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Greenwashing and Green Purchase Behavior in Kathmandu Valley: A Moderation Analysis

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Abstract

Purpose: This paper examines how greenwashing understanding (GWU) moderates the relationships between green purchase behaviour (GPB) and its drivers: receptivity to green advertising (RGC), environmental consciousness (EC), and personal norms (PNS) among consumers in Kathmandu Valley.

Design/Methodology/Approach: We administered a set of structured questionnaires and interviewed purposively selected 224 respondents with a preexisting understanding of the green concept. We then estimated partial least squares structural equation model (PLS-SEM) coefficients to test the hypotheses.

Findings: This paper highlights that RGC, EC, and PNS influence GPB. However, GWU does not moderate the relationship between GPB and its antecedents.

Research Limitations/Implications: This study's findings offer valuable insights for firms, managers, and consumers. They provide significant information regarding consumer awareness, perceptions of green products, and the factors influencing green consumption behaviour. Marketing managers can leverage these insights to enhance their strategies for effectively promoting green and sustainable products.

Originality/Value: To the best of the authors' knowledge, this article represents the first empirical study to explore the concept of greenwashing understanding and its moderating impact on the relationship between GPB and its antecedents in Nepal, particularly in the Kathmandu Valley. While greenwashing has been extensively researched in various countries, no prior studies have examined this phenomenon within the Nepalese context, utilizing the Theory of Planned Behavior (TPB), Stimulus-Organism-Response (S-O-R) model, and Attitude-Behavior-Context (ABC) theory as foundational frameworks.

Keywords: green purchase, greenwashing, moderating role, receptivity, green advertising

Introduction

Sustainability has become a major social concern, with more people becoming environmentally concerned and curious about the products they use and their impact on the environment (Sharma et al., 2023). The concern for sustainability has led to a great deal of attention being paid to the concept of sustainable consumption by international organizations such as the United Nations Commission on Sustainable Development (CSD) and the Organization for Economic Co-operation and Development (OECD) (Lim, 2017). National

research programs in the US, Norway, and the Netherlands have also shown a strong interest. These organizations are becoming increasingly aware of how unsustainable the existing levels and consumption patterns are for the environment (Lim, 2017).

Although many consumers recognize the importance of sustainability, environmental preservation, and healthy lifestyles, and some may even indicate a desire to change their purchase patterns, they often fail to enact substantial changes or only do so to a limited degree. A multitude of studies (e.g., Do Paco et al., 2019; Han, 2020; Jhawar et al., 2023; Jog & Singhal, 2020; Kavitha & Kumar, 2023; Setiawan & Yosephani, 2022; Word et al., 2018) can be found in the context of sustainable issues, but consumption habits among consumers remained unchanged. The concern for sustainability not only energized consumers but also the companies that were seen to align with environmental protection. Because of the growing environmental movements worldwide, an increasing number of companies have acted by implementing green production systems, aiming to boost the production of green products to alleviate and potentially reverse the environmental harm that has been documented thus far (Michel et al., 2023). Consumers' growing sense of crisis about environmental issues is leading them to focus more on products that are environmentally friendly (Sun et al., 2022). Altogether, these concerns are driving a continual rise in interest in green marketing as consumer demand for sustainable and socially responsible solutions increases. To attain green or sustainable consumption, consumers and companies need to act as drivers of the green movement and integrate environmental responsibility (Siddique et al., 2021). Further, corporations need to disclose their sustainable practices, and marketers must understand the factors influencing consumers' green purchase behaviors.

Green purchase behavior is becoming increasingly popular in business and academic fields. A number of studies can be found investigating the factors that influence green purchase behavior (e.g., Han, 2020; Jog & Singhal, 2020; Kumar, 2021; Setiawan & Yosephani, 2022; Sun et al., 2022). It refers to actions related to purchasing products that cause the least amount of environmental damage (Siddique et al., 2021). Environmental changes over time are encouraging consumers to consider their green consumption behaviors and adapt accordingly (Siddique et al., 2021). Likewise, firms are motivated to develop sustainable marketing campaigns to showcase their positive corporate reputation and determination to social responsibility in response to the increasing demand for sustainable products (Zhang et al., 2018). Despite these growing environmental concerns, firms are still using greenwashing practices to deceive customers by providing limited information, hiding certain facts, and only presenting positive evidence regarding the green performance of their products (Hameed et al., 2021). Because of the evolving nature of consumer behavior, continuous study is necessary in the green consumption field (Siddique et al., 2021). While green products are essential for environmental sustainability, it is yet unclear what factors affect consumers' decisions to purchase green products (Sun et al., 2022). Therefore, it is very essential to study the factors that affect consumers' purchase behavior in relation to green products. Further, to encourage the adoption of green products, it is crucial to identify a moderator that can enhance the consistency between the variables in the consumption of green products. This paper analyzes the relationship between GWU, RGC, EC, and PNS with GPB. In this paper, GWU is used as a moderating variable, while the independent variables are RGC, EC, and PNS, and the dependent variable is GPB.

The burgeoning concerns related to environmental issues and the protection of the ecological system are rapidly gaining prominence in Nepal. Consumers are increasingly displaying heightened consciousness toward the environment and their consumption patterns, and they are even ready to pay a premium for organic products (Sharma, 2009). However, unsustainable activities

such as minimal recycling, rising throwaway plastic culture, and doubling petroleum imports in Nepal are contributing to accelerating Himalayan ice melting, elevated black carbon emissions, and exacerbating a public health crisis (Nepali Times, 2021). Existing literature from the Nepalese context in the green domain has primarily focused on aspects such as green development, green products particularly animal and organic foods, green brands, and green energy (e.g., Baniya et al., 2021; Budhathoki & Pandey, 2021; Gautam & Pokhrel, 2023; Yadav et al., 2021). Similarly, as previously noted, the literature on green products is predominantly centered on studies that identify consumer intentions to purchase these products (Sun et al., 2022). Nepal could be an ideal country to conduct an extensive study on issues related to greenwashing and consumers' green purchase behaviors. Further, previous studies mainly concentrate on developed countries (Jog & Singhal, 2020), and the lack of a rigid definition of greenwashing (Lyon & Montgomery, 2015) and the dearth of literature in the field of green consumption highlight the greater scope for conducting the study in developing countries such as Nepal. Therefore, to achieve the overall objective, this paper focuses on products at a general level to assess the factors influencing consumers purchase behaviors of green products, unlike previous studies that used the same framework but focused on specific product categories, such as personal care products (e.g., Jog & Singhal, 2020). Additionally, since the previous study (Jog & Singhal, 2020) analyzed data using Amos 22.0, to address this methodological gap, the researcher utilized PLS-SEM with Smart PLS software version 4.1.0.2, as it is considered to be more effective in testing theories and predicting complex models (Hair et al., 2017; Subedi et al., 2023). Mishra and Aithal's (2022) research on green financing in Nepal highlights the importance of understanding greenwashing and its impact on green purchase behavior. Their study found that a lack of regulatory support and high implementation costs are key barriers to the adoption of green banking practices in Nepal . This suggests that consumers in the Kathmandu Valley may be skeptical of green claims made by banks and other organizations, which could negatively impact their willingness to engage in green purchasing.

Mishra and Aithal's (2023) subsequent work on factors influencing green banking practices further reinforces this point, identifying top management commitment, employee awareness, and customer demand as the key drivers of green banking adoption . This indicates that addressing greenwashing concerns and building genuine consumer trust in green initiatives is crucial for promoting green purchase behavior in the Kathmandu Valley.

Mishra et al.'s(2024) review of the influence of environmental sustainability orientations on organizational performance provides additional context, emphasizing the need for organizations to align their sustainability efforts with genuine environmental impact to avoid perceptions of greenwashing . By understanding and mitigating the effects of greenwashing, businesses in the Kathmandu Valley can more effectively leverage green marketing strategies to drive sustainable consumer behavior.

The contributions of this paper are as follows: first, this paper contributes to the current literature by enhancing the existing knowledge of factors that influence GPB in Nepal. Second, only a very few research have investigated the moderating influence of GWU in the relationship between GPB and its antecedents: RGC, EC, and PNS, thus enriching the existing body of literature on green consumption. Third, future studies can use the conceptual framework provided by this present paper using the TPB, S-O-R model, and ABC theory to test the moderating effect considering other variables. Fourth, it offers practical insights for marketers, who can use the findings to promote green products by targeting consumers based on their level of environmental awareness, personal beliefs, and norms. Finally, firms can educate consumers by promoting open communication about greenwashing tactics and highlighting the true nature of their products to achieve overall sustainable consumption.

By addressing these key contributions, this research paper provides a valuable addition to the existing literature on green purchasing behavior and offers practical implications for businesses and policymakers in the Kathmandu Valley.

Research Objectives

This paper examines how greenwashing understanding (GWU) moderates the relationships between green purchase behavior (GPB) and its drivers: receptivity to green advertising (RGC), environmental consciousness (EC), and personal norms (PNS) among consumers in Kathmandu Valley.

Theoretical Backgrounds, Literature Review and Hypotheses Development

Theoretical Foundations

Theory of Planned Behavior

Ajzen's (1985) Theory of Planned Behavior (TPB) is an extended form of the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975). According to TPB, behavioral intentions are influenced by three factors: attitude toward the behavior, subjective norm, and perceived behavioral control (Ajzen, 1991). Attitude toward the behavior refers to an individual's positive or negative perceptions of engaging in an action (Eagly & Chaiken, 1993). Similarly, subjective norm pertains to an individual's belief that a behavior is appropriate in the eyes of significant others, and perceived behavioral control indicates how difficult an individual perceives the activity to be (Eagly & Chaiken, 1993). The relative importance of these components in understanding a person's intentions and behaviors varies based on the specific behavior and context (Chaudhary & Bisai, 2018). Given that green behavior is a relatively new concept (Pop et al., 2020), TPB has been applied in various contexts and scenarios, with researchers adding new variables to the model according to their research objectives. Since TPB has been widely used in previous environmental studies (e.g., Costa et al., 2021; Do Paco, 2019; Pop et al., 2020; Sheoran & Kumar, 2022), this study also employs TPB as one of its theoretical roots.

Stimulus-Organism-Response Model

Mehrabian and Russell's (1974) S-O-R model postulates that the environment acts as a stimulus (S), consisting of diverse clues that prompt an organism (O) to make an internal assessment, following which an organism generates a response (R). This model elucidates the connection between external stimuli, such as environmental conditions, which influence organisms, such as people's emotions and cognition, and their resultant responses as behavior (Zhang et al., 2021). According to the S-O-R paradigm, individuals' perceptions of their social and physical environment serve as stimuli, while internal, unobservable processes are represented by the organism, and individual attitudes and behaviors constitute the response (Hempel & Hamm, 2016). The S-O-R framework outlines a three-step response process to environmental stimuli: exposure to the stimulus (S), generation of internal states or evaluations (O), and response initiation (R) (Wang et al., 2018). In the context of the green or sustainable domain, previous studies (e.g., Dinh et al., 2023; Hempel & Hamm, 2016; Hu et al., 2021; Su et al., 2018; Wang et al., 2018) have validated the S-O-R framework. Based on the literature, the current study uses the S-O-R model to investigate how greenwashing understanding and environmental consciousness affect green consumption behavior.

Attitude Behavior Context Theory

The attitude-behavior-context (ABC) theory proposed by Guagnano et al. (1995) is an effective framework for examining the relationship between certain attitudes and certain behaviors (Wang, Ma, & Bai, 2020). The ABC theory states that contextual (C), and attitudinal (A) components work together to generate behavior (B) (Guagnano et al., 1995). Individuals' beliefs, values, and norms that shape their conduct are reflected in their attitudes (Stern, 2000). Further examples of these attitudinal factors include Predispositions and beliefs related to a certain behavior, such as the difficulty in performing a particular action or the results of that action (Maseeh et al., 2022). Contextual factors,

on the other hand, pertain to the specific context that is associated with an individual or a group of consumers that use a product (Maseeh et al., 2022). The "ABC theory" formulation suggests that the more challenging, lengthy, or expensive a behavior is, the less dependent it is on attitudinal factors for individual behaviors that are not significantly supported by context (Stern, 2000).

Green Purchase Behavior

The concept of GPB has been discussed in the context of products that are sustainable, beneficial for the environment or society, or can be recycled without causing harm to the environment (Chan, 2001; Jog & Singhal, 2020). GPB refers to "purchasing and consuming products that are benign toward the environment" (Mainieri et al., 1997) or the purchasing of sustainable products that are "beneficial," "recyclable," and "sensitive/ responsive" to the environment (Mostafa, 2007). It is obvious that customers exhibit fundamentally green behaviors by prioritizing both price and quality when selecting goods and brands and by selecting those that practice environmental responsibility and conservation (Jog & Singhal, 2020). While many consumers express interest in changing their consumption patterns and recognize the importance of sustainability, environmental protection, and healthy living, they continue to make minimal or no changes to their consumption habits (Teufer & Grabner-Kräuter, 2023). Previous studies have primarily examined factors such as environmental attitude, environmental commitment, personal norms, ascription of responsibility, and green purchase intention in shaping GPB (e.g., Fontes et al., 2021; Han, 2020; Kumar, 2021; Setiawan & Yosephani, 2022; Sun et al., 2022; Word et al., 2018). As most studies have focused on understanding the attitude-behavior gap in green purchase decisions, beside this, this paper contributes to the existing literature by conducting a comprehensive study on general category products and introducing the moderation role of GWU in the relationship between GPB and its antecedents, RGC, EC, and PNS.

Greenwashing Understanding and Green Purchase Behavior

The theoretical logic for the relation is explained by stimulus- organisim- response (S-O-R) model of Mehrabian and Russell's (1974). This theroy states that an individual's immediate surroundings (environmental stimuli) can influence both their psychological state and ultimately their consumption behavior (Kim & Park, 2019). In this study, this theory suggests that upon encountering green products, consumers are inclined to evaluate the pros and cons of using them, becoming more attentive to deceptive claims made by firms, and subsequently making purchasing decisions based on their evaluation. More and more businesses are misleading consumers about the environmental friendliness of their products or services through greenwashing in their advertising (Jog & Singhal, 2020). Though, a business may appear more ecologically friendly than it is (Topal et al., 2020), consumers find it difficult to discriminate between truthful and false statements. For example, Volkswagen's "Clean Diesel" campaign degraded its reputation among green consumers after its emissions scandal, resulting in a consumer backlash across several key markets (Word et al., 2018). A multitude of studies have found a significant negative influence of greenwashing on green purchase intention (GPI) (e.g., Setiawan & Yosephani, 2022; Word et al., 2018). For instance, the study conducted by Kavitha and Kumar (2023) demonstrated a direct negative impact of greenwashing on sustainable buying behavior. Taking this into account, this paper argues that when consumers prioritize environmental consequences, they become more attentive to firms' environmental claims, making it easier to identify and ultimately influencing their behavior towards green purchases. Based on the theoretical and empirical review, this paper hypothesized that:

H1. GWU negatively influences GPB.

Receptivity to Green Advertising and Green Purchase Behavior

Ajzen (1985, 1991) TPB has been applied to explain the relationship between RGC and GPB.

This theory suggests that attitudes are shaped by individuals' beliefs about the outcomes resulting from a behavior and how they evaluate those outcomes. When appeal or emotion sequences are employed in advertising, they may have a distinct effect on viewers' attitudes; in these situations, positive appeals may make it easier to deal with negative appeals inside a single message (Suci et al., 2022). In this regard, this paper postulates that emotions and beliefs play a crucial role in shaping individuals' receptivity to green advertising, which in turn influences their attitudes towards green products and subsequently drives green purchase behavior. Advertising has been found to affect consumers' attitudes, intentions, and purchasing behaviors across a variety of industries (Bailey et al., 2016). Existing literature proves that receptivity to advertising positively influences buying behavior (Do Paco et al., 2019). For instance, studies have demonstrated the positive impact of RGC on GPB (e.g., Do Paco et al., 2019; Jog & Singhal, 2020). It is anticipated that green advertising will differentially affect people green consumption behaviors who are highly responsive to it in the field of green marketing (Bailey et al., 2016). This paper proposes that receptivity to green advertising has the potential to affect consumers' green purchase behavior. Based on the theoretical and empirical review, this paper hypothesized that:

H2. RGC positively influences GPB.

Environmental Consciousness and Green Purchase Behavior

The theoretical logic for the relation is explained by stimulus- organisim- response (S-O-R) model of Mehrabian and Russell's (1974). This theory states that a person's cognitive and affective reactions (organism) are influenced by environmental stimuli, which in turn generate various behavioral responses (Donovan and Rositer, 1982). In this paper, the S-O-R model postulates that environmental stimuli, such as exposure to the environment, can affect people's internal processes, including their environmental consciousness. This, in turn, can influence people's behavioral responses, which may enhance participation in pro-environmental activities. Since examples of exaggerating and fabricating a product's environmental benefits are on the rise, EC is expected to play a part in decisions about green purchases (D'souza & Taghian, 2005). Existing literature has found a significant positive impact of EC on GPB (e.g., Akehurst et al., 2012; Fontes et al., 2021; Jog & Singhal, 2020). For instance, Fontes et al. (2021) showed a positive influence of EC on GPB through attitude and environmental behavior. Therefore, it is argued that individuals who are enthusiastic about environmental protection are more likely to demonstrate positive green purchase behavior. Based on the theoretical and empirical review, this paper hypothesized that:

H3. EC positively influences GPB.

Personal Norms and Green Purchase Behavior

Ajzen (1991) TPB has been applied to explain the relationship between RGC and GPB. This theory suggests that individuals' intentions and behaviors are shaped by their perceptions of the social pressures or expectations surrounding the behavior. The TPB (Ajzen, 1991) and its predecessor, the TRA (Fishbein & Ajzen, 1975), have, in earlier study, been expanded to include the personal-norm idea in investigating conduct for which moral considerations are likely to occur (Harland et al., 1999). In this paper, the TPB suggests that individuals who value environmental protection tend to develop strong personal norms prioritizing sustainable consumption behavior, consequently leading to more positive intentions and behaviors towards green purchase decisions. Personal norms were viewed by Ajzen (2005) as an extension of subjective norms and attitudes (Morren & Grinstein, 2021). In green production–related literature, the PN is evaluated for its part in helping to protect the environment by recycling and reusing green items (Nguyen et al., 2018). Several studies, including those by Sheraz & Saleem (2021) and Wang et al. (2023), have shown a significant positive impact of PNS on GPI, while Jhawar et al. (2023), and Han (2020) demonstrated a direct positive impact of PNS on GPB. Additionally,

PNS have been found to be significantly associated with pro-environmental behavior (van der Werff et al., 2019). Based on theoretical and empirical reviews, this paper posits that individuals who value environmental conservation hold strong personal norms, which positively influence their engagement in green purchase behavior. Therefore, this paper hypothesized that:

H4. PNS positively influences GPB.

Moderating Role of Greenwashing Understanding

To explain the moderating role of GWU in the relationship between GPB and its antecedents: RGC, EC, and PNS, ABC theory (Guagnano et al., 1995) has been applied. According to ABC theory, the combined form of personal-sphere attitudinal variables (A) and contextual factors (C) produces behavior (B) (Guagnano et al., 1995). When contextual factors are neutral, the attitude-behavior association is strongest, and when contextual forces are substantially positive or negative, it approaches zero, thereby compelling or preventing the behavior in question. In this paper, building on ABC theory, the researcher considered GWU as a contextual variable and RGC, EC, and PNS as attitudinal factors driving the GPB among consumers. Given the existing literature, which found the negative impact of greenwashing on GPI (e.g., Setiawan & Yosephani, 2022; Word et al., 2018), as well as GPB (Kavitha & Kumar, 2023), and the positive impact of RGC on GPB (e.g., Do Paco et al., 2019; Jog & Singhal, 2020), EC on GPB (e.g., Akehurst et al., 2012; Jog & Singhal, 2020), and PNS on GPB (e.g., Jhawar et al., 2023), it is evident that greenwashing has the potential to negatively mislead consumers, influencing their purchasing attitudes and behaviors (e.g., Bulut et al., 2021; Martínez et al., 2020; Leckie et al., 2021). As some green brands may make questionable claims about their environmental impacts, consumers may find it difficult to evaluate a brand's greenness.Various studies have examined the moderating role of greenwashing in the context of green behavior. For example, Leckie et al. (2021) investigated the moderating role of greenwashing on customer engagement behavior and its antecedents (desired self-identity, perceived green value, and altruistic value). Bulut et al. (2021) discovered that greenwashing perception moderates the relationship between environmental concern and green behavior. Additionally, Jog and Singhal (2020) reinforced the moderating role of greenwashing in the relationship between GPB and its antecedents: RGC, PNS, and EC. Existing literature has substantiated that greenwashing can have significant impacts, leading to long-term consequences for the market (Leckie et al., 2021). Based on these theoretical ground and empirical findings, this paper proposes that consumers are unlikely to exhibit positive green purchasing behavior if they perceive greenwashing tactics in a company's practices. Therefore, this paper hypothesized that:

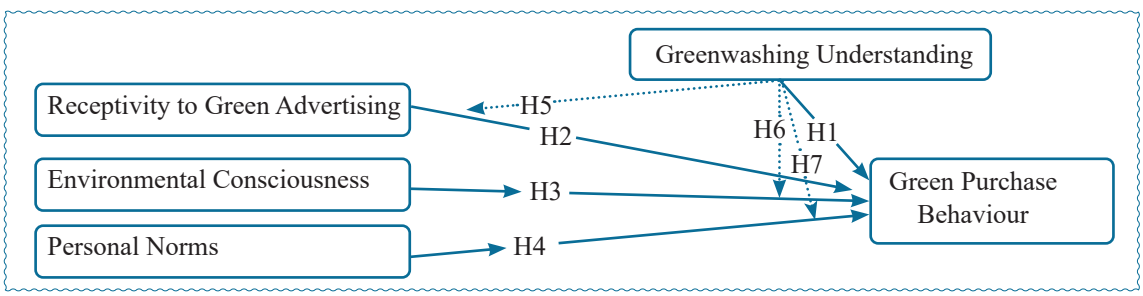
H5. GWU moderates the relationship between RGC and GPB.

H6. GWU moderates the relationship between EC and GPB.

H7. GWU moderates the relationship between PNS and GPB.

Figure 1

Proposed Conceptual Framework of Green Purchase Behavior



Note. Jog and Singhal (2020)

Research Methodology

Research Design

The paper applied a cross-sectional survey design since there was no necessity to manipulate independent variables (GRC, EC, and PNS) to investigate their impact on the dependent variable (GPB). This approach is consistent with the prior study conducted by Pokhrel and KC (2023).

Population and Sample

First, the study's target population for investigating the proposed conceptual framework consisted of consumers within the Kathmandu Valley who were aware of green products. Since consumers aged 18–30 are more inclined to purchase green products (Wang et al., 2020) and the Kathmandu Valley is a densely populated urban area in Nepal (Gautam & Pokhrel, 2023), the sample unit for this study was primarily focused on green consumers within this age group (18-30) in the Kathmandu Valley. Second, the target population may not be adequately categorized, as the number of consumers who are environmentally concerned in Kathmandu Valley is unknown. Thus, non-probability (purposive) sampling was applied. Third, the paper's sample size of 224 respondents to capture 19 items from five variables was determined based on the criteria outlined by Hair et al. (2016), which suggest that to perform advanced multivariate analysis, such as structural equation modeling, the sample size should be at least five to ten times larger than the number of items used in the analysis. Additionally, this paper argues that green consumers are also homogeneous in nature, similar to digital payment users (e.g., Pokhrel & KC, 2023); thus, the researcher assumed that a sample size of 224 could adequately represent the population.

Measures

A structured questionnaire was used to collect the data and examine the proposed model. Further, a six-item survey was applied to measure demographic variables, including one yes/no and one open-ended question. Similarly, Likert scale was employed to measure the GPB, GWU, RGC, EC, and PNS variables. The scale was anchored on a 5-point Likert scale (1 = "strongly disagree" to 5 = "strongly agree"). The detailed descriptions of the measures are as follows:

First, green purchase behavior scale was adopted from Jog and Singhal (2020), having 4 items in the scale, which was previously adapted from Jaiswal and Kant's (2018) 4-item scale, and the Cronbach's alpha coefficient was 0.814. A sample item included: "When I want to buy a product, I look at the ingredient label to see if it contains things that are environmentally damaging."

Second, greenwashing scale was adopted from Jog and Singhal (2020), having 5 items in the scale, which was previously adapted from Leonidou and Skarmeas (2017) 5-item scale, and the Cronbach's alpha coefficient was 0.906. A sample item included: "Most companies mislead with words about the environmental features of their products."

Third, receptivity to green advertising scale was adopted from Jog and Singhal (2020), having 5 items in the scale, which was previously adapted from the Do Paco et al. (2019) 9-item scale, and the Cronbach's alpha coefficient was 0.885. A sample item included: "I tend to pay attention to advertising messages that talk about the environment."

Fourth, environmental consciousness scale was adopted from Jog and Singhal (2020), having 3 items in the scale, which was previously adapted from the Papista and Dimitriadis (2019) 3-item scale, and the Cronbach's alpha coefficient was 0.845. A sample item included: "I feel I have an ethical obligation to avoid brands and companies that pollute the environment."

Final, personal norms scale was adopted from Jog and Singhal (2020), having 2 items in the scale, which was previously adapted from the Nguyen et al. (2018) 6-item scale, and the Cronbach's alpha coefficient was 0.847. A sample item included: "Buying products that damage the environment would be morally wrong for me."

Data Collection Procedure

Printed questionnaires were distributed to collect data for the investigation. It was made clear

to every respondent that their participation in the data collection was entirely voluntary and that they might withdraw at any moment. Further, the confidentiality of personal information was ensured for all the respondents. In total, 300 questionnaires were distributed, of which 275 were returned. Among these, 224 responses were deemed usable and were used for subsequent analysis.

Table 1

Demographic Profile of Respondents

Variables	Frequency	Percentage
Environmental Enthusiasm		
Yes	188	83.9
No	36	16.1
Age		
below 18	5	2.2
18-30	219	97.8
Gender		
Male	73	32.6
Female	151	67.4
Educational Level		
Intermediate Level	9	4.0
Bachelor Level	187	83.5
Master Level and above	28	12.5
Occupation		
Unemployed	150	67.0
Employed	60	26.8
Self employed	14	6.3

Note: Calculated by the authors using data from questionnaire survey

Results and Analysis

Demographic Profile of Respondents

The researcher has calculated the demographic profile of 224 respondents to understand their characteristics, including age, gender, education level, occupation, environmental enthusiasm, and awareness of green products. In Table 1, the most frequently observed category of environmental enthusiasm was yes (n = 188, 83.9%). Likewise, the most frequently observed category of age was 18–30 (n = 219, 97.3%). Most of the respondents in this paper were female (n = 151, 67.4%). Moreover, the most common category of respondents (n =187, 83.5%) were in bachelor level. Finally, 67.0% of the respondents (n = 150) were unemployed.

Common Method Bias

In this paper, Harman's single-factor method was employed to determine if a single factor could adequately explain the variance. It was found that the variance explained by an unrotated single factor was under the required threshold of 50% (Podsakoff et al., 2003). Therefore, the presence of common method biases in the dataset is unlikely.

Structural Equation Modelling

Since SEM can test whole hypotheses, manage various types of measurement error, and model latent variables, it is an invaluable technique for addressing a wide range of research problems (Henseler et al., 2016). There are two main SEM techniques: covariance-based SEM and variance-

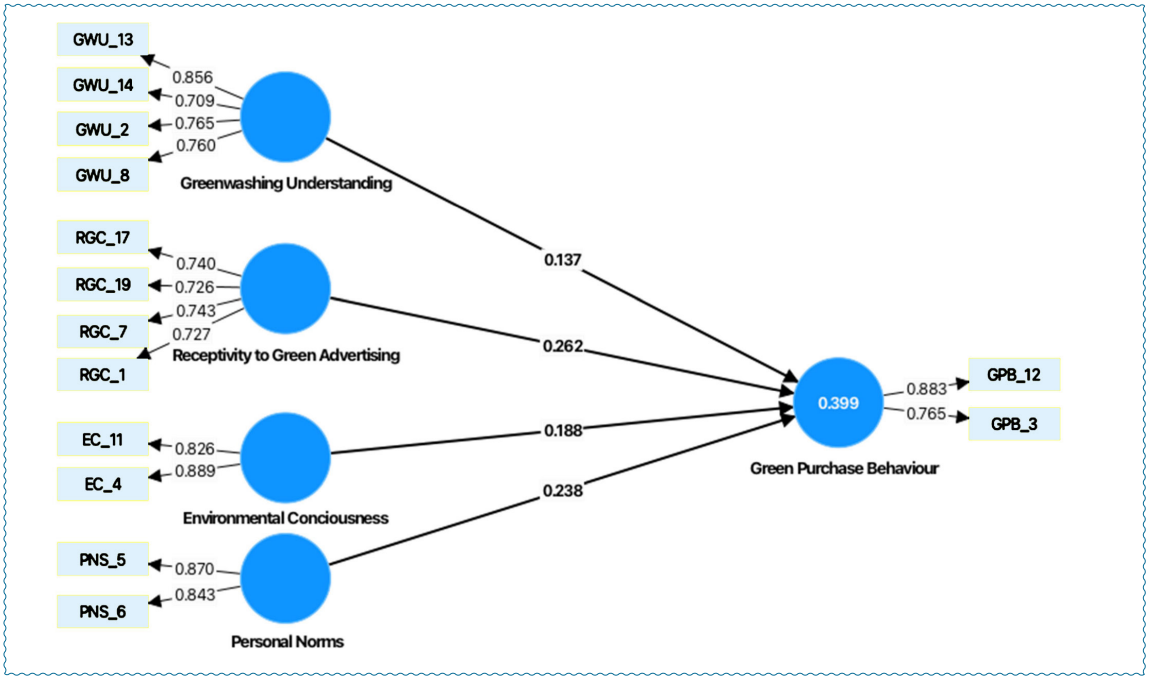
based SEM (such as PLS-SEM). This paper used PLS-SEM with Smart PLS software version 4.1.0.2, as it is considered better for theory testing and predicting complex models (Hair et al., 2017; Subedi et al., 2023). Since the study aimed to investigate the moderating effect of GWU in relation to the independent variables RGC, EC, and PNS and the dependent variable GPB, the PLS-SEM was applied.

Measurement Model Evaluation

This paper used three measurement model criteria—reliability, convergent validity, and discriminant validity—to ensure the reliability and validity of the measurements (Ringle et al., 2015). The reliability of the measures was estimated using composite reliability (CR) and Cronbach's alpha (CA), while validity was estimated through convergent validity and discriminant validity analyses. Because of the poor factor loadings, this paper dropped 2 items from GPB Construct (GPB 9, GPB 16), 1 item from GWU (GWU 18), 1 item from RGC (RGC 15), and 1 item from PNS (PNS 10). The measurement model after the adjustment is illustrated in the Figure 2.

Figure 2

Measurement Model



Note. Created by the Authors

Reliability Analysis

In this paper, CR and CA were applied to estimate the constructs' reliability. The values of CA and CR higher than 0.70 in Table 2 indicate that the measurement model is reliable (Hair et al., 2011). Additionally, the values of CA for EC and PNS were 0.644 and 0.637, respectively, falling within the acceptable range (Gaskin, 2021). However, the value of CA for GPB was 0.543, which is less than the required CA (Gaskin, 2021). Since values of CA can be relatively small when the scale comprises a small number of items (Latif & Sajjad, 2018), the researcher chose to keep the variable because it is crucial to the paper's findings.

Validity Analysis

This paper applied convergent and discriminant validity to estimate the validity of

the measurement model. The connection between closely related constructs is known as convergent validity. To demonstrate convergent validity, item loadings and the average variance extracted (AVE) for variables must be greater than 0.7 and 0.5, respectively (Hair et al., 2016). Table 2 shows that every construct exceeds these thresholds, confirming the convergent validity of the model.

Discriminant Validity

This paper applied Fornell and Larcker's criteria along with the Hetero-Trait-Mono-Trait (HTMT) Ratio to test the discriminant validity. Fornell and Larcker (1981) recommend that, to ensure discriminant validity, the square root of AVE should be higher than the correlation with all other variables in the model. This paper found that the square roots of AVEs were higher than the correlations with other constructs (Table 3). Likewise, the threshold level for HTMT ratios has been debated in the previous studies; Henseler et al. (2015) proposed a threshold of 0.85 or less, while Teo et al. (2008) suggested a more liberal threshold of 0.90 or less. In Table 3, the HTMT results indicate that the ratios were all below the required threshold of 0.90 for each construct. Thus, based on these results, discriminant validity was established.

Table 2

Validity and Reliability of Constructs

Constructs	Indicators	Loadings	VIF	AVE	CR (rho_a)	CR (rho_c)	Alpha
GPB	GPB3	0.765	1.161	0.682	0.577	0.810	0.543
	GPB12	0.883	1.161				
GWU	GWU2	0.765	1.424	0.599	0.784	0.856	0.776
	GWU8	0.760	1.547				
	GWU13	0.856	1.981				
	GWU14	0.709	1.422				
RGC	RGC1	0.727	1.326	0.539	0.716	0.824	0.715
	RGC7	0.743	1.344				
	RGC17	0.740	1.494				
	RGC19	0.726	1.476				
EC	EC4	0.889	1.292	0.736	0.663	0.848	0.644
	EC11	0.826	1.292				
PNS	PNS5	0.870	1.280	0.734	0.641	0.846	0.637
	PNS6	0.843	1.280				

Notes: EC = Environmental Consciousness; GPB = Green Purchase Behavior; GWU = Greenwashing Understanding; PNS = Personal Norms; RGC = Receptivity to Green Advertising

Source. Calculated by the authors using data from questionnaire survey

Table 3

Discrimination Validity (Fornell and Larcker's Criteria) and HTMT Ratio

Constructs	1	2	3	4	5
1. EC	0.858	0.79	0.486	0.775	0.734
2. GPB	0.485	0.826	0.557	0.866	0.803
3. GWU	0.350	0.376	0.774	0.583	0.583
4. PNS	0.502	0.515	0.406	0.856	0.729
5. RGC	0.496	0.511	0.291	0.488	0.734

Notes. Diagonal italics represents the square root of AVE. The correlations between the constructs' values are shown below the diagonal elements, while the HTMT values are displayed above the diagonal elements; EC = Environmental Consciousness; GPB = Green Purchase Behavior; GWU = Greenwashing Understanding; PNS = Personal Norms; RGC = Receptivity to Green Advertising

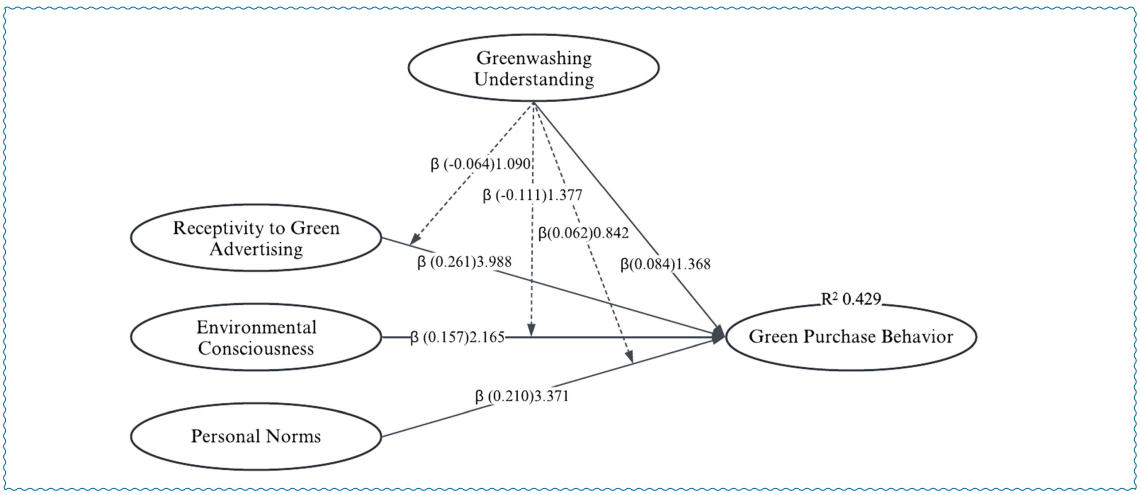
Source: Calculated by the authors using data from questionnaire survey

Structural Model

The path analysis was conducted using structural equation modeling (SEM) with Smart-PLS version 4.1.0.2. To ensure the absence of multicollinearity, variance inflation factors (VIFs) were examined. The findings indicated VIFs lie within the range of 1.161 to 1.981, which is below the common cutoff point of 10, indicating no multicollinearity issue (Hew & Kadir, 2016). Since the data set has no multi-collinearity issues and the data distribution is non-normal, the researcher estimated the structural model.

Figure 3

Structural Model (Bootstrapping of 5,000)



Note: Created by the Authors

In the Table 4, H1 examines whether GWU negatively influences GPB. The results indicate that GWU has no significant impact on GPB (β = 0.084, t = 1.368, p < 0.05); therefore, H1 is not supported. H2 tests whether RGC positively affects GPB. The findings reveal a significant impact of RGC on GPB (β = 0.261, t = 3.988, p < 0.05). H2 is, therefore, supported. H3 examines whether EC positively impacts GPB. The results show a significant impact of EC on GPB (β = 0.157, t = 2.165, p < 0.05). H3 is, therefore, supported. Finally, H4 investigates whether PNS has a positive impact on GPB. The results indicate that PNS has a significant impact on GPB (β = 0.210, t = 3.371, p < 0.05). Therefore, H4 is supported.

Table 4

Results of Structural Model and Moderation Analysis

Hypotheses	Original sample (O)	Standard Deviation	T statistics	Decision
1. GWU → GPB	0.084	0.061	1.368	Not supported
2. RGC → GPB	0.261	0.065	3.988	Supported
3. EC → GPB	0.157	0.072	2.165	Supported
4. PNS → GPB	0.210	0.062	3.371	Supported
5. GWU x RGC → GPB	-0.064	0.058	1.090	Not supported
6. GWU x EC→GPB	-0.111	0.081	1.377	Not supported
7. GWU x PNS→GPB	0.062	0.073	0.842	Not supported

Note. EC = Environmental Consciousness; GPB = Green Purchase Behavior; GWU = Greenwashing Understanding; PNS = Personal Norms; RGC = Receptivity to Green Advertising

Source: Calculated by the authors using data from questionnaire survey

Moderation Analysis

In this paper, moderation analysis was conducted through the bootstrapping method, which incorporates bias-corrected confidence estimations (Preacher & Hayes, 2008). H5 examines whether GWU moderates the effect of RGC on GPB. Table 4 shows that the result highlighted an insignificant influence of RGC on GPB with GWU (β = -0.064, t = 1.09, $p < 0.01$). H5 is, therefore, not supported. Similarly, H6 tests whether GWU moderates the impact of EC on GPB. The result revealed an insignificant effect of EC on GPB with GWU (β = -0.111, t = 1.377, $p < 0.01$). H6 is, therefore, not supported. Finally, H7 investigates whether GWU moderates the influence of PNS on GPB. The result revealed an insignificant effect of PNS on GPB with GWU (β = 0.062, t = 0.842, $p < 0.01$). H7 is, therefore, also not supported.

Results and Discussion

This paper aims to investigate the moderating role of GWU in relation to RGC, EC, and PNS with GPB among green consumers in the Kathmandu Valley. The findings revealed an insignificant moderating impact of GWU in the relationship between GPB and its antecedents, indicating that GWU does not meaningfully influence consumers' purchase decisions in the Kathmandu Valley. Drawing from the theory of planned behavior (TPB) and the stimulus-organism-response (S-O-R) model, and attitude-behavior-context (ABC) theory, this paper tested hypotheses and contributed valuable insights to the existing body of literature.

First, this paper found an insignificant influence of GWU on GPB. This result is consistent with several studies done in a similar context (e.g., Ha et al., 2022; Utami et al., 2022). This surprising finding could be the result of several circumstances. One of the major possibilities for this outcome could be that consumers in the Kathmandu Valley have limited knowledge or understanding of greenwashing and its implications. Utami et al. (2022) noted that consumers' inability to distinguish genuine eco-friendly practices from deceptive ones leads to misguided purchases. Further, other factors that were not investigated in this paper may have a potential impact on consumers' propensity to make green purchases. When it comes to choosing green products, factors such as price sensitivity, accessibility to sustainable products, or cultural influences may have a notable impact on consumers' purchase decisions.

Second, this paper found a significant influence of RGC on GPB among consumers in Kathmandu Valley. The finding is consistent with previous studies in green contexts, such as Do Paco et al. (2020) and Jog and Singhal (2020). This implies that environmentally aware consumers in Kathmandu Valley are influenced by green messages from firms when making purchasing decisions. They attentively focus on green messages, and increased receptivity to such advertisements positively impacts their green attitudes and purchase decisions for green products. Further, consumers are acting in a more ecologically friendly way as a result of their increased awareness of the impact of their consumption patterns (Vlastelica et al., 2023). Firms' use of communication or green advertising efforts intended for consumers could be an important factor in this change. In line with the TPB (Ajzen, 1991), the finding suggests that consumers in Kathmandu Valley could absorb green messages, providing valuable insights for firms when creating green advertisements.

Third, this paper found a significant influence of EC on GPB among consumers in Kathmandu Valley. The result is consistent with previous studies in green contexts (e.g., Akehurst et al., 2012; Fontes et al., 2021; Jog & Singhal, 2020). This suggests that environmentally conscious consumers in Kathmandu Valley are more inclined towards making green purchase decisions. When consumers are more aligned with environmental protection, they develop a positive attitude towards the consumption of green products, ultimately leading to green purchase behavior. Further, if consumers are concerned about the environment, they will engage in activities such as waste separation, recycling, and consuming less (Fontes

et al., 2021), with the intention of extending these behaviors to their purchase decisions. This result aligns with the S-O-R model of Mehrabian and Russell's (1974), indicating that witnessing environmental degradation can make consumers more environmentally conscious, which in turn encourages them to make green purchases.

Fourth, this paper found a significant influence of PNS on GPB among consumers in Kathmandu Valley. The result is consistent with previous studies in green contexts (e.g., Jhawar et al., 2023; Han, 2020). This implies that consumers are more likely to make positive green purchase decisions when they have stronger personal norms regarding environmental responsibility. Further, PNS promotes consumer decisions to purchase green products by triggering moral responsibilities and guilt (Jhawar et al., 2023). This finding aligns with the TPB (Ajzen, 1991), informing marketers that consumers are more inclined to prioritize sustainable decisions and actively look for environmentally friendly products when they feel strongly about their responsibility to the environment.

Finally, this paper found an insignificant moderating effect of GWU on the relationship between GPB and its determinants: RGC, EC, and PNS, among consumers in Kathmandu Valley. The insignificant findings could be attributed to the nature of the variables examined in the study. The study indicates that RGC, EC, and PNS are psychologically intrinsic factors, and an external factor such as GWU may not have an impact on these relationships (Nordlund & Garvill, 2003). Consistent with a previous study (Jog & Singhal, 2020), which also discovered insignificant results regarding the moderating effect of GWU on EC and PNS with GPB, this study emphasizes the strong commitment of consumers in Kathmandu Valley towards the consumption of sustainable or green products. Despite the potential for greenwashing to mislead consumers (Martínez et al., 2020), consumers in Kathmandu Valley have not shown important behavioral changes in response to greenwashing understanding. Additionally, since the concept of greenwashing is relatively new for Nepali consumers, the insignificant results indicate that factors such as low levels of greenwashing understanding in Kathmandu Valley and limited access to information could be major reasons behind this outcome.

Conclusion

The growing emphasis on environmental sustainability has increased consumers' green purchasing awareness, and businesses have the potential to adopt greenwashing to cope with it. This paper addresses how consumers in the Kathmandu Valley perceive greenwashing and its impact on their green purchase behavior.

The findings suggest that despite high receptivity to green advertising, environmental consciousness, and personal norms, consumers in the Kathmandu Valley may need more time to fully grasp the concept of greenwashing, limiting its direct influence on their purchasing decisions. However, the study indicates that effective green advertising aligned with consumer beliefs can positively impact attitudes and intentions toward green products, especially among environmentally conscientious consumers.

To empower consumers to make informed choices and support efforts to reduce ecological harm and promote sustainability, educating the public about greenwashing is crucial. Businesses should focus on genuine sustainability practices and transparent communication to build consumer trust, rather than relying on misleading green claims.

Policymakers and regulators also have a vital role to play in establishing clear guidelines and enforcement mechanisms to curb greenwashing and incentivize authentic environmental stewardship. By addressing the challenges posed by greenwashing, businesses, consumers, and policymakers in the Kathmandu Valley can work together to foster a more sustainable future.

Implications of the Study

Theoretical implications

This paper contributes to the theoretical front of literature. Firstly, research on the moderating

effect of GWU on relationships between RGC and GPB, EC and GPB, and PNS and GPB is limited in developing countries, highlighting the novelty of the greenwashing concept. Investigating these dynamics enriches understanding of consumer green purchase behaviour literature. Secondly, it enhances green marketing literature in Nepal by providing insights for marketing managers and practitioners. Thirdly, employing PLS-SEM with Smart PLS software addresses methodological gaps. Finally, the study presents a comprehensive framework using TPB, S-O-R, and ABC models, offering guidance for future research exploring the mediating and moderating roles of additional variables.

Managerial Implications

This paper holds significant managerial implications. First, persuasive messaging can influence consumer attitudes, intentions, and behaviour towards sustainable consumption. Businesses should craft advertisements highlighting the environmental benefits of their green practices, leveraging the vital link between receptivity to green advertising (RGC) and green purchase behaviour (GPB). Second, environmentally conscious consumers seek companies that transparently promote the ecological advantages of their products. Marketers can align messaging with these benefits to enhance consumer interest and commitment to green products. Third, businesses should develop eco-friendly products that resonate with consumers' norms for environmental responsibility, ensuring they meet sustainability standards. Addressing greenwashing through transparent communication builds trust and fosters sustainable consumer relationships, ultimately supporting sustainable development goals (SDGs).

Limitations and Directions for Future Research

This paper makes a significant contribution to this area of literature but warrants caution. Future research could enhance precision through experimental designs or more comprehensive frameworks to mitigate survey response bias. Conducting cross-cultural studies across Nepal would enhance generalizability beyond Kathmandu Valley (Kathmandu, Bhaktapur, Lalitpur). Expanding respondent demographics beyond the 18–30 age group would enrich future studies.

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