incentivizing employees who practice sustainability can reinforce sustainable practices within the company. Finally, social action can be vital in fostering sustainability. Local governments and community organizations should organize environmental events, such as tree planting, recycling campaigns, and awareness campaigns, to engage the public in mitigating climate change. Partnerships with social media influencers and media outlets can also increase public awareness of climate change issues and sustainable living.

5.3 Limitations and Future Research

Although the current empirical findings align with the previously discussed theoretical reasoning and conventional beliefs, this study, like many others, is not entirely free of limitations. First, the study may not capture all ecological variables at the national level because it was conducted in a specific metropolitan region. This geographical limitation may restrict the generalizability of the findings. Despite this limitation, the research provides valuable insights into the urban green movement and offers empirical support for a widely accepted theoretical framework. Second, the use of a five-point Likert scale survey method based entirely on participants' self-reports may have caused a positive response bias. This is a common limitation of self-reported data, where participants may give socially desirable responses rather than their true opinions. Third, a significant lack of knowledge among consumers about the uses and values of green products may have affected the results. Such limited consumer awareness may prevent them from making conscious purchasing decisions, which could impact findings related to GPB.

This situation, where participants provide responses that align with social expectations rather than their true opinions, is a common limitation of survey-based data collection methods. Fourth, the RMSEA value reported in this study indicates the model's fit with the sample. This result suggests an acceptable but low level of model fit. This outcome can be attributed to the fact that the study was conducted on a newly recognized topic in Turkey using a convenience sampling method. In future research, studies can be conducted using probabilistic sampling methods based on the level of interest in the subject. Moreover,

the generalizability of the findings is limited by the characteristics of the sample. This study focused on a specific sample, and the results may not be fully applicable to other demographic groups. Future studies could include a more diverse sample, covering different age groups, regions, and socioeconomic backgrounds, to enhance the generalizability of the findings. Especially as the new generation, Gen-Z, enters the business world and shows purchasing behavior or the possibility of changing the business environment in terms of the environment will increase. It is seen in the literature that the new generation has different values (Abubakar et al., 2025). In this direction, studies can be developed, especially on Gen-Z. Finally, due to the significance of meat-based nutrition in Turkish culture, its place in cultural life, and the fact that the majority of the Turkish population is Muslim, with the concept of Eid al-Adha being prominent, an additional vegan and vegetarian grouping was not made.

Future work that incorporates cross-cultural comparative studies can further enhance our understanding of how cultural differences impact environmental values and GPB. Due to Turkey's seven distinct regions and its multicultural structure, such studies could reveal how diverse cultural contexts shape individuals' environmental attitudes and behaviors. These insights would provide a more comprehensive understanding of the factors driving sustainable practices across different cultural groups. In addition, it is recommended that future research explore CCMB within the field of education and among samples of children and adolescents. Such studies can offer valuable insights into the development of young individuals' environmental values and their willingness to engage in climate-friendly behaviors. Future research focusing on educational settings can contribute to restructuring educational policies to place a stronger emphasis on sustainable development, sustainability, and environmental awareness.

6 Conclusion

This study explores the relationship between environmental values and GPB, as well as the role of CCMB in mediating this link. The findings show that preventing climate change is the main way environmental values influence GPB. These results underscore the importance of bridging the gap between perception, attitude, and behavior in the perception–attitude–behavior model, emphasizing that having pro-environmental views is not enough; these views must be translated into actions. This study examines how environmental values affect climate change

mitigation from the standpoint of sustainable development and how green purchasing practices mediate this relationship. The empirical results indicate a significant and positive relationship between GPB and environmental values from the standpoint of sustainable development. According to the empirical results, some general suggestions are presented to individuals in society. Within the framework of these suggestions, the cultural background should not be forgotten. At the same time, suggestions for future researchers are presented. Finally, future research could benefit from more complex models and the inclusion of additional mediating variables to capture the dynamics of these relationships better.

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References

Abubakar, A. M., Turunç, Ö., Soliman, M., & Sukhov, A. (2025). Exploring the role of information systems-induced depletion, boreout syndrome, social media use on quiet quitting among digital cohorts. *International Journal of Information Management*, *84*, 102911. doi: 10.1016/j.ijinfomgt.2025.102911.

- Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: A review. *British Food Journal*, *111*(10), 1140–1167. doi: 10.1108/00070700910992961.
- Agag, G., & Colmekcioglu, N. (2020). Understanding guests' behavior to visit green hotels: The role of ethical ideology and religiosity. *International Journal of Hospitality Management*, *91*, 102679. doi: 10.1016/j.ijhm.2020.102679.
- Ajzen, I. (1988). *Attitudes, personality and behaviour*. Open University Press.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179–211. doi: 10.1016/0749-5978(91)90020-T.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall.
- Ajzen, I. (2006). Behavioral interventions based on the theory of planned behavior. *Journal of Applied Social Psychology*. doi: 10.1111/j.1559-1816.2002.tb00236.x.
- Ajzen, I., & Fishbein, M. (2011). Attitudes and the attitude-behavior relation: Reasoned and automatic processes. *European Review of Social Psychology*, *11*, 1–33. doi: 10.1080/14792779943000116.
- Alniacik, Ü. (2009). Tüketicilerin çevreye duyarlılığı ve reklamlardaki çevreci iddialar. *Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *2*(18), 48–79.
- Andrews, T. M., Kline, R., Krupnikov, Y., & Ryan, J. B. (2022). Too many ways to help: How to promote climate change mitigation behaviors. *Journal of Environmental Psychology*, *81*, 101806. doi: 10.1016/j.jenvp.2022.101806.
- Andronicăanu, M. (2025). Efficiency and prediction in human resource management using Python modules. *Theoretical and Empirical Researches in Urban Management*, *20*(1), 88–103.
- Ang, F., Passel, S., & Mathijs, E. (2011). An aggregate resource efficiency perspective on sustainability: A Sustainable Value application to the EU-15 countries. *Ecological Economics*, *71*, 99–110. doi: 10.1016/j.ecolecon.2011.08.008.
- Aytop, Y., Çetinkaya, S., & Tulan, C. (2021). Çevre Duyarlılığının Çevreci Satın Alma Davranışına Etkisinin Belirlenmesi. *Turkish Journal of Agriculture-Food Science and Technology*, *9*(2), 368–374. doi: 10.24925/turjaf.v9i2.368-374.4011.
- Bamberg, S., Rees, J., & Seebauer, S. (2015). Collective climate action: Determinants of participation intention in community-based environmental initiatives. *Journal of Environmental Psychology*, *43*, 155–165. doi: 10.1016/j.jenvp.2015.06.006.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychology Review*, *84*, 191–215. doi: 10.1037/0033-295X.84.2.191.
- Bektas, H. (2017). *Açıklayıcı Faktör Analizi* (1st ed.). BETA Yayıncılık.
- Biswas, A. (2017). A consumption value-gap analysis for sustainable consumption. *Environmental Science and Pollution Research*, *24*(8), 7714–7725. doi: 10.1007/s11356-016-8355-9.
- Boldero, J. (1995). The prediction of household recycling of newspapers: The role of attitudes, intentions, and situational factors 1. *Journal of Applied Social Psychology*, *25*(5), 440–462. doi: 10.1111/j.1559-1816.1995.tb01598.x.
- Cakir, F. S. (2019). Kısmi en küçük kareler yapısal eşitlik modellemesi (PLS-SEM) ve bir uygulama. *Sosyal Araştırmalar ve Davranış Bilimleri*, *5*(9), 111–128.
- Chan, R. Y., & Lau, L. B. (2000). Antecedents of green purchases: A survey in China. *Journal of Consumer Marketing*, *17*(4), 338–357. doi:10.1108/07363760010335358.
- Chekima, B., Wafa, S. A. W. S. K., Igau, O. A., Chekima, S., & Sondoh Jr, S. L. (2016). Examining green consumerism motivational drivers: Does

- premium price and demographics matter to green purchasing?. *Journal of Cleaner Production*, 112, 3436–3450. doi: 10.1016/j.jclepro.2015.09.102.
- Chen, T. B., & Chai, L. T. (2010). Attitude towards the environment and green products: Consumers' perspective. *Management Science and Engineering*, 4(2), 27–39. <https://core.ac.uk/download/pdf/236301777.pdf>. (Accessed 7 Sept. 2024).
- Clayton, S., Devine-Wright, P., Stern, P. C., Whitmarsh, L., Carrico, A., Steg, L., & Bonnes, M. (2015). Psychological research and global climate change. *Nature Climate Change*, 5(7), 640–646. doi: 10.1038/NCLIMATE2622.
- Conner, M., & Armitage, C. J. (1998). Extending the theory of planned behavior: A review and avenues for further research. *Journal of Applied Social Psychology*, 28(15), 1429–1464. doi: 10.1111/j.1559-1816.1998.tb01685.x.
- Corral-Verdugo, V., Lucas, M. Y., Tapia-Fonllem, C., & Ortiz-Valdez, A. (2020). Situational factors driving climate change mitigation behaviors: The key role of pro-environmental family. *Environment, Development and Sustainability*, 22, 7269–7285. doi: 10.1007/s10668-019-00496-0.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334.
- Davcik, N. S. (2014). The use and misuse of structural equation modeling in management research: A review and critique. *Journal of Advances in Management Research*, 11(1), 47–81.
- Dietz, T., Paul C. S., & Gregory A. G. (1998). Social structural and social psychological bases of environmental concern. *Environment and Behavior*, 30(4), 450–471. doi: 10.1177/0013916598030004.
- Dietz, T., & Whitley, C. T. (2018). Inequality, decisions, and altruism. *Sociology of Development*, 4(3), 282–303. doi: 10.1525/sod.2018.4.3.282.
- Dogan, G. H., Gürel, E., & Gürlü, A. Z. (2017). Kahramanmaraş ili merkez ilçede yaşayan bireylerin çevresel duyarlıkları ve bilgi düzeyleri üzerine bir araştırma. *The Journal of Academic Social Science Studies*, 54, 165–178.
- Doherty, K. L., & Webler, T. N. (2016). Social norms and efficacy beliefs drive the Alarmed segment's public-sphere climate actions. *Nature Climate Change*, 6, 879–884. doi: 10.1038/nclimate3025.
- Dunlap, R. E., & Mertig, A. G. (1995). Global concern for the environment: is affluence a prerequisite?. *Journal of Social Issues*, 51(4), 121–137. doi: 10.1111/j.1540-4560.1995.tb01351.x.
- Duru, M. N., & Şua, E. (2013). Yeşil pazarlama ve tüketicilerin çevre dostu ürünleri kullanma eğilimleri. *Düzce Üniversitesi Ormanlık Dergisi*, 9(2), 126–136.
- Elkington, H., & Makower. (1988). *The green consumers*. Penguin Books.
- Eng, N., Buckley, C., & Peng, R. X. (2022). Tracking the path of the green consumer: Surveying the decision-making process from self-transcendent values to supportive CSR intentions. *Sustainability*, 14(3), 1106. doi: 10.3390/su14031106.
- Eti, H. S. (2017). Yeşil tüketim: Tekirdağ ilinde yeşil tüketim alışkanlığı ve yeşil tüketicilerin satın alma davranışı üzerine bir inceleme. *Balkan ve Yakın Doğu Sosyal Bilimler Dergisi*, 3, 95–98.
- Fishbein, M., & Ajzen, I. (1977). *Belief, attitude, intention, and behavior: An introduction to theory and research*. https://philpapers.org/rec/FISBAI?all_versions=1. (Accessed 6 Sept. 2024).
- Floyd, D. L., Prentice-Dunn, S., & Rogers, R. W. (2006). A meta-analysis of research on protection motivation theory. *Journal of Applied Social Psychology*, 30, 407–429. doi: 10.1111/j.1559-1816.2006.tb02323.x.
- Geiger, N., Swim, J. K., & Fraser, J. (2017). Creating a climate for change: Interventions, efficacy and public discussion about climate change. *Journal of Environmental Psychology*, 51, 104–116. doi: 10.1016/j.jenvp.2017.03.010.
- Gimenez-Jimenez, D., & Harc, M. (2024). Students' sustainable entrepreneurship intentions: The role of sustainable values and culture. *The Journal of Entrepreneurship*, 33, 118–154. doi: 10.1177/09713557241232246.
- Gkargkavouzi, A., Halkos, G., & Matsiori, S. (2019). Environmental behavior in a private-sphere context: Integrating theories of planned behavior and value belief norm, self-identity and habit. *Resources, Conservation and Recycling*, 148, 145–156. doi: 10.1016/J.RESCONREC.2019.01.039.
- Greaves, M., Zibarras, L., & Stride, C. (2013). Using the theory of planned behavior to explore environmental behavioral intentions in the workplace. *Journal of Environmental Psychology*, 34, 109–120. doi: 10.1016/J.JENVP.2013.02.003.
- Gupta, S., & Ogden, D. T. (2009). To buy or not to buy? A social dilemma perspective on green buying. *Journal of Consumer Marketing*, 26(6), 376–391. doi: 10.1108/07363760910988201.
- Gürbüz, S., & Bayık, M. E. (2021). Aracılık Modellerinin Analizinde Yeni Yaklaşım: Baron ve Kenny'nin Yöntemi Hâlâ Geçerli mi? *Turkish Journal of Psychology/Turk Psikoloji Dergisi*, 37(88), 1–14.
- Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis: A global perspective* (Vol. 7). Pearson.
- Han, H., Chua, B. L. & Hyun, S. S. (2019). Eliciting customers' waste reduction and water saving behaviors at a hotel. *International Journal of Hospitality Management*, 8, 102386. doi: 10.1016/j.ijhm.2019.102386.
- Han, H., & Hyun, S. S. (2018). Eliciting customer green decisions related to water saving at hotels: Impact of customer characteristics. *Journal of Sustainable Tourism*, 26(8), 1437–1452. doi: 10.1080/09669582.2018.1458857.
- Haq, M. M., Miah, M., Biswas, S., & Rahman, S. M. M. (2023). The impact of deontological and teleological variables on the intention to visit green hotel: The moderating role of trust. *Heliyon*, 9(4), e14720. doi: 10.1016/j.heliyon.2023.e14720.
- Hassani, H., Huang, X., & Silva, E. (2019). Big data and climate change. *Big Data and Cognitive Computing*, 3(1), 12. doi: 10.3390/bdcc3010012.
- Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling*. University of Kansas.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.
- Haytko, D. L., & Matulich, E. (2008). Green advertising and environmentally responsible consumer behaviors: Linkages examined. *Journal of Management and Marketing Research*, 1, 2.
- Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological Measurement*, 66(3), 393–416.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- Ivanova, D., Barrett, J., Wiedenhofer, D., Macura, B., Callaghan, M., & Creutzig, F. (2020). Quantifying the potential for climate change mitigation of consumption options. *Environmental Research Letters*, 15(9), 093001. doi: 10.1088/1748-9326/ab8589.
- Jansson, J., Marell, A., & Nordlund, A. (2010). Green consumer behavior: Determinants of curtailment and eco-innovation adoption. *Journal of*

- Consumer Marketing*, 27(4), 358–370. doi: 10.1108/07363761011052396.
- Jones, R. N. (2001). An environmental risk assessment/management framework for climate change impact assessments. *Natural Hazards*, 23(2), 197–230. doi: 10.1023/A:1011148019213.
- Jugert, P., Greenaway, K. H., Barth, M., Büchner, R., Eisentraut, S., & Fritsche, I. (2016). Collective efficacy increases pro-environmental intentions through increasing self-efficacy. *Journal of Environmental Psychology*, 48, 12–23. doi: 10.1016/j.jenvp.2016.08.003.
- Kaiser, F. G., Wöfling, S., & Fuhrer, U. (1999). Environmental attitude and ecological behaviour. *Journal of Environmental Psychology*, 19(1), 1–19.
- Kalafatis, S. P., Pollard, M., East, R., & Tsogas, M. H. (1999). Green marketing and Ajzen's theory of planned behavior: A cross-market examination. *Journal of Consumer Marketing*, 16(5), 441–460. doi: 10.1108/07363769910289550.
- Karaman, M. (2023). Keşfedici ve Doğrulayıcı Faktör Analizi: Kavramsal Bir Çalışma. *Uluslararası İktisadi ve İdari Bilimler Dergisi*, 9(1), 47–63.
- Karp, D. G. (1996). Values and their effect on pro-environmental behavior. *Environment and Behavior*, 28 (1), 111–113. doi: 10.1177/001391659628100.
- Kaufmann, H. R., Panni, M. F. A. K., & Orphanidou, Y. (2012). Factors affecting consumers' green purchasing behavior: An integrated conceptual framework. *Amfiteatru Economic Journal*, 14(31), 50–69. <https://www.econstor.eu/handle/10419/168746>. (Accessed 6 Sept. 2024).
- Kelleher, J. D. (2020). Introduction to machine learning with Python: Practical guides and solutions. *AI Open*, 3(2), 127–136. doi: 10.1002/aiopen.2020.30.
- Kirat, Y., Prodromou, T., & Suardi, S. (2024). Unveiling the Nexus: Climate change, green innovation, and the pendulum of energy consumption and carbon emissions. *Energy Economics*, 138, 107727. doi: 10.1016/j.eneco.2024.107727.
- Kline, R. B. (2023). *Principles and practice of structural equation modeling*. 5th edn. Guilford Publications.
- Kölbel, J. F., Heeb, F., Paetzold, F., & Busch, T. (2020). Can sustainable investing save the world? Reviewing the mechanisms of investor impact. *Organization & Environment*, 33(4), 554–574. doi: 10.1177/108602662091920.
- Korkmaz, M., Atay, L., & Yıldırım, H. M. (2017). Yeşil ürün satın alma davranışı, kişilerarası etkilenme eğilimi ve sosyal etki arasındaki ilişki: Üniversite öğrencileri üzerine bir araştırma. *Seyahat ve Otel İşletmeciliği Dergisi*, 14(3), 40–52.
- Krause, D. (1993). Environmental consciousness: An empirical study. *Environment and Behavior*, 25(1), 126–142. doi: 10.1177/00139165932510.
- Kwon, Y., & Marzec, M. L. (2016). Does worksite culture of health (CoH) matter to employees? Empirical evidence using job-related metrics. *Journal of Occupational and Environmental Medicine*, 58(5), 448–454.
- Laroche, M., Begeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503–520. doi: 10.1108/EUM000000006155.
- Lee, K. (2008). Opportunities for green marketing: Young consumers. *Marketing Intelligence & Planning*, 26(6), 573–586. doi: 10.1108/02634500810902839.
- Lee, C., Levy, D., & Yap, C. S. F. (2015). How does the theory of consumption values contribute to place identity and sustainable consumption. *International Journal of Consumer Studies*, 39(6), 597–607. doi: 10.1111/ijcs.12231.
- List, M., Schmidt, F. T. C., Mundt, D., & Föste-Eggers, D. (2020). Still green at fifteen? Investigating environmental awareness of the PISA 2015 population: Cross-national differences and correlates. *Sustainability*, 12(7), 2985. doi: 10.3390/su12072985.
- Liu, C. H., Horng, J. S., Chou, S. F., Yu, T. Y., Lee, M. T., & Lapuz, M. C. B. (2023). Discovery sustainable servicescape on behavioural intention practices and nationality: The moderating role of parasocial interaction. *Journal of Retailing and Consumer Services*, 71, 103213. doi: 10.1016/j.jretconser.2022.103213.
- Lubell, M., Zahran, S., & Vedlitz, A. (2007). Collective action and citizen responses to global warming. *Political Behavior*, 29, 391–413.
- Mainieri, T., Barnett, E. G., Valdero, T. R., Unipan, J. B., & Oskamp, S. (1997). Green buying: The influence of environmental concern on consumer behavior. *The Journal of Social Psychology*, 137(2), 189–204. doi: 10.1080/00224549709595430.
- Mahalanobis, P. C. (1936). A note on the statistical and biometric writings of Karl Pearson. *Sankhyā: The Indian Journal of Statistics (1933-1960)*, 2(4), 411–422. <<https://www.jstor.org/stable/40383786>. Accessed 10 Oct. 2025>.
- Marcon, A., Ribeiro, J. L. D., Dangelico, R. M., de Medeiros, J. F., & Marcon, E. (2022). Exploring green product attributes and their effect on consumer behaviour: A systematic review. *Sustainable Production and Consumption*, 32, 76–91. doi: 10.1016/j.spc.2022.04.012.
- Martin, B., & Simintiras, A. C. (1995). The impact of green product lines on the environment: Does what they know affect how they feel?. *Marketing Intelligence & Planning*, 13(4), 16–23. doi: 10.1108/02634509510088991.
- Mendleson, N., & Polonsky, M. J. (1995). Using strategic alliances to develop credible green marketing. *Journal of Consumer Marketing*, 12(2), 4–18. doi: 10.1108/07363769510084867.
- Moser, A. K. (2015). Thinking green, buying green? Drivers of pro-environmental purchasing behavior. *Journal of Consumer Marketing*, 32(3), 167–175. doi: 10.1108/JCM-10-2014-1179.
- Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin*, 105(3), 430.
- Nielsen, K. S., Cologna, V., Bauer, J. M., Berger, S., Brick, C., Dietz, T., & Wolske, K. S. (2024). Realizing the full potential of behavioural science for climate change mitigation. *Nature Climate Change*, 14(4), 322–330. doi: 10.1038/s41558-024-01951-1.
- Nielsen, K. S., Nicholas, K. A., Creutzig, F., Dietz, T., & Stern, P. C. (2021). The role of high-socioeconomic-status people in locking in or rapidly reducing energy-driven greenhouse gas emissions. *Nature Energy*, 6, 1011–1016. doi: 10.1038/s41560-021-00900-y.
- Nordlund, A. M., & Garvill, J. (2003). Effects of values, problem awareness, and personal norm on willingness to reduce personal car use. *Journal of Environmental Psychology*, 23, 339–347. doi: 10.1016/S0272-4944(03)00037-9.
- Onurlubas, E., Yildiz, E., Yildiz, S., & Dincer, D. (2017). Tüketicilerin yeşil ürün satın alma davranışlarını etkileyen faktörlerin belirlenmesi: Bursa ili örneği. III. *IBANESS Congress Series, Congress and writes, Edirne-Türkiye* (pp. 282–290).
- Özcalik, M. (2020). Kahramanmaraş halkının çevre duyarlılıkları üzerine bir araştırma. *Turkish Studies-Social*, 15(1), 477–487. doi: 10.29228/TurkishStudies.37848.
- Özcan, H., & Özgül, B. (2019). Yeşil pazarlama ve tüketicilerin yeşil ürün tercihlerini etkileyen faktörler. *Türkiye Mesleki ve Sosyal Bilimler Dergisi*, (1), 1–18.

- Pakpour, A., Lin, C.-K., Safdari, M., Lin, C.-Y., Chen, S.-H., & Hamilton, K. (2021). Using an integrated social cognition model to explain green purchasing behavior among adolescents. *International Journal of Environmental Research and Public Health*, 18(23), 12663. doi: 10.3390/ijerph182312663.
- Patterson, N. K., Lane, B. A., SandovalSolis, S., Persad, G. G., & Ortiz-Partida, J. P. (2022). Projected effects of temperature and precipitation variability change on streamflow patterns using a functional flows approach. *Earth's Future*, 10(7), e2021EF002631. doi: 10.1029/2021EF002631.
- Paylan, M. A., & Varinli, İ. (2013). Çevreye duyarlı satın alma davranışını belirleyen etkenler üzerine karşılaştırmalı bir araştırma. *Eskişehir Osmangazi Üniversitesi İİBF Dergisi*, 10(1), 153–176.
- Perera, C., Kalantari, H., & Johnson, L. W. (2024). Environmental values and sustainable consumption. *Journal of Consumer Behaviour*, 23(4), 2087–2092. doi: 10.1002/cb.2322.
- Poortinga, W., Steg, L., & Vlek, C. (2004). Values, environmental concern, and environmental behavior: A study into household energy use. *Environment and Behavior*, 36(1), 70–93. doi: 10.1177/0013916503251.
- Qasim, H., Yan, L., Guo, R., Saeed, A., & Ashraf, B. N. (2019). The defining role of environmental self-identity among consumption values and behavioral intention to consume organic food. *International Journal of Environmental Research and Public Health*, 16(7), 1106. doi: 10.3390/ijerph16071106.
- Ramlogan, R. (1997). Environment and human health: A threat to all. *Environmental Management and Health*, 8, 51–66. doi: 10.1108/09566169710166548.
- Roberts, J.A. (1996). Green consumers in the 1990s: Profile and implications for advertising. *Journal of Business Research*, 36(3), 217–231. doi:10.1016/0148-2963(95)00150-6.
- Sarmiento, R. P., & Costa, V. (2019). Confirmatory factor analysis—a case study. *arXiv preprint arXiv:1905.05598*.
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. In *Handbook of market research* (pp. 587–632). Springer International Publishing.
- Saxena, S., & Nimala, K. (2022). Climate change misinformation detection system. In *Proceedings of International Conference on Deep Learning, Computing and Intelligence: ICDCI 2021* (pp. 389–400). Springer Nature Singapore.
- Schultz, P. W. (2001). The structure of environmental concern: Concern for self, other people, and the biosphere. *Journal of Environmental Psychology*, 21(4), 327–339.
- Schultz, P. W., & Zelezny, L. C. (1999). Values as predictors of environmental attitudes: Evidence for consistency across 14 countries. *Journal of Environmental Psychology*, 19, 255–265. doi: 10.1006/jev.1999.0129.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). Academic Press. doi: 10.1016/S0065-2601(08)60281-6.
- Shamdasani, P., Chon-Lin, G. O., & Richmond, D. (1993). Exploring green consumers in an oriental culture: Role of personal and marketing mix factors. *Advances in Consumer Research*, 20(1), 488–493.
- Shen, X., Bai, X., Zhao, C., Tan, Q., Luo, G., Li, C., & Xie, Y. (2024). Global response of soil biodiversity to climate and land use changes. *Journal of Cleaner Production*, 471, 143381. doi: 10.1016/j.jclepro.2024.143381.
- Si, H., Shi, J., Tang, D., Wen, S., Miao, W., & Duan, K. (2019). Application of the theory of planned behavior in environmental science: A comprehensive bibliometric analysis. *International Journal of Environmental Research and Public Health*, 16, 2788. doi: 10.3390/ijerph16152788.
- Soomro, R. B., Mirani, I. A., Sajid Ali, M., & Marvi, S. (2020). Exploring the green purchasing behavior of young generation in Pakistan: Opportunities for green entrepreneurship. *Asia Pacific Journal of Innovation and Entrepreneurship*, 14(3), 289–302. doi: 10.1108/APJIE-12-2019-0093.
- Steffen, W., Rockström, J., Richardson, K., Lenton, T. M., Folke, C., Liverman, D., & Schellnhuber, H. J. (2018). Trajectories of the Earth System in the Anthropocene. *Proceedings of the National Academy of Sciences*, 115(33), 8252–8259. doi: 10.1073/pnas.1810141115.
- Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407–424.
- Sua, E. (2012). *Yesil pazarlama ve tüketicilerin çevre dostu ürünleri kullanma eğilimleri Yüksek Lisans Tezi*. İstanbul Aydın Üniversitesi Sosyal Bilimler Enstitüsü.
- Swim, J. K., Fraser, J., & Geiger, N. (2014). Teaching the choir to sing: Use of social science information to promote public discourse on climate change. *Journal of Land Use & Environmental Law*, 30, 91–117. <https://www.jstor.org/stable/43741160>. (Accessed 5 Sept. 2024).
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson.
- Tayfun, N. O., & Olcü, B. (2016). Çevreci ürünlerin tüketicilerin satın alma kararlarındaki yeri üzerine bir uygulama. *Niğde Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 9(3), 185–198.
- Thøgersen, J., & Ölander, F. (2003). Spillover of environment-friendly consumer behaviour. *Journal of Environmental Psychology*, 23(3), 225–236. doi: 10.1016/S0272-4944(03)00018-5.
- Thøgersen, J. (2005). How may consumer policy empower consumers for sustainable lifestyles?. *Journal of Consumer Policy*, 28, 143–177. doi: 10.1007/s10603-005-2982-8.
- Tracker, C. A. (2020). *A government roadmap for addressing the climate and post COVID-19 economic crises*. CAT (Climate Action Tracker). <https://climateactiontracker.org/publications/addressing-theclimate-and-post-covid-19economic-crises/>. (Accessed 5 Sept. 2024).
- Turna, G. B. (2024). The mediation role of environmental concern in the effect of perceived environmental knowledge on sustainable consumption behavior. *İnsan ve Toplum Bilimleri Araştırmaları Dergisi*, 13(3), 1392–1417. doi: 10.15869/itobiad.1447187.
- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. A/RES/70/1. <https://sdgs.un.org/2030agenda>. Accessed 10 Oct. 2025.
- Wordclouds.com. (2025). *Wordclouds.com*. <https://www.wordclouds.com/>.
- Yadav, R., & Pathak, G.S. (2016). Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior. *Journal of Cleaner Production*, 135, 732–739. doi: 10.1016/j.jclepro.2016.06.120.
- Yaras, E., Akın, E., & Şakacı, B. K. (2011). Tüketicilerin çevre bilinci düzeylerini belirlemeye yönelik bir araştırma. *Öneri Dergisi*, 9(35), 117–126.
- Yeon Kim, H., & Chung, J. E. (2011). Consumer purchase intention for organic personal care products. *Journal of Consumer Marketing*, 28(1), 40–47. doi: 10.1108/07363761111101930.
- Yıldız, B., Özdemir, F., Habib, E., & Çakı, N. (2017). AŞIRI NİTELİKLİLİĞİN İŞTEN AYRILMA NİYETİ ÜZERİNDEKİ ETKİSİNDE KOLEKTİF ŞÜKRANIN MODERATOR ETKİSİ. *Örgütsel Davranış Araştırmaları Dergisi*, 2(2), 40–61.

- Yılmaz, M. K., & Aytekin, R. İ. (2020). Genişletilmiş Değer-Tutum-Davranış Modeli Bağlamında Yeşil Ürün Satın Alma Davranışının İncelenmesi. *Hittit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 13(2), 439–465.
- Yılmaz, V., Celik, H. E., & Yagizer, C. (2009). Çevresel duyarlılık ve çevresel davranışın ekolojik ürün satın alma davranışına etkilerinin yapısal eşitlik modeliyle araştırılması. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 9(2), 1–14.
- Yuriev, A., Dahmen, M., Paillé, P., Boiral, O., & Guillaumie, L. (2020). Pro-environmental behaviors through the lens of the theory of planned behavior: A scoping review. *Resources, Conservation and Recycling*, 155, 104660. doi: 10.1016/j.resconrec.2019.104660.
- Yuruk Kayapınar, P., Kayapınar, O., & Ergan, S. (2019). Tüketicilerin yeşil ürün satın alma davranışlarının kuşaklar bakımından incelenmesi. *Opus Uluslararası Toplum Araştırmaları Dergisi*, 11(18), 2055–2070.
- Zagata, L. (2012). Consumers' beliefs and behavioural intentions towards organic food: Evidence from the Czech Republic. *Appetite*, 59(1), 81–89. doi: 10.1016/j.appet.2012.03.023.
- Zhao, A., Dermody, J., Koenig-Lewis, N., & Hanmer-Lloyd, S. (2023). Cultivating sustainable consumption: The role of harmonious cultural values and pro-environmental self-identity. *Journal of Consumer Behaviour*, 23(2), 1014–1031. doi: 10.1002/cb.2261.