

Article

Understanding Factors Affecting Consumers' Conscious Green Purchasing Behavior

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Abstract: The COVID-19 pandemic has had a significant impact on customer behavior. A transition from traditional to environmentally friendly purchasing has been observed in the buying- and consuming-goods setting. Our research sought to discover the factors that influence customers' conscious green purchasing behavior (GPB), even though these factors had not been extensively studied before. Additionally, it investigated how COVID-19 has impacted consumers' conscious GPB. Drawing upon the S–O–R model, we developed an integrated model to understand factors affecting conscious GPB. A total of 884 responses were gathered and analyzed by employing the structural equation modeling technique. Our study collected data from consumers in Saudi Arabia. The findings indicate that media and peer influence have a significant effect on activating both altruistic and egoistic drives, whereas family influence was shown to be insignificant. The correlations between media exposure and peer influence were significantly mediated by altruistic and egoistic motivations. The COVID-19 pandemic has had a beneficial influence on the formation process of conscious GPB. The results suggest that peers have a greater impact on conscious GPB through multiple motives, as compared to the influence of media. The findings of this examination provide several meaningful theoretical and managerial implications for marketers in the green consumption setting.

Keywords: sustainability; conscious green buying behaviors; COVID-19 impact; altruistic and egoistic motivations; S–O–R model



Citation: Alghamdi, O.A.; Agag, G. Understanding Factors Affecting Consumers' Conscious Green Purchasing Behavior. *Sustainability* **2024**, *16*, 705. <https://doi.org/10.3390/su16020705>

Academic Editor: Flavio Boccia

Received: 24 December 2023

Revised: 9 January 2024

Accepted: 12 January 2024

Published: 13 January 2024



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1. Introduction

Sustainability is a pertinent social concern, as an increasing number of consumers are becoming conscious and inquisitive about their consumption choices and the environmental consequences of those choices. In Saudi Arabia, consumers, especially the younger generation, possess knowledge regarding environmentally conscious consumption options [1]. Furthermore, embracing eco-friendly ideals has a direct impact on their buying behaviors [2]. The movement in consumer decision making towards this paradigm compels enterprises to embrace environmentally sustainable practices. Companies consequently transition to environmentally conscious production methods, thereby highlighting ethical and sustainability concerns to their consumers.

According to the European Commission, “green public procurement” is a step-by-step process that includes various stages. These stages involve evaluating products or services based on their environmental impact, accurately recognizing needs, representing them comprehensively, creating precise technical specifications, and developing selection criteria [3]. Sustainable development is a term coined by the United Nations in the publication “Our Common Future” to refer to the type of development that fulfils the current requirements without jeopardizing the capacity of future generations to fulfil their own demands [4]. The 2030 Agenda for Sustainable Development is a strategic blueprint ratified by the United Nations General Assembly in 2015. Its primary objective is to eradicate poverty and hunger

while safeguarding the environment through sustainable consumption and production practices. The agenda also emphasizes the urgency of addressing climate change to ensure that the needs of both current and future generations are met [5]. The 2030 Agenda for Sustainable Development encompasses 17 Sustainable Development Goals (SDGs), which serve as benchmarks and metrics to assess the advancement towards the primary aim of sustainable development [6]. These goals signify a collective acknowledgement of the necessity for worldwide equitable progress in social, economic, and ecological domains [7]. The concept of synergy in the context of the Sustainable Development Goals (SDGs) suggests that there is a reciprocal relationship between the different goals [8].

The generation of waste and the behaviors related to recycling have a significant influence on environmental sustainability. They can either widen the gap between the traditional linear economy model and the circular economy model (referred to as 'a green gap') or they can help facilitate the transition towards a more sustainable economy. Recycling is a behavior that can help bridge the gap in environmental consciousness and empower individuals in the global effort to achieve sustainability [9,10]. The issue of food waste holds immense importance within this environment. Attaining food sustainability and minimizing food waste are key obstacles in the pursuit of global sustainable development [9]. Minimizing food loss and waste improves the effectiveness of utilizing natural resources and decreases greenhouse gas emissions [9].

Although rapid economic expansion has significantly enhanced people's quality of life, it has concurrently escalated human activities, disturbed the ecological equilibrium, and heightened the environmental strain [11]. However, as pollution-related health problems, climate-related catastrophes, and resource scarcities have become more prevalent [12], individuals have begun to recognize the inefficiency of disconnecting the economy from the environment. Amidst the onset of the worldwide COVID-19 pandemic in 2020, cultures have increasingly recognized the significance of establishing a harmonious coexistence between humans and nature [13]. This has led to a strong advocacy for unconventional ways of living. Experts from environmental, corporate, and academic communities widely concur that to achieve sustainable development and promote ecological balance, it is necessary to increase the rate of green consumption [14].

The rise of the environmental protection movement has led to a significant focus on studying the public's increasing pro-environmental behavior and attitude in the fields of environmental psychology and eco-economy [15]. Prior examinations have created or used theoretical frameworks to model and simulate how people behave in the environment. These frameworks include the "Theory of Planned Behaviour" [16], "Norm-Activation Theory" [17], "Focus Self-Construal Theory" [18], "Goal Framing Theory" [19], and "Value-Belief-Norm Theory" [20]. Within consumers' green purchasing behavior environment, several proposed models have been suggested to enhance the explanatory capacity of existing theoretical models. These extended models, such as the ones provided by a previous examination [21], aim to expand upon the existing theoretical frameworks. Nonetheless, the prevalent disparity between attitudes and behaviors indicates significant shortcomings in the current theoretical frameworks [22,23]. Although there are proponents of the idea that integrated models can greatly boost the explanatory capability of a model, it is necessary to investigate new research approaches to further strengthen the study model for green purchasing behaviors [16].

Prior research on green purchasing behavior (GPB) has predominantly employed a unidimensional approach to its characterization and evaluation [24,25]. Although there is a consensus that GPB is just one aspect of green consumption behavior [25], this perspective fails to capture the consumer's authentic everyday buying behavior accurately and comprehensively in the green market [23]. Researchers have primarily concentrated on studying and modeling the driving force behind GPB [16] while neglecting the intricate aspects of purchasing preferences and habits. In recent times, certain studies [18,23] have provided detailed explanations and descriptions of the definition and aspects of GPB. Prior examinations examined three different categories of green buying behaviors based on the

level of sustainable awareness: “unconditional, conditional, and accidental”. Intentional (“conscious”) green consumption includes both “unconditional and conditional purchases”, whilst unintentional acquisitions refer to inadvertent purchases [23,26]. This study aims to examine the predicting processes and development logic behind both unconditional and conditional green purchasing behavior (GPB) in order to understand the practical significance of the GPB.

The profound alterations in the external circumstances resulting from the COVID-19 pandemic have significantly influenced individuals’ perception of the connection between humanity and the natural world [27]. People have exhibited diverse preferences and behaviors in response to the pandemic. A previous exploration examined the environmental emotional reactions to the spread of COVID-19, categorizing them as either positive or negative [28]. While there is a consensus that positive emotional responses towards the environment can influence people’s behavior [28], some argue that significant events like the COVID-19 pandemic have led to positive environmental initiatives in certain individuals because of major fears [24]. Further investigation is required to ascertain the existence of a “revision effect”, which refers to a shift from a positive attitude to indifference as a result of excessive worries stemming from unfavorable environmental affective reactions.

Saudi Arabia, a prominent Middle Eastern nation, has a substantial size and a population of 35.9 million individuals. The country’s per-capita income stands at USD 44,300 [29], reflecting a thriving economy. The Saudi government seeks to transform its economic reliance on environmentally unsustainable items by transitioning to a more environmentally friendly economy [30]. Customers and markets in Saudi Arabia are becoming more conscious of the escalating impact of global warming caused by non-degradable items. As a result, they are choosing to avoid non-biodegradable goods and instead select for environmentally friendly products and services [29]. The sustainable practices of Saudi Arabia and the Middle East aim to achieve a more environmentally sustainable future and enhance the overall quality of life. Saudi Arabia aims to improve the standard of living and protect future generations both domestically and internationally [31]. In pursuit of this objective, the Kingdom of Saudi Arabia convened government agencies, corporate sector institutions, and foreign leaders through two green activities to explore and implement opportunities for expeditious climate action [29,32]. In order to accomplish its sustainable objectives, it is imperative that the citizens of the nation actively demonstrate, embrace, and implement sustainable conduct in their daily routines. This paper is significant since it addresses a gap in the existing literature by providing an additional example of sustainable consumption. This research holds significance as it will contribute to comprehending the determinants that can potentially impact the consumer behavior towards green products. Consequently, it will facilitate the adoption of green products and services, thereby mitigating the adverse environmental effects at both local and global levels.

Our research seeks to address this research gap through the following research objectives: (1) to examine the impact of media exposure, family influence, and peer influence on GPB; (2) to understand the mediating roles of egoistic and altruistic variables in developing GPB; (3) to explore the influence of COVID-19 on conscious GPB; and (4) to explore the role of national culture in influencing conscious GPB.

The remainder of this paper is structured as follows. Section 2 of this paper delves into the existing body of research that focuses on examining the drivers of GPB. Following that, Section 3 presents the conceptual framework and the development of hypotheses. Section 4 pertains to this study’s methodology. Section 5 presents an examination of the data and the subsequent findings, followed by a thorough discussion of their implications. The constraints and potential areas for future investigation are addressed in Section 6.

2. Literature Review

2.1. COVID-19 Pandemic and Green Purchasing Behavior

COVID-19 is a worldwide epidemic that has impacted numerous individuals’ lives and has enforced stringent limitations on daily activities and corporate operations. It

has impacted virtually every organization worldwide, including both small and major enterprises. In March 2020, the World Health Organization (WHO) declared COVID-19 as an extremely contagious viral illness that has spread worldwide. Organizations encounter several obstacles and uncertainties in their pursuit of sustainability, including pandemics such as COVID-19 [33], environmental concerns [34], and pollution-related problems [35]. The sustainability of a firm refers to the systematic management of financial risks, social concerns, and environmental impacts, with a focus on recognizing and fulfilling commitments and possibilities related to sustainable development, even in times of uncertainty [36]. It is vital for firms to comprehend the stakeholder's predicament amongst unpredictable circumstances like the COVID-19 pandemic. It is significant to emphasize the significance of social influence in relation to customers' desire to make environmentally friendly purchases [37].

The onset of the COVID-19 pandemic has significantly affected customers' habits and behaviors, leading to the advent of a new era of consumerism that is seen to be more environmentally friendly and conducive to better health [38]. The COVID-19 pandemic, resulting from the coronavirus, has persisted since 2019. The epidemic has been observed to impact individuals' emotions, cognition, social behavior, consumption habits, education techniques, and hygiene routines. Although it is expected that the current situation will improve in the future, the pandemic has clearly had substantial effects on the market, leading to changes in its dynamics [38,39]. The COVID-19 issue has influenced consumers' perceptions and attitudes towards green food, which may result in a change in their future dietary choices. This is due to the recognized safety and health benefits associated with green foods [40]. In order to effectively respond to the growing green foods markets, it is crucial to study consumers' purchasing habits, specifically their intention to buy, which is seen as the basis of successful buying behavior. Marketers and researchers need to thoroughly understand the factors that impact customers' intents to buy environmentally friendly products, specifically in the COVID-19 environment [41,42].

2.2. S-O-R Theory

The S-O-R paradigm postulates that customer behaviors are reactions to external stimuli, and this paradigm was employed to elucidate the behaviors of individuals. In this context, intricate human behavior is dissected into two components: stimulus and response [21]. The S-O-R model, an extension of the S-R theory, was introduced by prior research [43] to incorporate the concept of the "organism" (O) as a mediating factor that accounts for the reactions of an individual who is being stimulated. This paradigm has been extensively utilized in prior studies since its conception. In this paradigm, the variable "S" serves as the catalyst for customer attitude or behavior, and its value is not constrained inside a defined range. The letter "O" represents a customer's conditions and encompasses three distinct emotions: enjoyment and arousal in the initial framework [44]. The variable "R" represents the result of an individual's psychological condition, which is modified by external stimuli [45]. In this study, the variable "S" consisted of three predictors: media, family, and peers. The variable "O" represents the emotional state associated with altruistic and egoistic factors. Lastly, the variable "R" relates to GPB.

Recently, academics have begun to categorize the idea of GPB into separate compartments. A prior examination initially proposed that the form of GPB might differ based on the level of environmental concerns [26]. Consumer fears can be influenced by their environmental concerns, environmental expertise, and consumption environment, which includes factors such as product advantages, commercial promotion, and financial subsidies [46]. Our paper aims to examine the progression of green purchasing behavior (GPB), building upon the findings and suggestions put out by [23,26]. Unconditional GPB, as used in this paper, reflects buying green items without any conditions. This suggests that customers' strong environmental concern outweighs their reservations about green benefits, such as high price and low quality. Conditional green product buying (GPB) refers to the phenomenon where consumers who have lower levels of environmental concerns

are motivated to purchase green products based on their explicit advantages, such as price, quality, functionality, and convenience. Accidental GPB refers to the situation where consumers purchase green items without intending to do so for environmental reasons. Instead, they are motivated by economic incentives and the unmatched benefits offered by these products, such as cost-effectiveness, cost-efficiency, and outstanding quality.

The primary driver of unconditional GPB is individuals' profound concern and altruistic commitment to protect the environment [47]. Additionally, the attainment of egoistic goals might further enhance this behavior [19]. The notion of a "moral person" is impractical and illogical, as it oversimplifies the intricate motivations and reasoning of an individual [39]. Individuals have a tendency to balance altruistic and egoistic appeals when the consumption scenario and other factors undergo changes [48]. This results in a trade-off and synergy of the advantages linked to environmentally friendly products [26], leading to a shift in customer behaviors towards conditional GPB. The customer's GPB can be categorized into two types: unconditional and conditional. Unconditional GPB refers to instances where consumers unintentionally engage in green consumption due to a lack of knowledge and skills in this area. On the other hand, conditional GPB occurs when consumers are motivated by attractive economic incentives to engage in green consumption.

2.3. Altruistic and Egoistic Motivation

Within the framework of green consumerism, customers' behavioral motivations can be categorized into two types: altruistic appeals and egoistic appeals [49]. Achieving a balance between these two competing appeals is seen as an important strategy for consistently promoting prosocial or pro-environmental behavior [19,39]. Individuals driven by altruistic motives prioritize the well-being and future prospects of society and are even willing to make personal sacrifices for the greater good [19]. By contrast, customers with an egoistic focus prioritize their own self-interests and place significant value on personal growth and self-improvement [50]. VBN theory posits that altruistic motivation is influenced by altruistic and biosphere values [20]. Conversely, egoistic motivation is determined by egoistic values, which are inversely associated with environmentalism. Prior research distinguished between altruistic value, which benefits society, and the biosphere factor, which improves environmental well-being [51]. In addition, a previous exploration categorized altruistic factors into two orientations: social value focus and biosphere value focus [52]. The researchers discovered that altruistic ideals had a positive impact on environmental concerns, affirming their beneficial function in encouraging pro-environmental behavior, while disregarding egoistic appeals. Various research studies have examined and distinguished between altruistic and egoistic appeals. Previous research defined altruistic appeals as situations where an individual feels empathy for others who are in need, with the primary objective of improving the happiness and well-being of others [53]. Conversely, those who employ egoistic appeals engage in helping behaviors with the intention of obtaining social benefits or evading public disapproval to fulfil their personal objectives.

To address this research gap, our study developed an integrated model to explore the main factors affecting GPB. The conceptual framework and hypotheses' development are discussed in the next section. We utilized the S-O-R model for the role of media channels and interpersonal channels in influencing behavioral motivations and GPB.

3. Research Model and Hypotheses' Development

Social influence (SI) encompasses the factors' occurrence where an individual's views, attitude, and actions are altered due to external forces [54]. Several models and frameworks have been suggested to elucidate and justify the process by which social influence arises and manifests as actions. A prior study posited that SI encompasses three distinct social aspects [54]. Our paper examined the effects of the media, peers, and family. A prior examination introduced the Goal-Framing Theory, which posits that environmental behavior is guided by three types of goal frames [19]. GGF represents an individual's

perception of maximizing value and benefits [19,39]. On the other hand, HGF pertains to an individual's emotions in a particular scenario, with a focus on pursuing pleasure and excitement. NGF enhances individuals' cognitive awareness and prompts them to engage in suitable actions, such as adopting pro-environmental behaviors [54]. The Goal-Framing Theory posits that individuals' behaviors are influenced by a combination of motivations that collectively shape their ideas, sensitivities, and actions within a certain context [39]. This theory employs an inclusive framework that considers both egoistic and altruistic appeals to elucidate behavior [39]. In this paper, egoistic and altruistic motivation function as the "mediated process", specifically within the body. Furthermore, this study postulated that the COVID-19 pandemic would influence the causal linkages between the variables. Figure 1 displays the conceptual framework.

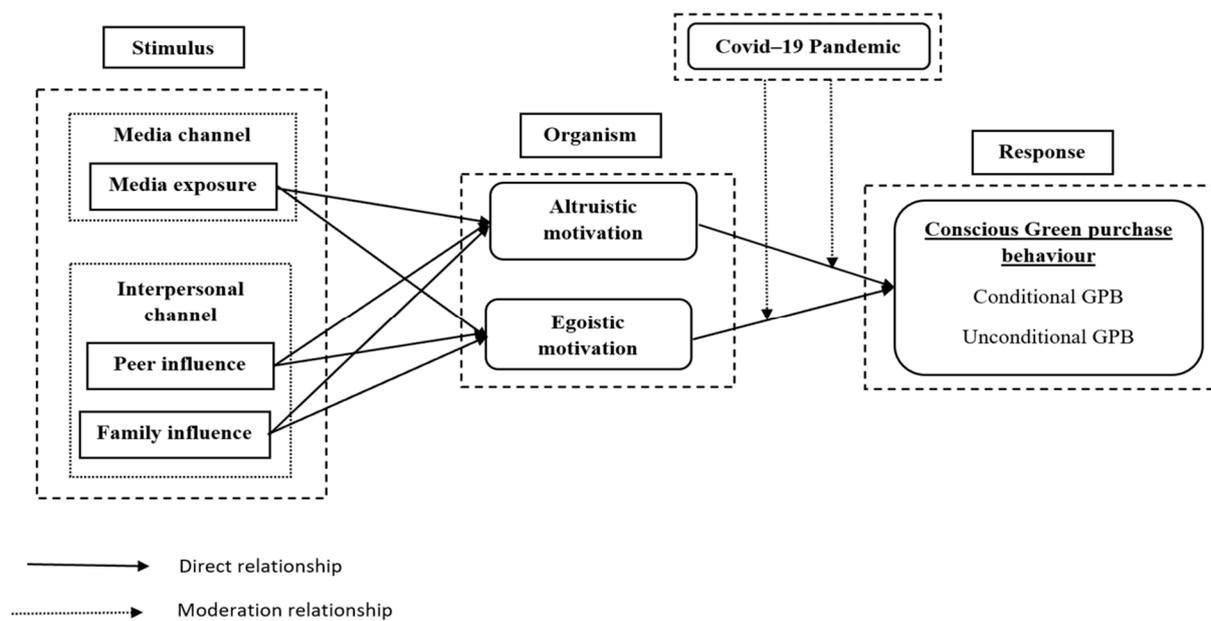


Figure 1. Research model.

3.1. External Stimuli and Altruistic Motivation

Media exposure encompasses various media and commercials that seek to stimulate sustainable consciousness and encourage sustainable engagement by disseminating crucial environmental information [39]. Research has demonstrated that the media has an important impact in shaping public knowledge and support for environmentally friendly products [55]. A previous study determined that the influence and molding capacity of media can have a substantial impact on a customer's cognitive processes and attitudes [56]. A previous examination asserts that media exposure has the potential to significantly impact company reputation because of its influential ability to persuade in contemporary society [57]. The media has effectively directed individuals' attention towards environmental issues by establishing precise agendas [39]. Additionally, it has played a significant role in stimulating public ecological consciousness [58]. Media influence has the potential to enhance environmental awareness and stimulate the desire to engage in green purchasing [47]. In a similar vein, prior research discovered that media influence can have a substantial impact on general prosocial behavior (GPB) via stimulating altruistic impulses, specifically normative aims [39]. Media exposure is likely to enhance the development of environmental values, influence ecological awareness, assign responsibility, and thus reinforce altruistic impulses [39,52]. Given the discourse, this paper posits the following hypothesis:

H1. Media exposure has a significant impact on altruistic motivation.

In addition to media platforms, interpersonal interactions exert a significant influence on motivations and behavior related to green consumption [39,52]. According to a prior exploration, peers and family are the primary influences among interpersonal factors [55]. Peer influence encompasses the effect of peers who have similar cultural origins, social practices, and values on an individual's environmental behavior [17]. On the other hand, family influence pertains to the impact of an individual's family members on their green purchasing decisions [55]. According to a prior examination, friends and parents play a significant role in shaping attitudes and actions, and this impact can also extend to promoting green conservation [52]. Based on a previous study, individuals often review their own beliefs and skills by comparing themselves to others, utilizing objective facts and criteria as a basis for self-evaluation [59]. Social comparison can motivate individuals to behave in accordance with others and result in a tendency towards similarity [52]. A prior examination has contended that social groups have a significant effect on shaping behavioral intention [60]. Prior research found that there is a strong correlation between the frequency of communication between parents and children and the extent of generational parallels in altruistic consumption attitudes, specifically in sustainable consumption [61]. Moreover, extant examinations determined that the effect of family and peers stimulates altruistic impulses by focusing attention on environmental challenges, hence positively impacting sustainable consumption [39,52]. These reasons lead to the formulation of the following hypotheses:

H2. *Peer influence has a significant impact on altruistic motivation.*

H3. *Family influence has a significant impact on altruistic motivation.*

3.2. External Stimuli and Egoistic Motivation

The media can also play a role in spreading crucial information about environmental hazards and disasters, highlighting the value of eco-friendly products [48]. Consumers are inclined to select environmentally friendly items in order to reduce ecological hazards [50], hence enhancing egoistic motivation. A prior study asserted that green products offer environmental advantages that stimulate customer purchase motivation, namely egoistic drive [62]. A previous investigation proposed that the media's use of the "fear appeal" strategy can stimulate ecological neuroticism, leading to emotional characteristics such as anxiety, self-consciousness, impulsiveness, and vulnerability [52], ultimately increasing egoistic motivation [27]. Given the presented reasoning, this study suggests that

H4. *Media exposure has a significant impact on egoistic motivation.*

Family and peers have crucial roles as influential social entities. A substantial volume of sustainable behaviors data is produced via these platforms [48]. Common views, tastes, and interests strengthen peer endorsement and reinforce the reliability and effectiveness of information [17]. The tight interactions among family members generally prioritize environmental information that promotes an individual's psychosomatic health [39], which in turn enhances egoistic drive. A prior examination indicates that parents and peers have a substantial effect on a person's cognitive processes and actions by means of expressing social norms and exhibiting exemplary conduct [52]. A previous study revealed that there is a correlation between neighborhood energy conservation and an individual's motivation to save energy [63]. Furthermore, an examination determined that the impact of family and peers on cognition and motivation across generations is not limited by time or cultural boundaries [64]. Thus, the following hypotheses are put forward:

H5. *Peer influence has a significant impact on egoistic motivation.*

H6. *Family influence has a significant impact on egoistic motivation.*

3.3. Altruistic Motivation, Egoistic Motivation, and Conscious GPB

Buyers may activate their personal norms when they become conscious of their environmental obligations or recognize the negative outcomes of their actions [39,52,65]. A prior study determined that normative information has a significant impact on motivating individuals to engage in pro-environmental conduct [66]. A previous exploration revealed that there is a positive link among perceived green responsibility and the intensity of customers' environmental concern [12]. A prior study contends that environmental concerns have a favorable impact on consumers' pro-environmental behavior [67]. The Norm-Activation Theory [17] suggests that altruistic activities stem from people's values and their norms. It argues that a sense of moral duty, along with the knowledge of outcomes and a sense of responsibility, can inspire individuals to undertake green pro-environmental behaviors [39,66]. The Goal-Framing Theory [19] posits that normative goal frames, which are driven by altruistic incentives, play a central role in guiding environmental behavior. The explanation aligns with a previous study, which discovered that normative goal frames exerted the greatest influence on urban inhabitants' adoption of environmentally friendly behaviors [66]. A prior study revealed a significant impact of environmental awareness, environmental concerns, and altruistic motivations on the intentions to make environmentally friendly purchases [68]. Furthermore, a prior exploration found that altruistic incentives stemming from one's environmental self-identity significantly enhance individuals' engagement in pro-environmental actions [69]. Thus, we propose the following hypothesis:

H7. *Altruistic motivation has a positive unconditional GPB (H7a) and conditional GPB (H7b).*

The influence of emotional appeal on pro-environmental behavior is significant [39]. Prior research has investigated the influence of mood and emotional experiences on environmental behavior [19]. A previous examination revealed that positive emotional appeals are successful in encouraging consumers to buy environmentally friendly products [52]. Prior research indicated that positive feelings like appreciation and pride play a significant role in motivating consumers to choose green products [39]. Egoistic reasons pertain to personal concerns regarding health consciousness and the environmental friendliness of the commodities being sold [50]. When confronted with ecological issues, individuals have a heightened sense of worry for their own and their family's physical condition, standard of living, and overall welfare. Individuals actively engage in health-related decision making, particularly when shopping, to minimize potential environmental risks [70]. A previous study posited that egoistic incentives, driven by personal reputation concerns, have a favorable impact on GPB [71]. A prior study found that egoistic goals had a good impact on reducing consumption [39,52]. Research conducted by a prior study has revealed that self-centered motivations can enhance consumers' inclination towards organic food [52]. Several research studies indicate that health consciousness is closely linked to a desire for environmentally friendly products and encourages mindful green purchasing behavior. Given the presented discussion, the following hypothesis is put forward:

H8. *Egoistic motivation has a positive impact on unconditional GPB (H8a) and conditional GPB (H8b).*

3.4. The Role of COVID-19 Pandemic

Prior research revealed that implementing social restrictions during the COVID-19 pandemic led to a notable enhancement in food purchasing habits and a positive shift in behavior towards reducing food waste [72]. This was achieved through the adoption of strategies such as the better management of resources, improved storage practices, and the increased consumption of leftovers. Nevertheless, the authors suggest that customers' actions to reduce food waste may be mostly driven by the socioeconomic circumstances resulting from the COVID-19 lockdown, such as limited food availability, restricted mobil-

ity, and financial loss, rather than by a genuine environmental consciousness. A previous exploration indicated that the COVID-19 blockage has had significant impacts on both social and economic aspects [73]. However, it has also yielded favorable consequences on the natural environment. However, as stated by the authors, data from NASA and ESA suggest that pollution levels in certain COVID-19 hotspots, including Wuhan, UK, and the USA, have decreased by as much as 30% [74]. A previous study emphasizes that the COVID-19 pandemic led to a decline in the levels of NO₂ in the atmosphere [75]. Similarly, a prior exploration found a critical reduction in NO₂ levels in prominent Indian states [76]. A prior exploration carried out in Italy, which had strict restrictions on people's movement [75], found that after implementing partial and total lockdown measures, there was a substantial decrease in the concentration of pollutants, particularly sulfur dioxide (SO₂), primarily caused by reduced vehicle traffic. Prior research found that there was a significant decrease in the concentration of NO₂, a minor decrease in CO, and a moderate decrease in the optical density of aerosols in the primary areas affected by the COVID-19 outbreak between February and March 2020 [77]. These reductions can also be attributed to widespread restrictions. A previous study reveals a strong association between environmental pollutants, namely PM₁₀, PM_{2.5}, SO₂, NO₂, and CO, and the COVID-19 outbreak in California. This finding underscores the importance of urging regulators to implement alterations in environmental policies [78]. By controlling the origin of pollution, we can mitigate the detrimental impact of environmental pollutants. A prior examination suggests that several valuable insights can be applied to future pandemics as a guide; however, an immediate sustainable model is required [79]. The implementation of quarantine policies has resulted in a surge in consumers' preference for online shopping with home delivery. As a result, there has been an increase in the level of organic waste generated by homes. Additionally, the packaging of food purchased online has contributed to an increase in inorganic waste [80].

Green consumption has been the focus of numerous scientific investigations in this particular setting. A prior study found that the consistent growth in sustainable consumer behavior motivates companies to enhance their endeavors in achieving social and ecological sustainability [81]. This is achieved through the development of sustainability offerings, such as the utilization of recycled materials, implementation of circular business models, and the creation of product ranges with reduced fashion cycles. A prior study argues that effective and environmentally friendly consumption practices need a proper disposal, separation, and recycling of household solid waste, which is crucial for the local community [82]. A previous exploration argues that the utilization of inputs and natural resources in the high-tech industry, together with economic expansion, has a negative impact on environmental quality [83]. However, the advancement of financial resources and the utilization of renewable resources have a positive impact on green consumption. A prior study emphasizes the pressing need to increase food production using few water resources, while also enhancing water utilization efficiency [84]. This is particularly crucial in desert and semi-arid regions with delicate ecosystems and acute water scarcity. A prior study argues that wood consumption has significantly risen nowadays due to environmental forest management practices [85]. These approaches strive to induce changes in the systems and worldwide allocation of shared resources, guaranteeing that levels of demand are in harmony with sustainable supply capacity. In the middle of the global COVID-19 pandemic, sustainable development is seen as a vital concept and remedy for creating a positive and prosperous future for human communities [86]. Global policies must prioritize green consumption [87] in order to ensure the sustainable preservation of natural resources and meet the demands of future generations [88]. Thus, we propose the following hypothesis:

H9. *The COVID-19 pandemic moderates the relationships between altruistic motivation, egoistic motivation, unconditional GPB, and conditional GPB.*

4. Method

4.1. Sampling and Data Collection

Although the government of KSA has a clear strategy, green investment in KSA is still in its early stages [89]. The Crown Prince contended that these environmentally friendly efforts have created new economic prospects in the green Kingdom of Saudi Arabia, necessitating cooperation from all parties involved [90]. Green investment is crucial to enable the effective execution and success of these national programs and to further the national agenda [91]. Therefore, it is necessary to comprehend the factors that influence customer green consumption behavior in Saudi Arabia in order to contribute to the realization of the Saudi Vision 2030.

After obtaining ethical approval from the “University’s human ethics review committee”, a total of 2000 email addresses of potential participants were acquired from a trustworthy market list organization in Saudi Arabia. Additionally, this company boasts a database of over 1.3 million registered consumers in Saudi Arabia. The initial e-mails were sent to a sample of 2000 respondents, picked randomly using probability sampling methods. The e-mail addresses of the consumers were chosen randomly by a developed sampling system. The poll was conducted anonymously and limited to customers who were 18 years of age or older. At the start of the questionnaire, two filtering questions were included to identify qualifying respondents. These questions inquire whether the respondent purchased a green product in the past year and what their nationality is. Respondents who provided affirmative responses were granted the ability to fully access and submit the survey. The email invitation included this study’s objective, the expected time required to complete the survey, and the URL link to access the questionnaire for the current study. In order to mitigate the influence of social desirability bias and enhance the accuracy of replies [48], supplementary items were incorporated into the questionnaire to identify and exclude invalid samples. In addition to inquiring about their city of residence, the participants were requested to specify the green items they had typically bought over the last six months, along with an estimation of their consumption [21]. The data collection period spanned around five weeks from August to September 2023. A total of 907 participants were contacted, and 23 individuals with incomplete data were eliminated, resulting in a response rate of 44.2%. Hence, a total of 884 responses were deemed suitable for subsequent examination. The sample exceeded the initial assumption of having more than 200 to 400 genuine instances [92,93].

Out of the 884 participants in the present study, 477 were male (54.0%) and 407 were female (46.0%). Table 1 shows that 51.0% of the respondents were between the ages of 30 and 39, 49.0% had a bachelor’s degree, and 31.0% had purchased green items 3–6 times in the prior year.

4.2. Measures

The variables in this study were operationalized using pre-established scales and items obtained from prior research. Table 2 shows the main study variables and their measures. To measure conditional green purchasing behavior, four items were adapted from the scale designed by prior research [39]. We used four items adopted from a previous study to measure unconditional green purchasing behavior [39]. Altruistic motivation was measured using four items adopted from previous research [67]. Egoistic motivation was assessed using five items adopted from a prior examination [52]. Media exposure was evaluated by utilizing four items adopted from a previous exploration [39]. Peer influence was assessed using four items adopted from a previous study [55]. Family influence was evaluated utilizing three items employed from previous research [55]. Finally, the COVID-19 pandemic was evaluated by employing five items adopted from previous research [74]. A pilot test was carried out using 50 consumers to assess the face and content validity of our questionnaire.

Table 1. Sample profile.

Demographics	Category	Percentage %
Gender	Male	54
	Female	46
Marital status	Married	39
	Unmarried	61
Education	High school and below	21
	College degree	36
	Bachelor's degree	39
	Masters' or above	4
Monthly income	2000 and below	21
	2001–4000	27
	4001–6000	12
	6001–8000	19
	8001–10,000	10
	Over 1000	11
Age	Under 20	7
	20–30	28
	31–40	22
	41–50	21
	51–60	17
	61 and above	5

4.3. Common Method Bias

Given that all the constructs were acquired by utilizing identical methodologies, there was a possibility of encountering a “common method bias” (CMB), which could lead to falsely exaggerated associations [94]. To address this CMB, various processing control measures were employed, such as ensuring respondent anonymity, concealing research objectives, and counterbalancing item sequences [39]. We additionally performed Harman’s test to analyze the potential CMB. The results indicate that the initial component accounted for approximately 37% of the overall variance, implying that CMB posed no significant risk. Moreover, in accordance with the methodology proposed by prior research [95], we implemented the marker approach. We introduced an independent factor to control for associations that were caused by CMB. In addition, we extracted the significant association values, as recommended by a previous study [95]. The corrected and unadjusted correlations exhibit negligible disparities. Therefore, drawing from these statistical data, we deduce that CMB does not significantly impact our results.

4.4. Causality Concern

The “nonlinear bivariate causality direction ratio” (NLBCDR) was computed according to the guidelines provided by previous studies [96]. The NLBCDR quantifies the degree to which the bivariate nonlinear coefficients of association offer evidence in favor of the hypothesized orientations of the causal relationships in the given theoretical paradigm [97]. The observed “NLBCDR” of 0.92 is significantly greater than the threshold value of ≥ 0.7 . Hence, we argue that causality is not a subject of concern. We also provide the values for model fit and quality indices that support this result (referring to average $R^2 = 0.63$; Tenenhaus GoF = 0.79).

4.5. Normality Test

The normality test findings show that the maximum absolute value of the “univariate skewness coefficient” was 1.809, and the maximum absolute value of the “univariate Kurtosis coefficient” was 3.614. The majority of the values were less than 3 [84]. The sample data did not include any data points that deviated significantly from the norm, known as “outliers”. Additionally, the value of the “multivariate CR” was approximately 60. The

results suggest that the data adhere to a multivariate normal distribution and that the maximum likelihood approach employed is robust.

Table 2. Variables' measures.

Variables/Items	Standard Loading	Mean	SD
UGPB: Unconditional green purchasing behavior, AVE = 0.619, CR = 0.947, Cronbach's α = 0.926 "My green purchase habits are affected by my concern for the environment". "I have unconditionally switched non-green products for ecological reasons". "I have avoided buying a product because it had potentially harmful environmental effects". "I intentionally purchase green products as I am concerned about the environment".	0.942	2.340	0.814
CGPB: Conditional green purchasing behavior, AVE = 0.593, CR = 0.929, Cronbach's α = 0.910 "I am willing to buy more green products if the prices are reduced". "I am willing to buy green product only if they are cost effective". "I am willing to buy if green products are energy/fuel efficient". "I am willing to buy if green products are at par in price, quality and functionality with other conventional products".	0.916	2.839	0.791
ALM: Altruistic motivation, AVE = 0.668, CR = 0.960, Cronbach's α = 0.942 "Contributions to community organizations can greatly improve the lives of others". "Many of society's problems result from selfish behavior (e.g., non-green consumption)". "It is my duty to help other people when they are unable to help themselves". "Use of renewable energy is the best way to combat global warming".	0.912	3.026	0.829
EGM: Egoistic motivation, AVE = 0.580, CR = 0.944, Cronbach's α = 0.930 "I'm very conscious about my health and the health of others for whom I shop in the household". "I take responsibility for the state of my health and the health of others for whom I shop in the household". "I'm very involved with my health and the health of others for whom I shop in the household". "I'm very concerned about the amount of harmful ingredients in goods when shopping". "The safety of non-green products nowadays concerns me".	0.899	2.120	0.817
ME: Media exposure, AVE = 0.692, CR = 0.957, Cronbach's α = 0.938 "How often do you come across program/news relate to environmental problems on TV"? "How often do you come across environmental problem messages on advertisements"? "How often do you come across program/news relate to environmental problems on radio"? "How often do you come across environmental problem information on the Internet"?	0.946	2.384	0.795
FAI: Family influence, AVE = 0.730, CR = 0.961, Cronbach's α = 0.939 "I use green products because my family use them or have used them". "I buy green products because my parents buy/have bought". "I use green products because they remind me of my family".	0.896	2.617	0.829
PEI: Peer influence, AVE = 0.526, CR = 0.936, Cronbach's α = 0.910 "Most friends that are important to me care about the environment". "Most friends that are important to me consider the environmental impact of the purchase decisions they make". "Most friends that are important to me buy green products". "Most friends that are important to me think that global warming is a real threat".	0.931	2.673	0.891
COVID-19 Pandemic, AVE = 0.582, CR = 0.909, Cronbach's α = 0.881 "The COVID-19 Pandemic makes me worried about the future life". "The large number of people infected with COVID-19 made me change my social behavior". "The large number of deaths related to COVID-19 has scared me". "I believe that in 2020 an effective vaccine will be found for the treatment of COVID-19". "I believe that COVID-19 Pandemic Prevention Campaigns have reduced the number of infected people".	0.894	2.381	0.799

5. Analysis and Results

In this study, we employed "variance-based structural equation modelling" to examine the hypothesized connections outlined in our conceptual framework. We used "AMOS 23 for the measurement model". The model's measurements are reflective, indicating that the

latent constructs mirror the manifest constructs. We employed a two-step methodology to implement the structural equation modeling technique [98]. The initial step entails conducting tests on the measurement model, while the latter step focuses on examining the structural model. The measuring approach primarily assesses the “construct’s reliability, uni-dimensionality, convergent validity, and discriminant validity”. The second phase involves evaluating the structural model and validating the structural linkages postulated by our hypothesis.

5.1. Measurement Model

The analysis indicated that the model fit indices of the measurement structure were as follows: (χ^2/df (806.127/399.201) = 2.019 ($p < 0.001$), GFI = 0.890, AGFI = 0.863, NFI = 0.917, IFI = 0.953, TLI = 0.951, CFI = 0.953, RMSEA = 0.06, and SRMR = 0.062. The analysis revealed that the measurement structure of the conscious GPB model was favorable, in line with the proposed cut-off criteria.

All the indicators had standardized regression weights of more than 0.5 (ranging from 0.783 to 0.948), and the corresponding t -values were above 2.0. The composite reliability (CR) of each variable ranged from 0.819 to 0.961 (see Table 2). A CR value above 0.60 shows an acceptable internal consistency dependability [84]. Prior research proposed that the optimal standardized regression weight (loading) for each item should exceed 0.7, while a weight over 0.6 is considered satisfactory [84]. Hence, a minimum AVE value of 0.36 is considered satisfactory. The AVE values for each variable ranged from 0.584 to 0.709. The values exceeded 0.5, and all of them were above 0.36 [84]. These findings demonstrated that both the reliability and convergent validity of the data were confirmed.

In order to establish a discriminant validity, prior research proposed a method that involves comparing the AVE and the squared values of a construct’s correlations with other components [99]. A discriminant validity is present when the “average variance extracted” (AVE) exceeds the construct’s correlations with the other components squared. The AVE values, as presented in Table 3, exceeded the determination coefficients, therefore confirming the discriminant validity among the components in this investigation.

Table 3. Correlations.

Constructs	UGPB	CGPB	ALM	EGM	ME	FAI	PEI	COV
UGPB	0.787							
CGPB	0.399	0.770						
ALM	0.430	0.429	0.817					
EGM	0.319	0.581	0.319	0.762				
ME	0.447	0.219	0.335	0.420	0.832			
FAI	0.519	0.538	0.278	0.439	0.506	0.854		
PEI	0.438	0.226	0.526	0.327	0.573	0.439	0.725	
COV	0.217	0.219	0.321	0.228	0.329	0.237	0.510	0.762

5.2. Structural Model

We employed AMOS 23 to identify the causal relationship and test this study’s hypotheses. The fit results indicate that the data conformed well to (χ^2/df (795.813/352.710) = 2.256, GFI = 0.892, AGFI = 0.867, NFI = 0.919, IFI = 0.960, TLI = 0.959, CFI = 0.960, RMSEA = 0.061, and SRMR = 0.064. The findings indicate that media exposure had a favorable influence on both altruistic ($\beta = 0.348$, $p < 0.001$) and egoistic motives ($\beta = 0.204$, $p < 0.001$). However, family influence did not have a significant impact on either altruistic ($\beta = 0.067$, $p > 0.1$) or egoistic motivations ($\beta = 0.008$, $p > 0.1$). Thus, H1 and H2 were supported, while H3 and H4 were not supported. This study found that peer influence had a significant and favorable impact on both altruistic ($\beta = 0.719$, $p < 0.001$) and egoistic motivations ($\beta = 0.762$, $p < 0.001$). Thus, H5 and H6 were supported. After accounting for the effects of three independent factors, it was discovered that altruistic motivations ($\beta = 0.637$, $p < 0.001$) and egoistic motivations ($\beta = 0.549$, $p < 0.001$) had a favorable impact on unconditional GPB.

Similarly, the individual's conditional GPB was positively influenced by both altruistic ($\beta = 0.316, p < 0.001$) and egoistic incentives ($\beta = 0.351, p < 0.001$). Therefore, H7 and H8 were supported.

5.2.1. Mediation Effect Testing

The mediation test technique suggested by prior research [100] and the Bootstrap approach advocated by previous studies [101,102] were subsequently employed to ascertain the potential mediation impact. Several scholars have proposed that tests can detect a statistical mediators' impact, even if the overall impact is insignificant. This study employed resampling techniques on a sample size of 5000 using AMOS 23, with a 95% CI. Table 4 demonstrates that both altruistic motivation and egoistic motivation play a substantial role in mediating the connections between media exposure and peer influence with unconditional GPB. However, there is no significant mediation observed among family influence and unconditional GPB. Likewise, the presence of the two motivation types played a significant role in mediating the connections among conditional GPB and both media exposure and peer influence, but not family influence. The findings indicate that family influence has an insignificant impact in shaping GPB.

Table 4. Mediating effects test.

Hypotheses	Product of Coefficient			Bootstrap (5000 Bootstrap Samples)			
				Bias-Corrected 95% CI		Percentile 95% CI	
	Point Estimation	Boot SE	Z Value	Lower	Upper	Lower	Upper
Indirect effects							
ME→Mediator→UGPB	0.206	0.043	4.209	0.092	0.315	0.031	0.303
FAI→Mediator→UGPB	0.049	0.035	0.923	0.023	0.218	0.038	0.218
PEI→Mediator→UGPB	0.430	0.023	5.230	0.012	0.038	0.043	0.082
ME→Mediator→CGPB	0.619	0.046	8.129	0.047	0.120	0.019	0.128
FAI→Mediator→CGPB	0.037	0.019	4.278	0.015	0.217	0.035	0.327
PEI→Mediator→CGPB	0.021	0.002	3.120	0.026	0.092	0.012	0.461
Direct effects							
ME→UGPB	0.004	0.021	2.120	0.003	0.029	0.002	0.038
FAI→UGPB	0.001	0.016	0.628	0.029	0.017	0.001	0.017
PEI→UGPB	0.027	0.028	3.120	0.002	0.076	0.009	0.083
ME→CGPB	0.008	0.026	4.029	0.003	0.014	0.036	0.046
FAI→CGPB	0.002	0.019	0.882	0.047	0.089	0.001	0.028
PEI→CGPB	0.006	0.024	2.195	0.001	0.036	0.007	0.046

5.2.2. Moderating Effect Test

This study investigated the moderating impacts of COVID-19 by the utilization of MGA [103]. To explore the moderating role, we split the entire sample into two subgroups: the upper subgroup consisting of the last 73% and the lower subgroup consisting of the top 27% [104]. It is usual practice to employ this 27% rule in item analysis. A model with all constraints in place was created, and the chi-square variances among the model with constraints and the model without constraints was employed to assess the similarity between the two subgroups. The results in Table 5 demonstrate a substantial variation in $\Delta\chi^2$ ($\chi^2 = 42.192, df = 730, p < 0.001$), showing the presence of significant moderating effects of COVID-19. Specifically, the results reveal that the connections between altruistic motivation, egoistic motivation, unconditional GPB, and conditional GPB were significantly impacted by COVID-19. The route coefficients in the top grouping were higher than those in

the lower subgroup. This result aligns with the hypothesis that COVID-19 has a beneficial moderating effect in the research model. Therefore, H9 was verified.

Table 5. Moderating effects test.

Paths	Lower COV	Upper COV	Model Comparison		
	Standardized Coefficients		Default Model CMIN = 1693.4284, df = 709		
	β Lower	β Upper	Restrained Model (df = 710)	Δ CMIN	Results
ALM→UGPB	0.508 ***	0.631 ***	1693.205	8.210 ***	L \neq U
ALM→CGPB	0.319 ***	0.432 ***	1693.207	6.327 ***	L \neq U
EGM→UGPB	0.299 ***	0.318 ***	1693.328	5.029 ***	L \neq U
EGM→CGPB	0.407 **	0.510 ***	1693.119	10.325 ***	L \neq U
Overall test			1698.325	24.129 ***	L \neq U

Note: L = lower NEAR, U = upper. ** $p < 0.01$. *** $p < 0.001$.

6. Discussion and Conclusions

6.1. Key Findings

Our paper is one of the first examinations to investigate the way by which external stimuli impact customer GPB via appeals that are both altruistic and egoistic. Specifically, it focuses on examining the effects of customers rationality (egoistic variables) on GPB. Furthermore, the possibility of mitigating impacts of the COVID-19 pandemic was also examined. Consistent with prior research [12,52], the findings indicate that media and peers play significant roles in shaping a customer's altruistic and egoistic motivation. The potency of peer influence in activating incentives is considerably greater than that of media, although family effects do not elicit dual drives. This indicates that customers develop an emotional connection and a sense of trust in their peers due to shared interests, hobbies, and values [25], which ultimately has the most significant influence on GPB. The significant impact of peers on GPB can also be attributed to group pressure [26,39]. This discovery enhances the research conducted by a prior study [55] and expands our comprehension of the actual function of three social categories in fostering GPB.

Surprisingly, family members do not have a major impact on conscious GPB through multiple motives. This result is contrary to the expectations of environmentalists [55,61]. This surprising outcome can be accounted for by the findings of prior research [39], which revealed that individuals tend to display an idealized version of themselves in their public environmental behavior, while their private environmental behavior tends to reflect their true selves in intimate relationships, such as with family members [50]. Hence, the primary obstacle for environmental campaigners lies in reinvigorating familial influence to foster conscientious environmental behavior. Both altruistic and egoistic variables were discovered to have a favorable correlation with GPB, and these dual motivations have a comparable impact. This discovery provides evidence for the notion that altruistic drive is the fundamental driving force of conscious GPB [22,52]. The findings also indicate that egoistic motive does not consistently discourage green consumption, as it is accompanied by favorable environmental emotional reactions [50,95]. This implies that individuals who are worried about the potential harm to the environment and its impact on themselves and their families will be directed towards GPB as suggested by a prior study, and this impact is similar to the altruistic variable [12,39].

Consistent with expectations, the findings demonstrate the widespread presence of both unconditional and conditional GPB in everyday life, providing broad support for the research conducted in a prior examination [28]. Extant examinations revealed a significant association among environmental concern and people's sensitivity to environmental issues [39]. This increased sensitivity leads to a greater likelihood of making unconditional green purchases [17]. Significantly, the findings indicate that altruistic and egoistic motivations play a mediating role in the development of conscious general pro-environmental

behavior. Furthermore, the empirical results of this study indicate that there is no substantial disparity in the channels of mediation. This suggests that both altruistic and egoistic appeals play an essential role in promoting conscious green purchasing and are equally relevant [13,19]. This corroborates the findings of previous studies [39,52], enhancing our comprehension of GPB and the associated predicting approaches.

Lastly, the most intriguing discovery is that COVID-19 has a substantial impact on GPB. The results indicated that COVID-19 amplified the influence of peers on both altruistic and egoistic motives, in addition to the pathway of altruistic factors on unconditional general pro-social behavior. The findings presented in this research enhance our comprehension of the positive effects resulting from green disasters on GPB and build upon the existing experiences initially described in prior research [28].

6.2. Theoretical Implication

This research's findings make significant theoretical implications. Firstly, our examination broadens the scope of GPB by encompassing both conscious and unconscious aspects. This study expands the domain of GPB in the extant research and enhances our comprehension of the intricate process by which GPB is generated. This knowledge can be utilized to reduce the disparity between attitudes and behaviors. This research identifies different types of green purchases and explores the variables that contribute to the discrepancy between motivations and actual purchase behavior [23,26].

Furthermore, this research offers a more profound understanding of the efficacy of media and personal platforms. The findings can contribute to the comprehension of how to enhance GPB and the associated strategies, offering a theoretical foundation for improving sustainable behavior paradigms and initiatives. Our research demonstrates the limitations of the family effect in promoting environmental behavior and emphasizes the significance of social categories in encouraging green consumption. This examination presents the initial thorough evaluation of the sustainable aspect of self-centered motivations, demonstrating that a harmonious equilibrium can be attained between personal and collective reasons in environmentally friendly consumption. In summary, this exploration contributes to our comprehension of attaining sustainable green consumption by offering theoretical direction on using social factors to reinforce sustainable education.

There is a strong consensus among environmental, corporate, and academic communities that in order to achieve sustainable development and promote ecological balance, it is necessary to increase the rate of green consumption [39,52]. This study presents the initial thorough evaluation of the environmental aspect of self-centered motivation, demonstrating that a harmonious equilibrium can be attained between personal and collective rationalities in environmentally friendly consumption.

Furthermore, this research represents an early endeavor to comprehensively investigate the moderating impacts of the COVID-19 pandemic on the formation of conscious GPB. This paper's findings suggest many theoretical avenues, including utilizing public health situations as opportunities for sustainable education and directing the public in contemplating ecological matters. Therefore, these findings have important ramifications for comprehending how to expedite the transition towards an ecological way of life and foster a happy cohabitation with the environment.

6.3. Managerial Implication

The empirical findings of this research offer multiple recommendations for individuals involved in environmentally conscious practices. Initially, governments and environmental organizations commonly promote green consumption by arguing for the use of collective logic and limiting individual rationality. Nevertheless, our findings indicate that egoistic appeals, which appeal to individual rationality, might promote environmentally friendly purchasing when individuals' worries about their peers and relatives' health are integrated into egoistic factors. Therefore, it is advisable for environmental activists and marketers to emphasize the practical benefits of eco-friendly products, providing customers with

guidance on the ecological significance and the overall necessity of sustainable behaviors. Utilizing experience behavior tactics can enhance the perceived advantages of environmentally friendly items. Furthermore, considering that peers and media have been determined to exert a substantial influence on GPB, it is advisable for green practitioners to explore the utilization of the social media effect to endorse GPB. In addition, they might enhance their visibility on various social media networks such as “WeChat, Youtube, and Microblog”. This would facilitate the connection between consumers who are new to sustainable consumption and those who already possess a deep understanding of sustainable consumption. Another approach could involve establishing green consumption ambassadors, leveraging influential individuals as intermediaries to their peers, to foster green consumption and advocate for green lifestyles. Managers should address the difference among collective and individual factors and take into account both altruistic and egoistic factors of individuals to promote sustainable consumption. This will help convert dual motivations into actual conscious green purchasing behaviors and narrow the gap between attitudes and behaviors.

Second, it is recommended that individuals who are new to environmentally friendly practices cease separating selfless appeals from self-centered appeals. Instead, they should focus on enhancing the alignment between these two types of appeals, positioning them in the highly advantageous “golden quadrant” [70] and capitalizing on their combined impact. This strategy will enable them to gain an advantage in terms of environmental standards and develop a strong competitive advantage in the environmentally conscious market. In addition, practitioners in the field of sustainability must address the specialization and coordination of dual motivations. These motivations arise from various “pain points” associated with GPB. Specifically, altruistic motivation should be directed towards guiding the unconditional GPB, while egoistic factors should be focused on predicting the conditional GPB. This will enhance the synergy between dual objectives, leading to a more effective promotion of the dissemination and acceptance of green products.

Third, consumers who are new to environmentally friendly practices could assist in directing people towards various categories of eco-friendly purchases based on the multifaceted conscious GPB identified in this exploration. It is important to implement suitable and efficient actions that align with the underlying principles of both types of environmentally conscious buying. To promote unconditional green purchases, marketers should enhance their capacity to effectively communicate the functional and symbolic benefits of green products. Environmentally conscious individuals, such as “environmental ambassadors and environmental pioneers”, should be the ones making green purchases. Additionally, it is important to promote the sustainable values of green consumption to convince people of the effectiveness of environmentally friendly behaviors [101]. When it comes to making green purchases based on certain conditions, decision-makers should focus on enhancing infrastructure and offering appropriate incentives to encourage product innovation in relation to environmentally friendly consumption. Implementing these steps will promote the ecological significance of environmentally friendly products and emphasize the crucial need for a balanced and peaceful relationship between humans and the natural world.

Managers have the option to establish green consumption ambassadors, who can serve as intermediaries to peers, use influential figures to stimulate green consumption, and advocate for sustainable lifestyles. These tactics can be employed to steer a consumer’s instinctive inclination to mimic the influencer towards a more environmentally conscious purchasing behavior. In order to promote the sale of environmentally friendly items, it is imperative to ensure that the packaging standards for these products are in line with those of the conventional alternatives. In summary, this work contributes to our comprehension of attaining sustainable green consumption by offering theoretical direction on using social forces to reinforce environmental education.

Finally, the findings of this research also indicate that the COVID-19 pandemic has had a beneficial influence on the production of aware GPB. This finding provides evidence for the notion that pleasant emotions prompt individuals to prioritize immediate survival

and choose for short-term strategies, potentially conflicting with the principles of green consumption and environmentalism. To minimize the “reversion effect” and prevent the deflation of individuals’ conscious GPB, it is important to prevent excessive positive affective reactions. Instead, it is advisable to encourage healthy emotional responses towards the environment to increase the attractiveness of environmental conservation efforts.

7. Limitations and Future Research Directions

This research has some drawbacks. Given that this examination employed a cross-sectional research design, the establishment of causal relationships among the constructs would necessitate additional investigation through longitudinal exploration. Other controllable constructs can be explored in future examinations, considering the ongoing difficulties presented by the COVID-19 pandemic. Individuals’ emotional responses to the environment may also undergo alterations, and the phenomenon known as the “Rebound Effect” warrants additional examination and consideration in future research. Furthermore, given that the participants were only from a specific region in Saudi Arabia, we might not be able to generalize the outcomes to other geographical areas. To enhance the robustness and investigate potential cross-cultural variations in the creation of GPB, future research could involve conducting surveys across multiple nations. Finally, this examination has made progress in acquiring authentic GPB data, although there is room for further enhancements in future exploration. Future studies can identify genuine environmentally conscious customers by observing their actual purchasing patterns.

Author Contributions: Methodology, G.A.; Software, G.A.; Validation, G.A.; Formal Analysis, G.A.; Investigation, O.A.A.; Resources, O.A.A.; Writing—Original Draft, O.A.A.; Writing—Review and Editing, G.A.; Project Administration, G.A.; Funding Acquisition, O.A.A. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Deanship of Scientific Research at Najran University for funding this work under the Research Priorities and Najran Research Funding Program, Grant Code (NU/NRP/SEHRC/12/1).

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of the Deanship of Scientific Research (Grant: NU/NRP/SEHRC/12/1, date of approval: 19 August 2023).

Informed Consent Statement: All subjects gave their informed consent for inclusion before they participated in this study. This study was conducted in accordance with the declaration of the authors’ universities, and the protocol was approved by the Ethics Committee.

Data Availability Statement: Data will be available upon request.

Conflicts of Interest: The authors declare no conflicts of interest.

References

- Alotaibi, A.; Abbas, A. Islamic religiosity and green purchase intention: A perspective of food selection in millennials. *J. Islam. Mark.* **2023**, *14*, 2323–2342. [[CrossRef](#)]
- Babutsidze, Z.; Chai, A. Look at me saving the planet! The imitation of visible green behaviour and its impact on the climate actionvalue gap. *Ecol. Econ.* **2018**, *146*, 290–303. [[CrossRef](#)]
- Pătărlăgeanu, S.R.; Dinu, M.; Constantin, M. Bibliometric analysis of the field of green public procurement. *Amfiteatru Econ.* **2020**, *22*, 71–81. [[CrossRef](#)]
- United Nations. *Report of the World Commission on Environment and Development: Our Common Future*; United Nations: New York, NY, USA, 1987.
- United Nations. *Transforming Our World: The 2030 Agenda for Sustainable Development A/RES/70/1*; United Nations: New York, NY, USA, 2015.
- Barbier, E.B.; Burgess, J.C. The sustainable development goals and the systems approach to sustainability. *Economics* **2017**, *11*, 20170028. [[CrossRef](#)]
- Fonseca, L.; Carvalho, F. The Reporting of SDGs by Quality, Environmental, and Occupational Health and Safety-Certified Organizations. *Sustainability* **2019**, *11*, 5797. [[CrossRef](#)]

8. Van Noordwijk, M.; Duguma, L.A.; Dewi, S.; Leimona, B.; Catacutan, D.C.; Lusiana, B.; Öborn, I.; Hairiah, K.; Minang, P.A. SDG synergy between agriculture and forestry in the food, energy, water and income nexus: Reinventing agroforestry? *Curr. Opin. Environ. Sustain.* **2018**, *34*, 33–42. [[CrossRef](#)]
9. Popescu, M.-F. Is Circular Economy Going to Reduce Waste and Create Jobs in the European Union? In Proceedings of the 38th International Scientific Conference on Economic and Social Development, Rabat, Morocco, 21–22 March 2019; pp. 398–406.
10. Dinu, M.; Pătărlăgeanu, S.R.; Petrariu, R.; Constantin, M.; Potcovaru, A.-M. Empowering Sustainable Consumer Behavior in the EU by Consolidating the Roles of Waste Recycling and Energy Productivity. *Sustainability* **2020**, *12*, 9794. [[CrossRef](#)]
11. Chaudhary, R.; Bisai, S. Factors influencing green purchase behaviour of millennials. *Manag. Environ. Qual. Int. J.* **2018**, *29*, 798–812. [[CrossRef](#)]
12. Yarimoglu, E.; Binboga, G. Understanding sustainable consumption in an emerging country: The antecedents and consequences of the ecologically conscious consumer behavior model. *Bus. Strategy Environ.* **2019**, *28*, 642–651. [[CrossRef](#)]
13. Narula, S.; Desore, A. Framing green consumer behaviour research: Opportunities and challenges. *Soc. Responsib. J.* **2016**, *12*, 1–22. [[CrossRef](#)]
14. Yadav, R.; Pathak, G.S. Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. *Ecol. Econ.* **2017**, *134*, 114–122. [[CrossRef](#)]
15. Testa, F.; Sarti, S.; Frey, M. Are green consumers really green? Exploring the factors behind the actual consumption of organic food products. *Bus. Strategy Environ.* **2018**, *28*, 327–338. [[CrossRef](#)]
16. Ahmad, W.; Kim, W.G.; Anwer, Z.; Zhuang, W. Schwartz personal values, theory of planned behavior and environmental consciousness: How tourists' visiting intentions towards eco-friendly destinations are shaped? *J. Bus. Res.* **2020**, *110*, 228–236. [[CrossRef](#)]
17. Schwartz, S.H. Normative influences on altruism. In *Advances in Experimental Social Psychology*; Academic Press: Cambridge, MA, USA, 1977; pp. 221–279.
18. Dai, S.; Chen, K.; Jin, R. The effect of message framing and language intensity on green consumption behavior willingness. *Environ. Dev. Sustain.* **2022**, *24*, 2432–2452. [[CrossRef](#)]
19. Lindenberg, S.; Steg, L. Normative, gain and hedonic goal-frames guiding environmental behavior. *J. Soc. Issues* **2007**, *63*, 117–137. [[CrossRef](#)]
20. Stern, P.C. New environmental theories: Toward a coherent theory of environmentally significant behavior. *J. Soc. Issues* **2000**, *56*, 407–424. [[CrossRef](#)]
21. Yang, X.; Tseng, Y.; Lee, B. Merging the social influence theory and the goal-framing theory to understand consumers' green purchasing behavior: Does the level of sensitivity to climate change really matter? *Front. Psychol.* **2021**, *12*, 766754. [[CrossRef](#)]
22. Geng, J.; Long, R.; Chen, H.; Li, W. Exploring the motivation behavior gap in urban residents' green travel behavior: A theoretical and empirical study. *Resour. Conserv. Recycl.* **2017**, *125*, 282–292. [[CrossRef](#)]
23. Sharma, A.; Foropon, C. Green product attributes and green purchase behavior: A theory of planned behavior perspective with implications for circular economy. *Manag. Decis.* **2019**, *57*, 1018–1042. [[CrossRef](#)]
24. Lee, K. Opportunities for green marketing: Young consumers. *Mark. Intell. Plan.* **2008**, *26*, 573–586. [[CrossRef](#)]
25. Suki, N.M.; Suki, N.M. Examination of peer influence as a moderator and predictor in explaining green purchase behaviour in a developing country. *J. Clean. Prod.* **2019**, *228*, 833–844. [[CrossRef](#)]
26. Sharma, A.; Joshi, S. Green consumerism: Overview and further research directions. *Int. J. Process Manag. Benchmarking* **2017**, *7*, 206–223. [[CrossRef](#)]
27. Shakil, M.H.; Munim, Z.H.; Tasnia, M.; Sarowar, S. COVID-19 and the environment: A critical review and research agenda. *Sci. Total Environ.* **2020**, *745*, 141022. [[CrossRef](#)] [[PubMed](#)]
28. Mi, L.; Zhao, J.; Xu, T.; Yang, H.; Lv, T.; Shang, K.; Qiao, Y.; Zhang, Z. How does COVID-19 emergency cognition influence public pro-environmental behavioral intentions? *An affective event perspective. Resour. Conserv. Recycl.* **2021**, *168*, 105467. [[CrossRef](#)] [[PubMed](#)]
29. Mohammed, A.; Homaid, A.; Alaswadi, W. Factors influencing green purchase behavior among young consumers in Saudi Arabia. *Transnatl. Mark. J.* **2020**, *8*, 51–73. [[CrossRef](#)]
30. Aseri, M.; Ansari, Z.A. Purchase Behaviour of Green Footwear in Saudi Arabia Using Theory of Planned Behaviour. *Sustainability* **2023**, *15*, 5045. [[CrossRef](#)]
31. Rehman, A.U. Green values and buying behaviour of consumers in Saudi Arabia: An empirical study. *Int. J. Green Econ.* **2017**, *11*, 154–164. [[CrossRef](#)]
32. Ahmed, A.E.; Alzahrani, F. Food Loss and Waste in Saudi Arabia: Analysis, Causes, and Interventions. In *Food and Nutrition Security in the Kingdom of Saudi Arabia, Vol. 2: Macroeconomic Policy and Its Implication on Food and Nutrition Security*; Springer International Publishing: Cham, Switzerland, 2024; Volume 34, pp. 241–274.
33. Waheed, A.; Zhang, Q.; Rashid, Y.; Tahir, M.S.; Zafar, M.W. Impact of green manufacturing on consumer ecological behavior: Stakeholder engagement through green production and innovation. *Sustain. Dev.* **2020**, *28*, 1395–1403. [[CrossRef](#)]
34. Arrive, J.T.; Feng, M. Corporate social responsibility disclosure: Evidence from BRICS nations. *Corp. Soc. Responsib. Environ. Manag.* **2018**, *25*, 920–927. [[CrossRef](#)]
35. Yao, L.; Li, X.; Zheng, R.; Zhang, Y. The impact of air pollution perception on urban settlement intentions of young talent in China. *Int. J. Environ. Res. Public Health* **2022**, *19*, 1080. [[CrossRef](#)]

36. Pajuelo Moreno, M.L.; Duarte-Atoche, T. Relationship between sustainable disclosure and performance—An extension of Ullmann’s model. *Sustainability* **2019**, *11*, 4411. [[CrossRef](#)]
37. García-Salirrosas, E.E.; Rondon-Eusebio, R.F. Green marketing practices related to key variables of consumer purchasing behavior. *Sustainability* **2022**, *14*, 8499. [[CrossRef](#)]
38. Ahmad, W.; Jafar, R.M.S.; Waheed, A.; Sun, H.; Kazmi, S.S.A.S. Determinants of CSR and green purchase intention: Mediating role of customer green psychology during COVID-19 pandemic. *J. Clean. Prod.* **2023**, *389*, 135888. [[CrossRef](#)] [[PubMed](#)]
39. Yang, X.; Jiang, J.; Chen, S.C. Achieving sustainability: Determinants of conscious green purchasing behavior during the COVID-19 pandemic. *Bus. Strategy Environ.* **2023**, *32*, 2229–2244. [[CrossRef](#)] [[PubMed](#)]
40. Alsetoohy, O.; Ayoun, B.; Abou-Kamar, M. COVID-19 pandemic is a wake-up call for sustainable local food supply chains: Evidence from green restaurants in the USA. *Sustainability* **2021**, *13*, 9234. [[CrossRef](#)]
41. Sajid, K.S.; Hussain, S.; Hussain, R.I.; Mustafa, B. The effect of fear of COVID-19 on green purchase behavior in Pakistan: A multi-group analysis between infected and non-infected. *Front. Psychol.* **2022**, *13*, 826870. [[CrossRef](#)]
42. Orîndaru, A.; Popescu, M.F.; Căescu, Ş.C.; Botezatu, F.; Florescu, M.S.; Runceanu-Albu, C.C. Leveraging COVID-19 outbreak for shaping a more sustainable consumer behavior. *Sustainability* **2021**, *13*, 5762. [[CrossRef](#)]
43. Mehrabian, A.; Russell, J.A. *An Approach to Environment Psychology*; MIT Press: Cambridge, MA, USA, 1974.
44. Choi, H.; Kandampully, J. The effect of atmosphere on customer engagement in upscale hotels: An application of S-O-R paradigm. *Int. J. Hosp. Manag.* **2019**, *77*, 40–50. [[CrossRef](#)]
45. Dhir, A.; Talwar, S.; Sadiq, M.; Sakashita, M.; Kaur, P. Green apparel buying behaviour: A Stimulus–Organism–Behaviour–Consequence (SOBC) perspective on sustainability-oriented consumption in Japan. *Bus. Strategy Environ.* **2021**, *30*, 3589–3605. [[CrossRef](#)]
46. Diamantopoulos, A.; Schlegelmich, B.B.; Sinkovics, R.R.; Bohlen, G.M. Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *J. Bus. Res.* **2003**, *56*, 465–480. [[CrossRef](#)]
47. Trivedi, R.H.; Patel, J.D.; Nidhi, A. Causality analysis of media influence on environmental attitude, intention and behaviors leading to green purchasing. *J. Clean. Prod.* **2018**, *196*, 11–22. [[CrossRef](#)]
48. Shaw, D.; McMaster, R.; Newholm, T. Care and commitment in ethical consumption: An exploration of the “attitude-behaviour gap”. *J. Bus. Ethics* **2016**, *136*, 251–265. [[CrossRef](#)]
49. Birch, D.; Memery, J.; Maheshan, D.S.K. The mindful consumer: Balancing egoistic and altruistic motivations to purchase local food. *J. Retail. Consum. Serv.* **2018**, *40*, 221–228. [[CrossRef](#)]
50. De Groot, J.I.M.; Steg, L. Value orientations and environmental beliefs in five countries: Validity of an instrument to measure egoistic, altruistic and biospheric value orientations. *J. Cross-Cult. Psychol.* **2007**, *38*, 318–332. [[CrossRef](#)]
51. Lee, K. Predictors of sustainable consumption among young, educated consumers in Hong Kong. *J. Int. Consum. Mark.* **2014**, *26*, 217–238. [[CrossRef](#)]
52. Chang, C. Guilt regulation: The relative effects of altruistic versus egoistic appeals for charity advertising. *J. Advert.* **2014**, *43*, 211–227. [[CrossRef](#)]
53. Kelman, H.C. Attitudes are alive and well and gainfully employed in the sphere of action. *Am. Psychol.* **1974**, *29*, 310. [[CrossRef](#)]
54. Ivanova, O.; Flores-Zamora, J.; Khelladi, I.; Ivanaj, S. The generational cohort effect in the context of responsible consumption. *Manag. Decis.* **2019**, *57*, 1162–1183. [[CrossRef](#)]
55. Drew, D.; Weaver, D. Media attention, media exposure, and media effects. *J. Q.* **1990**, *67*, 740–748. [[CrossRef](#)]
56. Wartick, S.L. The relationship between intense media exposure and change in corporate reputation. *Bus. Soc.* **1992**, *31*, 33–49. [[CrossRef](#)]
57. Yu, T.Y.; Yu, T.K.; Chao, C.M. Understanding Taiwanese undergraduate students’ pro-environmental behavioral intention towards green products in the fight against climate change. *J. Clean. Prod.* **2017**, *161*, 390–402. [[CrossRef](#)]
58. Festinger, L. A theory of social comparison processes. *Hum. Relat.* **1954**, *7*, 117–140. [[CrossRef](#)]
59. Vermeir, I.; Verbeke, W. Sustainable food consumption among young adults in Belgium: Theory of planned behaviour and the role of confidence and values. *Ecol. Econ.* **2008**, *64*, 542–553. [[CrossRef](#)]
60. Essiz, O.; Mandrik, C. Intergenerational influence on sustainable consumer attitudes and behaviors: Roles of family communication and peer influence in environmental consumer socialization. *Psychol. Mark.* **2022**, *39*, 5–26. [[CrossRef](#)]
61. De Silva, M.D.; Wang, P.; Kuah, A. Why wouldn’t green appeal drive purchase intention? Moderation effects of consumption values in the UK and China. *J. Bus. Res.* **2021**, *122*, 713–724. [[CrossRef](#)]
62. Wolske, K.S.; Gillingham, K.T.; Schultz, P.W. Peer influence on household energy behaviours. *Nat. Energy* **2020**, *5*, 202–212. [[CrossRef](#)]
63. Childers, T.L.; Rao, A.R. The influence of familial and peer-based reference groups on consumer decisions. *J. Consum. Res.* **1992**, *19*, 198–211. [[CrossRef](#)]
64. Zhang, Y.; Wang, Z.; Zhou, G. Antecedents of employee electricity saving behaviour in organizations: An empirical study based on norm activation model. *Energy Policy* **2013**, *62*, 1120–1127. [[CrossRef](#)]
65. Hafner, R.J.; Elmes, D.; Read, D. Exploring the role of messenger effects and feedback frames in promoting uptake of energy-efficient technologies. *Curr. Psychol.* **2019**, *38*, 1936–4733. [[CrossRef](#)]
66. Yang, X.; Chen, S.C.; Zhang, L. Promoting sustainable development: A research on residents’ green purchasing behavior from a perspective of the goal framing theory. *Sustain. Dev.* **2020**, *28*, 1208–1219. [[CrossRef](#)]

67. Zaremohzzabieh, Z.; Ismail, N.; Ahrari, S.; Samah, A.A. The effects of consumer attitude on green purchase intention: A metaanalytic path analysis. *J. Bus. Res.* **2021**, *132*, 732–743. [[CrossRef](#)]
68. Werff, E.; Steg, L.; Keizer, K. The value of environmental self-identity: The relationship between biospheric values, environmental self-identity and environmental preferences, intentions and behaviour. *J. Environ. Psychol.* **2013**, *34*, 55–63. [[CrossRef](#)]
69. Pieniak, Z.; Verbeke, W.; Scholderer, J.; Brunso, K.; Ottar Olsen, S. Impact of consumers' health beliefs, health involvement and risk perception on fish consumption: A study in five European countries. *Br. Food J.* **2008**, *110*, 898–915. [[CrossRef](#)]
70. Griskevicius, V.; Tybur, J.M.; Van den Bergh, B. Going green to be seen Status, reputation, and conspicuous conservation. *J. Personal. Soc. Psychol.* **2010**, *98*, 392–404. [[CrossRef](#)] [[PubMed](#)]
71. Jribi, S.; Ben Ismail, H.; Doggui, D.; Debbabi, H. COVID-19 virus outbreak lockdown: What impacts on household food wastage? *Environ. Dev. Sustain.* **2020**, *22*, 3939–3955. [[CrossRef](#)] [[PubMed](#)]
72. Muhammad, S.; Long, X.; Salman, M. COVID-19 pandemic and environmental pollution: A blessing in disguise? *Sci. Total Environ.* **2020**, *728*, 138820. [[CrossRef](#)]
73. Severo, E.A.; De Guimarões, J.C.F.; Dellarmelin, M.L. Impact of the COVID-19 pandemic on environmental awareness, sustainable consumption and social responsibility: Evidence from generations in Brazil and Portugal. *J. Clean. Prod.* **2021**, *286*, 124947. [[CrossRef](#)]
74. Wang, Q.; Su, M. A preliminary assessment of the impact of COVID-19 on environment—A case study of China. *Sci. Total Environ.* **2020**, *728*, 138915. [[CrossRef](#)]
75. Shehzad, K.; Sarfraz, M.; Shah, S.G.M. The impact of COVID-19 as a necessary evil on air pollution in India during the lockdown. *Environ. Pollut.* **2022**, *266*, 115080. [[CrossRef](#)]
76. Lal, P.; Kumar, A.; Kumar, S.; Kumari, S.; Saikia, P.; Dayanandan, A.; Dibyendu, A.; Khan, M.L. The dark cloud with a silver lining: Assessing the impact of the SARS COVID-19 pandemic on the global environment. *Sci. Total Environ.* **2022**, *732*, 139297. [[CrossRef](#)]
77. Bashir, M.F.; Bilal, B.M.; Komal, B.; Bashir, M.A.; Farooq, T.H.; Najaf, I.; Bashir, M. Correlation between environmental pollution indicators and COVID-19 pandemic: A brief study in Californian context. *Environ. Res.* **2022**, *187*, 109652. [[CrossRef](#)] [[PubMed](#)]
78. Hsu, L.Y.; Chia, P.Y.; Vasoo, S. A midpoint perspective on the COVID-19 pandemic. *Singap. Med. J.* **2020**, *61*, 381. [[CrossRef](#)] [[PubMed](#)]
79. Zambrano-Monserrate, M.A.; Ruano, M.A.; Sanchez-Alcalde, L. Indirect effects of COVID-19 on the environment. *Sci. Total Environ.* **2020**, *728*, 138813. [[CrossRef](#)]
80. Baier, D.; Rausch, T.M.; Wagner, T.F. The drivers of sustainable apparel and sportswear consumption: A segmented kano perspective. *Sustainability* **2020**, *12*, 2788. [[CrossRef](#)]
81. Lo, A.Y.; Liu, S. Towards sustainable consumption: A socio-economic analysis of household waste recycling outcomes in Hong Kong. *J. Environ. Manag.* **2018**, *214*, 416–425. [[CrossRef](#)] [[PubMed](#)]
82. Rauf, A.; Liu, X.; Amin, W.; Rehman, O.U.; Li, J.; Ahmad, F.; Bekun, F.V. Does sustainable growth, energy consumption and environment challenges matter for Belt and Road Initiative feat? A novel empirical investigation. *J. Clean. Prod.* **2020**, *262*, 121344. [[CrossRef](#)]
83. Liu, Y.; Song, W. Modelling crop yield, water consumption, and water use efficiency for sustainable agroecosystem management. *J. Clean. Prod.* **2020**, *253*, 119940. [[CrossRef](#)]
84. O'Brien, M.; Bringezu, S. What is a sustainable level of timber consumption in the EU: Toward global and EU benchmarks for sustainable forest use. *Sustainability* **2017**, *9*, 812. [[CrossRef](#)]
85. Pirouz, B.; Shaffiee Haghshenas, S.; Pirouz, B.; Shaffiee Haghshenas, S.; Piro, P. Development of an assessment method for investigating the impact of climate and urban parameters in confirmed cases of COVID-19: A new challenge in sustainable development. *Int. J. Environ. Res. Public Health* **2020**, *17*, 2801. [[CrossRef](#)]
86. Cohen, M.J. Does the COVID-19 outbreak mark the onset of a sustainable consumption transition? *Sustain. Sci. Pract. Policy* **2020**, *16*, 1–3. [[CrossRef](#)]
87. Severo, E.A.; Dorion, E.C.H.; De Guimaraes, J.C.F. Innovation and environmental sustainability: Analysis in Brazilian metal-mechanic industry. *Int. J. Innov. Sustain. Dev.* **2017**, *11*, 230–248. [[CrossRef](#)]
88. Kline, R.B. *Principles and Practice of Structural Equation Modeling*, 3rd ed.; The Guilford Press: New York, NY, USA, 2010; Volume 23, pp. 29–41.
89. Aliedan, M.M.; Alyahya, M.A.; Elshaer, I.A.; Sobaih, A.E.E. Who Is Going Green? Determinants of Green Investment Intention in the Saudi Food Industry. *Agriculture* **2023**, *13*, 1047. [[CrossRef](#)]
90. Alkandi, I.; Farooqi, M.R.; Hasan, A.; Khan, M.A. Green Products Buying Behaviour of Saudi Arabian and Indian Consumers: A Comparative Study. *Int. J. Prof. Bus. Rev.* **2023**, *8*, 03906. [[CrossRef](#)]
91. Almohammadi, H.G.; Abdulghaffar, N.A. The Influencing Factors of Consumers' Purchase Intention toward Green Products: A Case of Consumers in Saudi Arabia. *J. Sustain. Dev.* **2022**, *15*, 23–41. [[CrossRef](#)]
92. Hair, J.F., Jr.; Black, W.C.; Babin, B.J.; Anderson, R.E. *Multivariate Data Analysis*, 8th ed.; Prentice Hall: Upper Saddle River, NJ, USA, 2020; Volume 21, pp. 21–34.
93. Podsakoff, P.M.; MacKenzie, S.B.; Lee, J.Y.; Podsakoff, N.P. Common method biases in behavioural research: A critical review of the literature and recommended remedies. *J. Appl. Psychol.* **2003**, *88*, 879–903. [[CrossRef](#)] [[PubMed](#)]

94. Lindell, M.K.; Whitney, D.J. Accounting for common method variance in cross-sectional research designs. *J. Appl. Psychol.* **2001**, *86*, 114. [[CrossRef](#)] [[PubMed](#)]
95. Kock, N. Factor-based structural equation modeling with WarpPLS. *Australas. Mark. J.* **2019**, *27*, 57–63. [[CrossRef](#)]
96. Anderson, J.C.; Gerbing, D.W. Structural equation modeling in practice: A review and recommended two-step approach. *Psychol. Bull.* **1988**, *103*, 411–423. [[CrossRef](#)]
97. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **1981**, *18*, 39–50. [[CrossRef](#)]
98. Zhao, X.; Lynch, J.G.; Chen, Q. Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *J. Consum. Res.* **2010**, *37*, 197–206. [[CrossRef](#)]
99. MacKinnon, D.P.; Lockwood, C.M.; Williams, J. Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivar. Behav. Res.* **2004**, *39*, 99–128. [[CrossRef](#)] [[PubMed](#)]
100. Hayes, A.F. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*; The Guilford Press: New York, NY, USA, 2018.
101. Kautish, P.; Paul, J.; Sharma, R. The moderating influence of environmental consciousness and recycling intentions on green purchase behavior. *J. Clean. Prod.* **2019**, *228*, 1425–1436. [[CrossRef](#)]
102. Wu, C.H.; Chen, S.C. Understanding the relationships of critical factors to facebook educational usage intention. *Internet Res.* **2015**, *25*, 262–278. [[CrossRef](#)]
103. Kingston, A.; Paulraj, G. Purchasing practice of young consumers towards green packaging: Influence of value system with the mediating effect of attitude. *Sustain. Agri Food Environ. Res.* **2024**, *12*, 45–61.
104. Aaker, J.L.; Garbinsky, E.N.; Vohs, K.D. Cultivating admiration in brands: Warmth, competence, and landing in the golden quadrant. *J. Consum. Psychol.* **2012**, *22*, 191–194. [[CrossRef](#)]

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