



Effect of green marketing mix, green customer value, and attitude on green purchase intention: evidence from the USA

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Abstract

The undertaken research examines the impact of green attitude, green customer value (e.g., environmental image and perceived value), and green marketing mix (e.g., product, packaging, price, promotion, and place) on green purchasing intention. The research has integrated fundamental theoretical approaches of customers' purchasing such as attitude-behavior context (ABC) theory, signaling theory, and theory of planned behavior (TPB) in the modified conceptual framework. Additionally, this research has also incorporated the green psychological benefits (e.g., nature experience, self-expressive, and warm glow) as mediating construct. The modified conceptual framework also unified green marketing (e.g., environmental advertising and green word of mouth) as moderator to investigate further the connotation between attitude, green customer value, green marketing mix, and green purchase intention. The survey method is used to collect data with a sample size of 896 customers that are well-versed with eco-friendly green products and services from the different urban centers of the USA. The data is analyzed through a structural equation modeling (SEM)-based multivariate approach by using SPSS 26, AMOS 26, and conditional process modeling software. The findings have demonstrated a positive and significant impact of green customer value, green marketing mix, and attitude on the green purchase intention of US customers. The study has further concluded that the green psychological benefits (mediator) and green advertising (moderator) have a significant influence on a relationship between attitude, green customer value (environmental image and perceived value), green marketing mix, and green purchasing intention. The results of this research can be helpful for researchers and academicians to get insight into theoretical approaches to green purchasing, and it can also be helpful for marketers to devise green marketing strategies to gain optimal competitive advantage in the long run.

Keywords Green attitude · Green customer value · Green marketing mix · Green marketing · Green psychological benefits · ABC theory · Signaling theory, TPB model

JEL Classification C12 · M3 · K32

Introduction

In today's era, there is much concern for the environment because of the environmental issues related to pollution, global warming, and unrecyclable solid waste (Nekmahmud and Fekete-Farkas 2020; Dawei and Wu 2022). It has made marketers and consumers more alert concerning the necessity of green products and marketing (Abbes et al. 2020;

Alsaad 2021). Shifting to green services and products is believed to be more costly, but it is for the short term, and things could be more favorable and cost-effective in the long run (Johnstone and Lindh 2022; Kumar and Ayodeji 2021; Omar et al. 2021). Ramli et al. (2020) establish that environmental issues are the primary concern of today's world and humans. The main environmental problems are the greenhouse effect, air pollution, and ecological imbalances with human-caused disturbances. It has raised the green marketing approach, but it is evident that researchers and academicians have no substantial contribution to green marketing. It is believed that consumption patterns do not entirely cause environmental issues (Dhewi et al. 2018); also, green purchasing is a solution in developing nations.

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The consumers' attitude and behavior toward green purchasing have flourished more for eco-friendly products and services due to environmental concerns (Amallia et al. 2021). For this purpose, today's customers are more attracted to those pro-environment responsible firms, which are providing eco-friendly products and services (Peluso et al. 2021; Quach et al. 2022; Shimul et al. 2022; Kim et al. 2014). Now, marketers are adopting the green marketing concept with the uprising environmental concern of customers, thereby gaining a competitive advantage in today's competitive era (Walia et al. 2019; Lee and Park 2013). Several studies highlight the green marketing activities as significant in all fields like green marketing segmentation, green marketing, green distribution (place), green supply chain, green packaging, green promotional performance, and organizational performance (Sun et al. 2021; Jermstiparsert et al. 2019). Therefore, organizational performance is related to market share, profitability, customer satisfaction, loyalty, and long-term competitive advantage. The firms which opt for green marketing strategies are advised to incorporate consistent pro-environment objectives in all their fields and activities, not just to promote green products, but also to gain customers' trust (Yusiana et al. 2021; Chen and Chang 2012). Even if customers already have a positive attitude toward green products, it does not mean they go for them (Sultan et al. 2020); regarding this matter, Carrington et al. (2010) advocate that "Customers do not walk what they talk"; it shows the attitude-behavior gap in customers' purchasing (Iweala et al. 2019). Thus, for this purpose, studies show that customers' intention to purchase could be dropped with inadequate information and fewer efforts from marketers to motivate and build customer trust and satisfaction (Shaw et al. 2021; Pham et al. 2019). Today, building a green marketing approach and knowing customers' needs seem like general study topics; similarly, there is an influence of environmental concern on customers' attitudes and behavior in environmental-related fields. Therefore, it has triggered the firms to focus on environmental issues in their operations to avail the advantages of green products and services for long-term sustainable growth. Another important factor that drives the green customer attitude and purchase intention is customers' green value; related to this issue, Kim et al. (2014) used the value-based adoption model (VAM) theory to analyze the impact of customer value on green purchasing intention. According to the symbolic and conspicuous consumption model, signaling theory is essential for green consumption (Amin and Tarun 2021; Aaker 2002). However, these studies have not analyzed the influence of green marketing, environmental concerns, green advertising, green word of mouth (GWOM), and green psychological benefits. Although, Keller and Fay (2012) demonstrated that green marketing is a current increasing factor that has enabled to adopt the green products for the environmental sustainability

and protection. The green marketing involves advertisements, sales promotion, and marketing strategies that can significantly influence the customers' green purchasing (Arora and Manchanda 2022; Agarwal and Kasliwal 2019). Besides green advertising, the green word of mouth can be used by green marketing as an informal and additional tool to gain the customers' trust towards green products and their consumption (Chen et al. 2015; Keller and Fay 2012). Jamal et al. (2021) and Kotler et al. (2014) demonstrated that creating awareness regarding environmental issues like pollutants, unrecyclable wastes, and global warming can be done through green marketing, and green marketing mix, and customers' green attitude and value can influence green consumption (Tarabieh 2021).

The previous research studies had not covered all the factors of green marketing; hence, this study covers some green marketing factors, such as green advertisements and green word of mouth, taken as moderators to justify the fact that more green marketing, if used, can influence more customers' green values, attitudes, and consumption. Similarly, "green psychological benefit" constitutes nature experience, self-expressive, and warm glow, which have also been used in the current study as mediating variables. Correspondingly, if the product provides customers with self-satisfaction and a warm glow, it can increase the customers' intention to purchase green products (Soelton et al. 2020). If customers get self-expressive, psychological benefits from the product can also increase green consumption (Chen et al. 2021; Ahmad and Thyagaraj 2015; Hartmann and Apaolaza-Ibáñez 2012). Besides, the psychological benefits derived from nature experience from advertisements can trigger customers' imagination, creating customers' attitudes, values, and pro-green purchasing behavior (Shimul et al. 2022; Shafiee and Shahin 2021; Hartmann and Apaolaza-Ibáñez 2012). The undertaken study covers the limitations of previous studies by including psychological benefits as mediators to analyze their influence on green attitude and customer value, and green marketing mix. Additionally, green marketing (e.g., green advertising and green word of mouth) analyzes its impact as moderating variables between exogenous and endogenous variables. The research also examines the signals responsible for customers' purchasing attitudes regarding green products and the environment. Therefore, the undertaken study provides multifold novelty and significance, which were not achieved in the previous studies. The novel conceptual framework also offers important theoretical and managerial implications. Moreover, this study incorporates the attitude-behavior context (ABC) theory along with the signaling theory to better analyze both mediating effects of psychological benefits and moderating influence of green marketing in a relationship between customer attitude, marketing mix and customer

value, and green purchase intention for the US customers, which could be achieved through theory of planned behavior (TPB) model, ABC theory, and signaling theory. The modified conceptual framework provides a comprehensive analysis of independent variables, for instance customers' green attitude, green customers' value (e.g., environmental image and perceived value), and green marketing mix (e.g., green product, green price, green promotion, green packaging, and green place). Additionally, the modified conceptual framework incorporated mediating variables, such as green psychological benefits (e.g., nature experience, self-expressive, and warm glow), moderating variable green marketing (e.g., environmental advertising and word of mouth), and their aggregate impact on customers' green purchase intention.

The research background, significance, and motivation of the study have provided us the research questions, which will be addressed and solved in the coming sections of the study. Therefore, we have formulated the following research questions to answer from the current study:

- How green marketing mix (e.g., green product, green price, green packages, green promotion, green place) influence the customers' green purchase intention?
- How green customers' value (e.g., environmental image and perceived value) and attitude influence the customers' green purchase intention?
- How green psychological benefits (e.g., nature experience, self-expressive, and warm glow) influence the exogenous variables and customers' green purchase intention as mediating variable?
- How green marketing (e.g., environmental advertising and word of mouth) influences as moderating variable between the exogenous variables and customers' green purchase intention?

The current research provides the answers of the above research questions, which is the crux of the novelty and significance of this research. The current study also provides significant theoretical and practical implications to the future researchers, academicians, and industry managers. Therefore, in the light of the findings and recommendations of the study, the managers may devise effective green marketing strategies for long-term sustainable growth.

The rest of the paper was arranged as follows: "Theoretical background" is in section two, "Hypotheses development" is provided in section three, "Material and methods" are discussed in section four, and "Estimations and findings" are provided in section five. "Discussions and conclusion" are provided in section six, "Theoretical implications" are discussed in section seven, "Managerial implications" are provided in section eight, and in the end, we have provided

the "Limitations and future research recommendations" section in section nine.

Theoretical background

The signaling theory

The signaling theory describes how information is disseminated between two parties that are the sender and the recipient (Ahmad and Zhang 2020; Kingston and Paulraj 2021; Connelly et al. 2011). The theory explains that information between sender and receiver drives the behavior and decision-making of the stakeholders. Most of the economists and firms use the signaling theory in business and green marketing to disseminate information (Kashi 2019). Signaling theory suggests that appropriate information must be transferred between sender and receiver as most senders would have helpful information, but the receiver does not reach it. Therefore, insufficient and inappropriate information significantly impacts quality and content (Nguyen-Viet 2022). The senders are more concerned with the receivers' behavioral approach, and receivers are concerned with the uncertainty of information. Based on this theoretical approach, firms as senders transfer the information to a targeted consumer, and this signal can affect the behavior and attitude of the consumer. Thus, sending appropriate signals (signaling) can generate favorable results for firms regarding investments or selling (Chairunnisa and Perdhana 2020; Hussaina et al. 2020). For green marketing and consumption, the signaling theory can be taken as a framework to transfer the signals between firms and consumers.

Attitude-behavior context theory

The research uses the ABC theory to examine the relationship between consumers' behaviors and green purchasing (Sembiring 2021). The theoretical framework suggests that people act according to their expectations of particular actions (Goh and Balaji 2016). Thus, this theory identifies that people's attitude results in a particular behavior (Sugandini et al. 2020; Goh and Balaji 2016). The studies related to green marketing and purchasing have explored environmental, social, and climate change issues, and some studies have also incorporated the ABC theory in their models to get an insight into people's behaviors (Walia and Kumar 2021; Nguyen-Viet 2022). The study adopts the ABC theory and signaling theory as fewer studies have used two theories in their theoretical frameworks to explore the behaviors in green consumption. Therefore, the current study covers essential issues and their interrelationship, for instance, green attitude, green customer value, green marketing mix, and green purchase intention. Moreover, this theory attains

and explains the moderating effect of green marketing and mediating influence of psychological benefits in a relationship between exogenous and endogenous variables.

Theory of planned behavior

There are studies related to customers' behavior in purchasing implement psychological theories, and TPB is one of them, which suggests that particular beliefs lead to behavior. The TPB theory is developed by Ajzen (1991), which describes that people's belief and intention define their readiness for their actions and behavior. It means that intentions lead to individual behavior except for external intermediaries (Kingston and Paulraj 2021; Ajzen 2002). Several studies have used this theory in many fields, such as energy-efficient products, eco-friendly products, and green restaurants, to know the psychology behind consumers' purchasing (Al Zubaidi 2020). In previous studies, this theory has explained well about consumers' behavior and purchase intentions, but studies use only some parts of this theory; therefore, the fundamental factors of this theory are still crucial that perceived behavioral control, norms, and attitude. According to Chairunnisa and Perdhana (2020) and Scalco et al. (2017), the higher norms would lead to greater behavioral perceived control that eventually leads to intention for performing a particular behavior. The studies also employed those theories, which analyzed the drive for green purchasing intention, for instance, the TPB (Wang et al. 2022; Paul et al. 2016). The research has covered all the parts of TPB to analyze better understanding of human behavior regarding purchase intention in a particular situation.

Green purchase intention

Green behavior is very difficult to measure as it depends on the intention (Kashi 2019; Meier et al. 2019). The behavioral intention in terms of consumers shows their readiness to act on a particular purchasing behavior, and this intention could have negative and positive results (Diva 2020). Thus, if people intend to exert a particular behavior, the behavior is executed as an affirmative association between intention and behavior (Chairunnisa and Perdhana 2020; Ghofrani et al. 2017). Therefore, the green purchase intention coordinates with the behavioral intention, which means if consumers intend to purchase green products, they go for it, and this purchasing behavior can be called pro-environmental behavior. Regarding this, one of the studies by Meier et al. (2019) suggests that pro-environment behavior means people adopt such behavior, which is very concerned with the environment and making efforts not to harm the environment. Such efforts can be seen in the consumption of green products and proper management of the recycling of waste (Kalsi and Singh 2019). Hence, according to Nabilla (2019) and

Ghofrani et al. (2017), continuous green purchase intention of consumers leads to the green purchase behavior of consumers.

Hypotheses development

Green customer value and green purchase intention

Many studies, including Ramli and Maysari (2020) and Chen and Chang (2012), have evaluated the association between customers' perceived value and green purchase intention of customers. The customers' value is the beliefs that enable them to judge and make decisions (Alamsyah 2020). Green customer value is associated with pro-environmental behavior, and that is derived from environmental awareness and concerns (Nabilla 2019). Previous studies suggest that consumer behavior is not always derived from awareness of the environment and attitude (Kalsi and Singh 2019). Therefore, for this purpose, several studies examined the association between customers' values, attitudes, and consumers' behavior. Alamsyah et al. (2020) suggest that the environmental image of customer value leads to pro-environmental behavior of customers. Environmental image shows the excellent status of an organization in customers' mindsets and overall social settings, therefore changing the customer's values (Diva 2020; Appolloni et al. 2014). Environmental image is related to how much customers are concerned about environmental issues. According to one study, consumers are more prone to consuming green products when they have an attitude toward them and when they see their quality (Saputra et al. 2020). Thus, it can be concluded that pro-environment-oriented consumers consume eco-friendly green products that protect the environment (Chin et al. 2020; Amoako et al. 2020). Regarding customer decisions for purchasing, perceived value for the product is also an essential part of the customer value concept (Sharma and Klein 2020). According to Song et al. (2019) and Hänninen and Karjaluoto (2017), green perceived value is expressed as "the perception of customers regarding the green product characteristics, and its impact on the environment." Customers' green perceived value shows their assessment of the product as to how much it is valuable for an eco-friendly environment (Chairunnisa and Perdhana 2020; Chen and Chang 2012). Therefore, this factor is significant for environmental-oriented customers and helps make buying decisions (Chairunnisa and Perdhana 2020; Islam et al. 2019). Customers' purchase intention for green products is essential in the actual buying behavior of customers as it shows the readiness of customers to buy the valuable product, which is related to the perceived value attached to the product (Al-Gasawneh and Al-Adamat 2020). According to studies, for pro-environment customers, the perceived value of a product leads to buying green products

(Alamsyah et al. 2020; Ahmed et al. 2020; Suki and Suki 2019). From the above discussions and studies, the following hypothesis could be generated:

Hypothesis 1 (H1): The green customer value, including (a) environmental image and (b) perceived value, has a positive and significant relationship with green purchase intention.

Customer attitude and green purchase intention

Green attitude is one of the factors in the TPB model, which shows a consumers' view and assessment of something, leading to behavior (Chin et al. 2020). In terms of the customer purchasing concept, some studies, such as Liao et al. (2020) and Panda et al. (2020), suggested that customers' attitude toward green products would determine their behavior and plays an essential function in developing the green purchase intentions of customers for green services and products. Moreover, the consumers' attitude towards environmental issues describes their seriousness and non-seriousness towards environmental protection (Ahmad and Zhang 2020; Suki 2016; Chekima et al. 2016). Therefore, if customers have a pro-environmental attitude, they can be concerned with environmental protection and consume environmentally friendly services and products (Kalsi and Singh 2019; Chekima et al. 2016). Amoako et al. (2020) concluded a positive impact of customers' green attitude toward green purchasing intention; hence, attitude can build consistent behavior. From the previous literature and discussions, we have generated the following hypothesis:

Hypothesis 2 (H2): Green customer attitude has a positive and significant relationship with green purchase intention.

Green marketing mix

The green marketing mix is referred to eco-friendly marketing of products, which considers environmental protection, starting from development and promotion to distribution (place) of products. Marketers follow the strategies which are safe for the environment and also adopt the tactics in operations to improve quality and promote packaging of products in a manner which gives benefits to the environment (Soelton et al. 2020). Green marketing has become a more critical part of businesses (Sembiring 2021). Therefore, the green marketing mix in businesses is implemented to satisfy today's customers' need for safe products and protect the environment (Shaw et al. 2021). In this regard, one of the studies by Chen et al. (2015) elaborated on the main reasons for firms to opt for a green marketing mix: firstly, to get green opportunities, and secondly, to build the firm's

positive image, increase the product's value, get a competitive advantage, and follow the green trends. The firms follow green marketing mix strategies like pricing strategy, which is related to the company's policies, competition, law, and demand; integrated communication strategies; analysis of the market including segmentation and positioning and supply chain and distribution (place) strategies (Nguyen-Viet 2022). A green marketing mix is implemented through a marketing mix consisting of "5Ps," which encourages consumers to consume environmentally safe products (Ramli and Maysari 2020). Green marketing mix synchronizes product, packaging, pricing, and promotion, and places activities according to the organizational goal of maintaining environmental protection (Sembiring 2021; Groening et al. 2018). In the marketing mix, the first component is a green product, which means an environmentally friendly product made with less toxic raw materials and by pro-environmental organization standards (Vijaya 2020). Hence, green products are made for environmental protection as they are made with simple and minimum resources that can be recyclable, long-lasting, and suitable for the environment, creating less pollution (Misra and Singh 2016). Another component of the green marketing mix is green packaging, which is not harming the environment and can be recyclable and biodegradable. Regarding the perception of green packaging, some factors can affect consumers' purchasing (Nguyen-Viet 2022); for example, attitudes towards green purchasing and consumers' awareness of green packaging can influence the purchasing behavior of products with green packaging (Kingston and Paulraj 2021; Parkash 2019). Concerning the price component of the green marketing mix, an important study suggested that green products are high priced as customers need them and pay extra. However, another study explored that consumers lack knowledge regarding the procedure for making green products and why they are subjected to pay more for it (Jamal et al. 2021; Nuttavuthisit and Thøgersen 2017; Pettersson et al. 2016, Misra and Singh 2016). The extra charges for green products are costly in terms of their factors of production, which cannot be changed. Thus, consumers pay little more for the extended-lasting benefits of green products (Soelton et al. 2020). Green promotion is another component of the green marketing mix. Marketers promote the product by giving information about environmental benefits and suggesting ways to protect the environment; it can attract the most significant chunk of customers (Sembiring 2021; Ankit and Mayur 2013). Green promotion advertisements can be in the form of multifacet: firstly, showing the link between green products with environmental protection, and secondly, disseminating the pro-environmental lifestyle by adopting the green product, and lastly, advertisement shows the pro-environmental nature of the organization (Vijaya 2020; Grimmer and Miles 2017; Nuttavuthisit and Thøgersen 2017). Finally, the last "P" of the green marketing

mix is a place that means the proper distribution of products from producer to end consumer without harming the environment in between. In being environmentally responsible, organizations are more concerned with adopting all possible ways of distribution that are convenient to consumers and less harmful to the environment (Walia and Kumar 2021; Sugandini et al. 2020). Hence, the previous literature and discussions generated the following hypothesis:

Hypothesis 3 (H3): The green marketing mix, including (a) green product, (b) green packaging, (c) green price, (d) green promotion, and (e) green place, has a positive and significant relationship with green purchase intention.

Green psychological benefits as mediators

Psychological benefit is a feeling of satisfaction that improves the state of mind (Ahmad and Zhang 2020). It is derived from self-concept related to self-expressive benefits, which makes the person feel psychologically satisfied according to the symbolic and conspicuous consumption model (SCCM) and signaling theory (Aaker 2002). The self-expressive benefits in people's minds related to green products make the consumers more willing to make buying decisions (Alamsyah 2020; Hartmann and Apaolaza-Ibáñez 2012). Moreover, the warm glow and a positive mental state can build a sense of social responsibility in a consumer's mind (Sembiring 2021; Andreoni 1989). Therefore, Ahmad and Zhang (2020) suggested that a sense of being socially responsible has made people get satisfaction from helping others. The warm glow (psychological benefits) of social responsibility leads to pro-environmental behavior, and it continuously triggers people to behave as pro-environmental oriented today and in the future too (Hartmann et al. 2017). One study suggested that a warm glow drives mainly the current behavior of consumers, not the future one (Pelt et al. 2018). Nevertheless, according to Hartmann et al. (2017), warm glow-psychological benefits can also be the reasons for future consumer behavior. Therefore, this study uses psychological benefits as mediators that can influence the values and attitudes of consumers toward a green purchase behavior. Another vital factor for psychological benefits is nature experience which means that pro-environmental people are always related to nature for their mental and emotional state (Hwang and Choi 2017). The level of nature experiences develops the values and attitudes of consumers, related to pro-environmental behavior and consumption of green products. Consumers who are concerned with the environment and are connected to nature-related things are experienced with quality of life (Andereck and Nyaupane 2011). For this purpose, the nature experience rouses the awareness of environmental issues and acts as a mediator between the values and attitudes of consumers and green purchasing intention.

Consumers' positive brand attitude can be touched with pro-environmental marketing, thus serving the goal of green purchasing (Chairunnisa and Perdhana 2020). It is suggested by Hartmann and Apaolaza-Ibáñez (2012) that advertisements related to nature experiences can develop the brand attitude of consumers, hence leading to purchasing. Hence, nature experiences create environmental values and attitudes which influence pro-environmental behavior (Chen et al. 2021). Considering previous studies and the above discussions, we formulated the following hypothesis:

Hypothesis 4 (H4): Green psychological benefits, including (a) nature experience, (b) self-expressive, and (c) warm glow, mediate between green customer value (environmental image, perceived value attitude, and green marketing mix) and green purchasing intention.

Green marketing as moderator

Green marketing considers the environmental concerns in the promotion and is an essential factor in research today. The green marketing has become more important to get a competitive advantage and stable growth and brand image in consumers' minds, thus changing the consumers' decision-making (Liao et al. 2020; Ni 2022). A critical study on home appliances found that green marketing influences purchasing behavior of consumers (Solekah et al. 2020; Ahmad and Ilkay 2019). Green marketing consists of green advertising and green word of mouth, which both are the dire need of interest of firms today. Nabilla (2019) found green advertisement is a moderator between the price and quality of products and consumers' green purchasing behavior. Similarly, the pro-environment advertisements moderate the value and attitude of consumers towards green purchasing. Previous studies suggested that green advertising can influence customers' values toward eco-friendly products (Ramli and Maysari 2020). A study found that green advertising has made the customers pay higher, considering the quality and belief that the product is pro-environment in nature which benefits the environment (Pratiwi et al. 2018). Another factor of green marketing is GWOM, which is adopted by many firms today as it is considered an essential element in customers' decision-making (Chen et al. 2021, 2015). Kotler et al. (2014) believed that GWOM is a powerful marketing tool that conveniently gives consumers information about firms and products. Consumers take this marketing tool as reliable and credible than other tools (Genoveva and Samukti 2020) as the positive GWOM consists of a higher level of trustworthiness and integrity (Keller and Fay 2012). The studies have found that GWOM moderates consumers' values and attitudes toward green purchasing (Jaini et al. 2020). Shafiee and Shahin (2021) suggested that positive GWOM for a firm can influence the customers' trust and values

towards purchasing a firm’s products as GWOM is trustworthy. Thus, the information provided by GWOM is more likely believed by consumers, affecting values and attitudes and, significantly, buying decisions. Considering the previous studies, we have formulated the following hypothesis:

Hypothesis 5 (H5): Green marketing includes (a) environmental advertising and (b) GWOM moderate between green customer value (environmental image, perceived value attitude, and green marketing mix) and green purchasing intention.

Theoretical and conceptual framework

We have constructed a modified theoretical and conceptual framework for the current research by using the ABC theory, the TPB model, and the signaling theory. The current research has critically analyzed all the frameworks and variables used in previous studies concerning the undertaken study’s conceptual model. From the previous literature, we employed green customer value, attitude towards green products, and green marketing mix as independent variables, and green purchase intention as an outcome variable. Besides the direct relationship among the variables, the adapted conceptual framework also takes “psychological benefits” as a mediator and “green marketing” as a moderator. Therefore, the conceptual model shows this research’s overall objectives, significance, and novelty, which firstly evaluates the association of green attitude, green customer value, and green marketing mix with green purchasing, and secondly to find the mediating impact of psychological benefits (nature experience, self-expressive, and warm glow) and moderating impact of green marketing (environment advertising and GWOM) on green purchasing. Figure 1 demonstrates the theoretical and conceptual framework of the

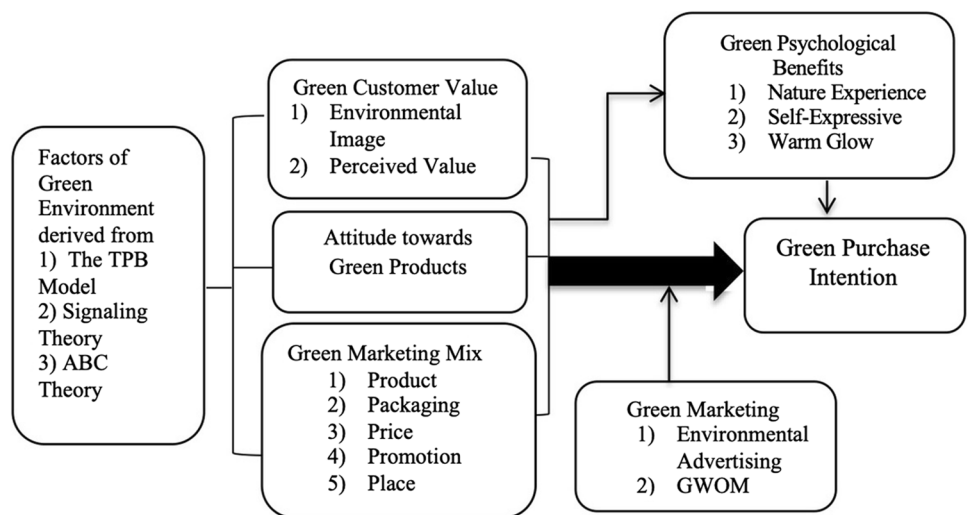
undertaken study. The conceptual framework of the study is provided in Fig. 1.

Material and methods

Design and data collection

The research design of the undertaken study is quantitative, explanatory, and causative, which examines the influence of green customer value, green marketing mix, and attitude on green purchase behavior. The data was collected through an adapted 5-point Likert scale questionnaire from the consumers of eco-friendly products and services. For the data collection, we used both online and in-person methods. Initially, we circulated 1000 questionnaires to the green products acquainted customers, but we received 950 questionnaires in which we found 896 responses were properly filled and completed. Hence, the response rate was 89.6%, which is considered good, the sampling period was from September 2021 to February 2022. The responses were collected from the consumers acquainted with pro-environmental behavior from the US urban centers, including Huston, Wisconsin, Virginia, Chicago, New York, Los Angeles, New Jersey, Miami, Washington DC, and San Francisco. For the in-person data collection, we traveled across the US urban centers and filled questionnaires at major superstores, including Target, Walmart, Kroger, and Costco. For the online data collection, we used social media sites, for instance, Google Docs, LinkedIn, Facebook, Instagram, and personal emails. Since the targeted population is unknown, we employed non-probability sampling techniques, i.e., purposive sampling, because we selected consumers accustomed to the pro-environmentally friendly products and services. We employed a quantitative, structural equation modeling (SEM)–based

Fig. 1 Conceptual framework of the study



multivariate approach (Dash et al. 2021). Therefore, we also check the normality of the data, which is a prerequisite for structural equation modeling.

Measurement scaling

The current study covers thirteen constructs measured with different scales taken from different studies. The items of green customer value (environmental image and perceived value) are taken from previous literature such as Kaur et al. (2022), Bailey et al. (2018), Kalsi and Singh (2019), and Appolloni et al. (2014). The items of the second independent variable, such as green customer attitude, are extracted from the studies of Kaur et al. (2022), Chin et al. (2020), Chen et al. (2019), and Ajzen (1991). The items of the green marketing mix (green product, green packaging, green price, green promotion, and green place) were adapted from the previous studies, for instance, Leonidou et al. (2013), Kautish et al. (2019), Sembiring (2021), Bailey et al. (2016; 2018), Shaw et al. (2021), Hossain and Rahman (2018), Mehraj and Qureshi (2020), Nuttavuthisit and Thøgersen (2017), Pettersson et al. (2016), and Misra and Singh (2016). The items of moderating variables such as green marketing (environmental advertising and GWOM) were taken from Kaur et al. (2022), Liao et al. (2020), Jaini et al. (2020), Chen et al. (2015), and Keller and Fay (2012). The items of mediating construct, such as green psychological benefits (warm glow), were extracted from Chen et al. (2019), Andreoni (1989), and Clark et al. (2003). The items of self-expressive were adapted from Chairunnisa and Perdhana (2020), Pelt et al. (2018), Aaker (2002), and Hartmann and Apaolaza-Ibáñez (2012). However, the items of nature experience were extracted from Andereck and Nyaupane (2011) and Maller et al. (2006). Lastly, the items of dependent variables, such as green purchase intention, were adapted from Kaur et al. (2022), Costa et al. (2021), Diva (2020), Kashi (2019), and Lai and Cheng (2016). The details of the measurement scaling sources and questionnaire are reported in Annexure Table 7.

Estimation techniques

For the analyses of fundamental characteristics of variables, we employed descriptive statistics, for instance, mean, standard deviation, skewness, and kurtosis. We employed the SEM-based multivariate approach for inferential statistical analyses, such as exploratory factor analysis, confirmatory factor analysis, and conditional process modeling (Dash et al. 2021). For the hypothesized measurement model analyses, we used factor analyses through SPSS 26 (factor loading, Cronbach's alpha, composite reliability and average variance extracted, KMO and Bartlett's, and total variance extracted methods). We evaluated the data's reliabilities and

convergent/discriminant validities to examine the hypothesized measurement model. We employed total variance explained, KMO, and Bartlett's methods for the data suitability and adequacy and construct validation. Finally, we used model fit indices through AMOS 26 software to examine the structural model, and lastly, for direct and indirect (mediating and moderating) relationship between the variables through conditional process modeling. We also generated the values for moderating, exogenous, and endogenous variables through model 1 of conditional process modeling and drew graphical analyses to prove the moderation.

Demographic analysis

The study has considered consumers, who are well acquainted with environmental sensitivity, and also took into account the green products, green marketing, and their impact on human life. Initially, we selected 1000 respondents, of which 950 consumers (respondents) agreed to participate in this study. Finally, we have received 896 complete and adequately filled responses. Hence, the response rate was 89.6% which is considered very good. We received 504 (56.3%) responses from males. However,

Table 1 Demographic analyses

Demographics		Frequency	Percent
Gender	Male	504	56.3%
	Female	392	43.7%
Marital status	Single	516	57.6%
	Married	354	39.5%
	Divorced	26	2.9%
Age (in years)	18–30	320	35.7%
	30–40	203	22.7%
	40–50	130	13.7%
	50–60	141	15.7%
	More than 60	109	12.2%
Education	High school diploma	387	43.2%
	Graduation	286	31.9%
	Post-graduation	144	16.1%
	Ph.D. degree	79	8.8%
Experience (in years)	1–5	241	26.9%
	5–10	270	30.1%
	10–15	125	14.0%
	15–20	119	13.3%
	More than 20	141	15.7%
Income (in PKR 000)	30–60	156	17.4%
	60–90	398	44.4%
	90–120	182	20.3%
	120–150	97	10.8%
	More than 150	63	7.0%
Total–N		896	

392 (43.7%) females participated in the study. The findings of Table 1 demonstrated the detailed demographic analysis of respondents.

Estimations and findings

Descriptive analyses

For the analyses of fundamental characteristics of variables, we employed descriptive statistics, for instance, mean, standard deviation, skewness, and kurtosis. For this purpose, data was changed into z-scores. These statistics show that the mean values of data are more significant than 3.50, which shows its significance, and the standard deviation and skewness values are between ± 1.5. Apart from this, the kurtosis values are observed between ± 3.0, which mean there is a normality pattern in the data (Ahmed et al. 2022). Therefore, the normality of data fulfills the requirement for other statistical techniques, enabling the researchers to go for an SEM-based multivariate approach using SPSS 26, AMOS 26, and conditional process modeling software. The findings of descriptive analyses are presented in Table 2.

Exploratory factor analyses (EFA)

For the validation of constructs and their items, we employed exploratory factor analysis; for this purpose, we used a rotated component matrix. For the validation of reliabilities and validities, we used factor analyses (factor loading-FL, Cronbach’s alpha-CA, composite reliability-CR, average

variance extracted-AVE). However, we also employed total explained variance, KMO, & Bartlett’s analyses for suitability and adequacy of data. Therefore, Table 3 demonstrates that the loading of each item is between 0.880 and 0.950, and readings of CA and CR are higher than 0.70, which validated the convergent validities of items and constructs. Similarly, the readings of AVE are higher than 0.50. Thus, discriminant validity is also met (Fornell and Larcker 1981). Hence, now it has been inferences that the validity and consistency of all items and constructs are achieved. The validation of the measurement model is achieved for all variables; hence, further investigation of the SEM-base multivariate approach could be carried out (Dash et al. 2021; Ahmed et al. 2020).

KMO & Bartlett’s analysis

The Bartlett’s sphericity and Kaiser–Meyer–Olkin (KMO) measures demonstrated the accuracy and suitability of the data sampling for the hypothesized model. The KMO measure exhibited a reading of 0.706, which is considered an adequate number as ranges of KMO between 0.70 and 0.79 are considered a satisfactory threshold (Štreimikienė and Ahmed 2021). Similarly, Bartlett’s sphericity values show $p < 0.05$ at a 5% confidence interval. Thus, it demonstrated a significant correlation between the variables of the study. Hence, the sampling adequacy and validations of all constructs have been achieved; therefore, now model could be used for the undertaken study, and we can proceed with further SEM-based multivariate analyses (Dash et al. 2021; Hair et al. 2019).

Table 2 Descriptive analyses

Variables		N	Mean	Std. deviation	Skewness		Kurtosis	
					Statistic	Std. error	Statistic	Std. error
Green purchase intention	Green purchase intention	896	3.79	1.080	−0.898	0.082	0.289	0.163
Green customer value	Environmental image	896	3.76	1.075	−0.822	0.082	0.201	0.163
	Perceived value	896	3.93	1.109	−0.957	0.082	0.319	0.163
Attitude towards green products	Attitude towards green products	896	3.89	1.011	−0.988	0.082	1.022	0.163
Green marketing mix	Product	896	3.96	1.121	−0.971	0.082	0.279	0.163
	Packaging	896	3.84	1.059	−0.938	0.082	0.543	0.163
	Price	896	3.50	1.043	−0.553	0.082	−0.360	0.163
	Promotion	896	3.79	1.063	−0.812	0.082	0.307	0.163
	Place	896	3.83	1.047	−0.942	0.082	0.610	0.163
Green psychological benefits	Nature experience	896	3.92	1.103	−0.952	0.082	0.340	0.163
	Self-expressive	896	3.86	1.071	−0.938	0.082	0.480	0.163
	Warm glow	896	3.90	1.092	−0.945	0.082	0.383	0.163
Green marketing	Environmental advertising	896	3.90	1.090	−0.943	0.082	0.394	0.163
	Green WOM	896	3.89	1.087	−0.942	0.082	0.405	0.163

Table 3 Measurement model

Factors	Items	FL	CA	CR	AVE	
Green purchase intention	GPI1	0.935				
	GPI2	0.882	0.916	0.943	0.841	
	GPI3	0.937				
	GPI4	0.899				
Green customer value:						
	a) Environmental image	EI1	0.926			
		EI2	0.901	0.924	0.946	0.855
		EI3	0.947			
	b) Perceived value	PV1	0.927			
		PV2	0.905	0.926	0.947	0.857
	PV3	0.946				
Attitude towards green products	AGP1	0.931				
	AGP2	0.904	0.927	0.948	0.859	
	AGP3	0.945				
Green marketing mix:						
	a) Product	PRO1	0.926			
		PRO2	0.904	0.919	0.944	0.842
		PRO3	0.930			
		PRO4	0.876			
	b) Packaging	PAK1	0.932			
		PAK2	0.904	0.928	0.949	0.860
		PAK3	0.947			
	c) Price	PRI1	0.931			
		PRI2	0.902	0.924	0.949	0.858
		PRI3	0.947			
		PRI4	0.893			
	d) Promotion	PRM1	0.928			
		PRM2	0.904	0.921	0.944	0.849
		PRM3	0.932			
e) Place	PLA1	0.923				
	PLA2	0.893	0.913	0.937	0.834	
	PLA3	0.924				
Green psychological benefits:						
	a) Nature experience	NE1	0.930			
		NE2	0.906	0.925	0.946	0.853
		NE3	0.936			
	b) Self-expressive	SE1	0.932			
		SE2	0.904	0.924	0.964	0.854
		SE3	0.937			
	c) Warm glow	WG1	0.929			
		WG2	0.902	0.921	0.943	0.848
	WG3	0.932				
Green marketing:						
	a) Environmental advertising	EA1	0.929			
		EA2	0.901	0.919	0.942	0.844
		EA3	0.927			
	b) Green word of mouth	GWOM1	0.926			

Table 3 (continued)

Factors	Items	FL	CA	CR	AVE
	GWOM2	0.894	0.913	0.937	0.833
	GWOM3	0.919			

Extraction method: principal component analysis; rotation method: varimax with Kaiser normalization

EI environmental image, PV perceived value, AGP attitude towards green products, PRO product, PAK packaging, PRI price, PRM promotion, PLA place

Mediating variables: NE nature experience, SE self-expressive, WG warm glow

Dependent variables: GPI green purchase intention

Moderating variables: EA environmental advertising, GWOM green word of mouth

Total variance explained

The statistics of total variance explained demonstrates a cumulative variance of fourteen variables is 86.018 (86.01%) against the cutoff value of 0.50 (50%), which shows a perfect reading for the analysis. Moreover, the eigenvalue of individual variables is more than one, which is also significant and exhibits the reliability and suitability of the overall data for the SEM-based multivariate approach and analyses (Dash et al. 2021; Ahmed et al. 2020).

Confirmatory factor analyses (CFA)

According to Hair et al. (2019), the CFA is a direct approach for analyzing the observed and unobserved variables and validating the hypothesized measurement model. The considered measurement model comprised of three independent variables such as green customer value (e.g., environmental image and perceived value), green attitude, and green marketing mix (e.g., green product, green price, green packaging, green promotion, and green place) along with three items each; however, green products and green price have four items each. Moreover, the model also incorporated mediating variable psychological benefits, which include three constructs (warm glow, self-expressive, and nature experience) with three items each. The moderating variable, green marketing, consists of two constructs (environmental advertising and GWOM) with three items each. Finally, the measurement model has one dependent variable, such as green purchase intention, with four items. Hence, the overall hypothesized measurement model has fourteen constructs, including forty-five items (Štreimikienė and Ahmed 2021). Table 6 shows the fit-indices values including measurement model, in which values are as follows: *GFI* = 0.97, *CFI* = 0.96, *RNI* = 0.99, *IFI* = 0.96, *NFI* = 0.94, *TLI* = 0.97, *PCFI* = 0.84, *PNFI* = 0.84, and *RMSEA* = 0.028; therefore, it demonstrates that all values are within the required range.

Hence, the considered hypothesized measurement model is valid for the green purchase intention in the case of US customers, which are eco-friendly customers.

Structure equation modeling

According to Dash et al. (2021) and Ahmed et al. (2022), the SEM approach is employed to examine the hypothesized structural model based on previous literature’s adapted models and theories. Since, the hypothesized structural model of this study consists of green purchase intention (dependent variable) with four items. However, the independent variable comprises green customer value (environmental image and perceived value), green attitude, and green marketing mix (green product, green packaging, green price, green promotion, and green place). After the data screening, every independent variable has three items in the hypothesized structural model except green product and green price that have four items each (Hair et al. 2019). Additionally, this study has taken mediating variables such as green psychological benefits, including three constructs (nature experience, self-expressive, and warm glow) and three items for each construct. Lastly, we incorporated the moderating variable, green marketing (environmental advertising and GWOM), with three items for the hypothesized structural model. Hence, the study has fourteen constructs, including forty-five items in our considered structural model (Ahmed et al. 2020). The fit-indices readings for the structural model in which values are as follows: $GFI = 0.96$, $CFI = 0.97$,

$RNI = 0.98$, $IFI = 0.97$, $NFI = 0.93$, $TLI = 0.98$, $PCFI = 0.83$, $PNFI = 0.85$, and $RMSEA = 0.029$ are within the threshold limit; therefore, it demonstrates that all values are within the required range. Hence, the considered hypothesized structural model is valid for the green purchase intention in the case of US customers who are pro-environmentally friendly.

Hypothesized direct relationship

The conditional process modeling examined the relationship between independent and dependent variables. Table 4 shows the direct relationship of the independent variables, including green customer value (environmental image and perceived value), green marketing mix (e.g., green product, green packaging, green price, green promotion, and green place), and green attitude with green purchase intention. Table 4 exhibits that environmental image, perceived value, attitude towards green products, green product, green packaging, green promotion, green price, and green place (distribution) have a positive and significant relationship with green purchase intention. If we consider the impact of each independent variable, it has been observed that “green perceived value” has the highest value of 0.2506, which means it has a more significant impact on green purchase intention, and the green packaging has the second highest value of 0.2240, then the green place has 0.1749, and followed by the green promotion, which has 0.1311. Thus, hypotheses H1a, H1b, H2, and H3a to H3e are accepted with 5% significance levels, i.e., $T > \pm 1.96$ and $p < 0.05$. Hence, it is finally

Table 4 Hypothesized direct relationship

Hypotheses	Independent variables	Dependent variable	Regression paths	Standardized regression weights (β)	SE	T	P	Decision
H1: Green customer values such as (a) environmental image and (b) perceived value have a significant positive influence on green purchase intention								
(a)	Environmental image	Green purchase intention	EI † → GPI	0.0812	0.0215	3.78	0.0002	Supported
(b)	Perceived value	Green purchase intention	PV † → GPI	0.2506	0.0241	10.39	0.0000	Supported
H2: Attitude towards green products has a significant positive influence on green purchase intention								
	Attitudes towards green products	Green purchase intention	AGP † → GPI	0.0496	0.0245	2.03	0.0431	Supported
H3: Green marketing mix such as, (a) green product, (b) green packaging, (c) green price, (d) green promotion, and (e) green place have a significant positive influence on green purchase intention								
(a)	Product	Green purchase intention	PRO † → GPI	0.0630	0.0231	2.73	0.0177	Supported
(b)	Packaging	Green purchase intention	PAK † → GPI	0.2240	0.0286	7.84	0.0000	Supported
(c)	Price	Green purchase intention	PRI † → GPI	0.0279	0.0109	2.57	0.0104	Supported
(d)	Promotion	Green purchase intention	PRM † → GPI	0.1311	0.0276	4.74	0.0000	Supported
(e)	Place	Green purchase intention	PLA † → GPI	0.1749	0.0220	7.93	0.0000	Supported

† predictor, EI environmental image, PV perceived value, AGP attitude towards green products, PRO product, PAK packaging, PRI price, PRM promotion, PLA place

Dependent variables: GPI green purchase intention

Table 5 Mediation analyses

Hypotheses	Mediation	Bootstrapping method				Normal theory method				
		Indirect effect	Boot SE	Boot LLCI	Boot ULCI	Indirect effect	SE	Z*	Prob.**	Decision
H4:	Green psychological benefits: mediator: M1: nature experience									
(a)	EI→NE→	0.3648	0.0213	0.3237	0.4064	0.3648	0.0200	18.21	0.0000	Supported
(b)	GPI	0.3299	0.0229	0.2837	0.3740	0.3299	0.0195	16.94	0.0000	Supported
(c)	PV→NE→	0.4462	0.0246	0.3995	0.4947	0.4462	0.0233	19.12	0.0000	Supported
(d)	GPI	0.3769	0.0225	0.3289	0.4291	0.3769	0.0201	17.35	0.0000	Supported
	AGP→									
	NE→GPI									
	GMM→									
	NE→GPI									
H5:	Green psychological benefits: mediator: M2: self-expressive									
(a)	EI→SE→	-0.0937	0.0239	-0.1391	-0.0455	-0.0937	0.0194	-4.82	0.0000	Supported
(b)	GPI	-0.1073	0.0150	-0.1382	-0.0792	-0.1073	0.0166	-6.46	0.0000	Supported
(c)	PV→SE→	-0.0471	0.0190	-0.0848	-0.0111	-0.0471	0.0199	-2.37	0.0177	Supported
(d)	GPI	-0.1102	0.0235	-0.1256	-0.0342	-0.1102	0.0198	-5.45	0.0000	Supported
	AGP→									
	SE→GPI									
	GMM→									
	SE→GPI									
H6:	Green psychological benefits: mediator: M3: warm glow									
(a)	EI→WG→	0.4554	0.0246	0.4080	0.5037	0.4554	0.0224	20.37	0.0000	Supported
(b)	GPI	0.4025	0.0249	0.3542	0.4518	0.4025	0.0225	17.87	0.0000	Supported
(c)	PV→WG→	0.5096	0.0261	0.4578	0.5593	0.5096	0.0241	21.12	0.0000	Supported
(d)	GPI	0.4215	0.0243	0.4225	0.5203	0.4215	0.0221	21.42	0.0000	Supported
	AGP→									
	WG→									
	GPI									
	GMM→									
	WG→									
	GPI									

Predictor: EI environmental image, PV perceived value, AGP attitude towards green products, GMM green marketing mix Mediating variables: NE nature experience, SE self-expressive, WG warm glow

Dependent variables: GPI green purchase intention

concluded that US consumers are more friendly towards the consumption of green products, and they are very concerned about environmental protection.

Mediation analysis

Conditional process modeling is also used for mediation analysis; Table 5 demonstrates the two methods of mediation analysis: bootstrapping method and the normal theory method. Bootstrapping method is a crucial method for finding mediation. The result shows no zero between Boot LLCI and Boot ULCI, meaning there is perfect mediation (Hayes and Rockwood 2020). Similarly, the normal theory method shows the value of $Z > \pm 1.96$ and $p < 0.05$; thus, it again validated the perfect mediation among the variables. Therefore, hypotheses H4a to H4d, H5a to H5d, and H6a to H6d are accepted. This analysis found that nature experience, self-expression, and warm glow significantly impact between exogenous and endogenous (green purchase intention) variables. For instance, green psychological benefits (nature experience, self-expressive, and warm glow) have a significant mediating effect between environmental image, perceived value, green marketing mix, and attitude toward green products and green purchase intention.

Hypothesized moderating relationship

The moderating relationship is also analyzed with conditional process analysis (Hayes and Rockwood 2020). Table 6 shows the significant impact of moderation of green marketing (environmental advertising and GWOM)

since $T > \pm 1.96$ and $p < 0.05$ in all the cases. The findings exhibited a significant moderating influence of environmental advertising and green word of mouth in a relationship between green customer value, attitude towards green products, and green marketing mix with green purchase intention. Thus, hypotheses H7a to H7d and H8a to H8d are accepted. The findings conclude that green marketing (environmental image and GWOM) can be essential for influencing consumers to adopt pro-environmental behavior and purchase green products. It can be helpful for marketers to promote green products to gain a competitive advantage and sustainable growth.

Conditional graphical evidence of moderation

According to Hayes and Rockwood (2020), it is also essential to prove moderation graphically. Therefore, Fig. 2a to h show that green marketing (environmental advertising and GWOM) has a significant moderating impact on the relationship between green customer value (environmental image and perceived value), green marketing mix, attitude towards green products, and green purchase intention. Every reading of moderating variable (red lines) changes the green purchase intention (green lines); however, exogenous variables (blue lines) are kept constant, which remains constant throughout the process of moderation. Hence, it is concluded that green marketing, including environmental advertising and GWOM, significantly impact between exogenous and endogenous (green purchase intention) variables.

Table 6 Moderation analyses

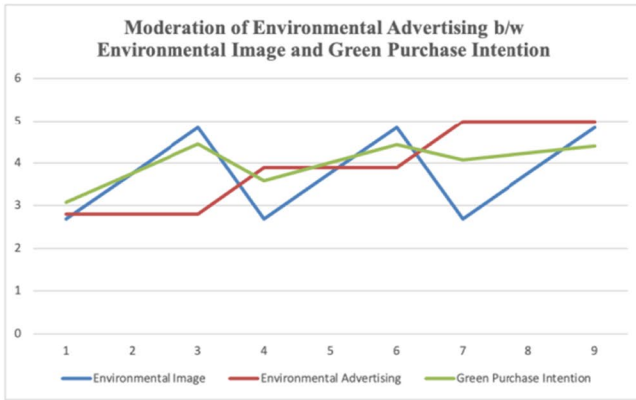
Hypotheses	Moderator	Moderation	Coefficient	SE	T	P*	LLCI	ULCI	Decisions
H7: Environmental advertising has a significant impact on customer value, attitude toward the green product, green marketing mix, and green purchase intention									
(a)	EA	EI x EA	0.2201	0.0135	-16.30	0.0000	-0.2466	-0.1936	Accepted
(b)	EA	PV x EA	-0.0711	0.0123	-5.76	0.0000	-.0953	-0.0468	Accepted
(c)	EA	AGP x EA	-0.1535	0.0145	-10.58	0.0000	-0.1819	-0.1250	Accepted
(d)	EA	GMM x EA	-0.1802	0.0142	-13.55	0.0000	-0.1877	-0.1542	Accepted
H8: Green word of mouth (GWOM) has a significant impact on customer value, attitude toward the green product, green marketing mix, and green purchase intention									
a)	GWOM	EI x GWOM	-0.1757	0.0148	-11.88	0.0000	-0.2047	-0.1467	Accepted
b)	GWOM	PV x GWOM	-0.1096	0.0111	-9.85	0.0000	-0.1314	-0.0877	Accepted
c)	GWOM	AGP x GWOM	-0.1491	0.0142	-10.53	0.0000	-0.1769	-0.1213	Accepted
d)	GWOM	GMM x GWOM	-0.1324	0.0150	-9.48	0.0000	-0.1521	-0.0979	Accepted

Where “x” denoted for the multiplicative sign; * Indicates rejection of Null Hypotheses at $p < 0.05$

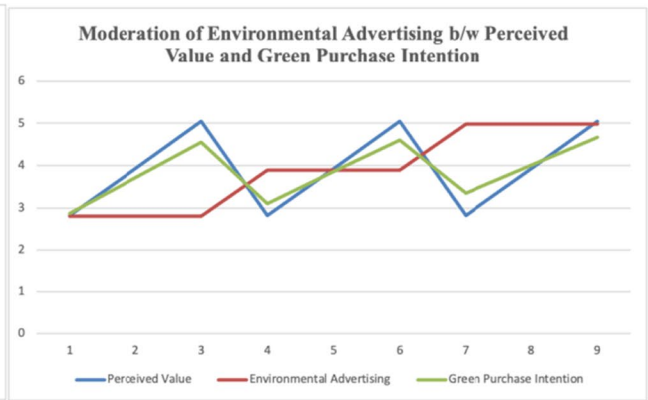
EI environmental image, PV perceived value, AGP attitude towards green products, GMM green marketing mix

Dependent variables: GPI green purchase intention

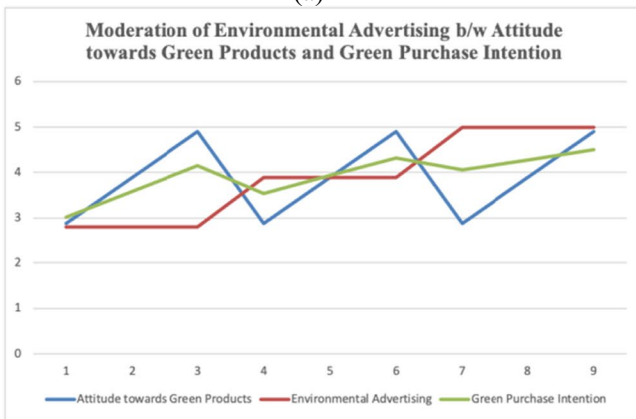
Moderating variables: EA environmental advertising, GWOM green word of mouth



(a)



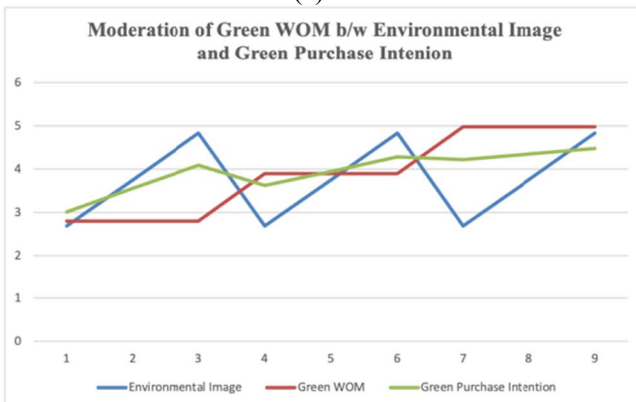
(b)



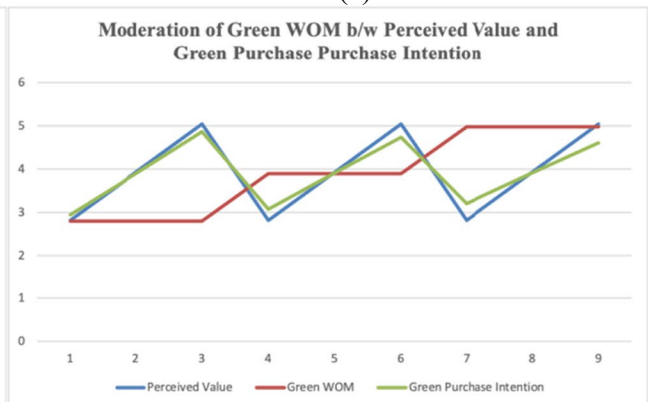
(c)



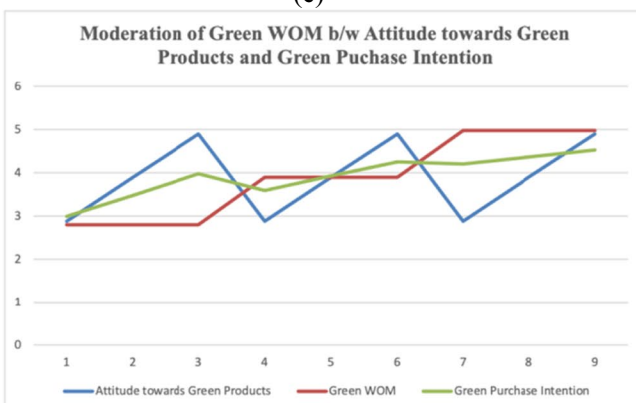
(d)



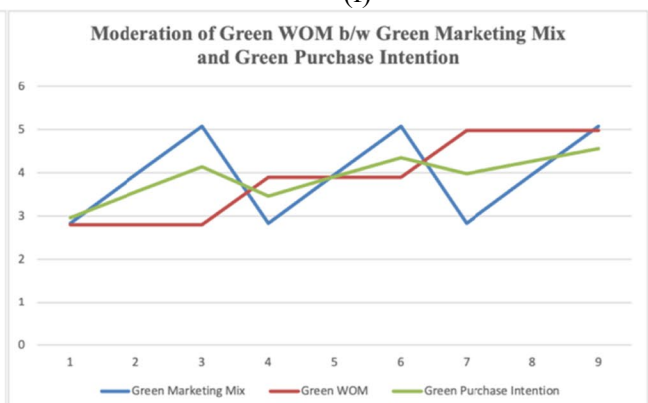
(e)



(f)



(g)



(h)

◀**Fig. 2 a–h** Moderation of environmental advertising and green word of mouth between green customer value, attitude towards green products, green marketing mix, and green purchase intention

Discussions and conclusion

The analyses of the study suggested that green customer value, including perceived value and environmental image, has a positive and significant relationship with green purchase intention in the case of US urban centers' consumers. Dhewi et al. (2018) also explored that customer's perceived value is a self-experience that ultimately depends on the situation, the people, and the product itself. The multidimensional approach suggests that customers' perceived value is a combination of different values which can influence a specific situation. The other studies have explored that perceived green customer value leads to pro-environmental behavior and can enhance the image benefit in customers' minds (Al Zubaidi 2020). The findings also demonstrated that a positive environmental image of customers increases their green consumption and creates a sense of social responsibility. Hence, the study suggests that customer value (environmental image) significantly affects green consumption, which is also harmonized with the analysis of Shimul et al. (2022) and Hänninen and Karjaluoto (2017). Secondly, the study has explored customers' green attitude and concluded that it had been a significant determinant that has a positive and cogent impact on green purchase intention. It means that the pro-environmental customers are more tilted towards eco-friendly products and environment protection. Similarly, the findings also demonstrated that the green marketing mix (e.g., green product, green packaging, green price, green promotion, and green place) has a positive and significant relationship with green purchase intention. Previous literature also exhibits that consumers with a green attitude and status oriented are more inclined to purchase green products and green packaging (Shaw et al. 2021; Amallia et al. 2021; Ahmad and Thyagaraj 2015).

Moreover, the study has concluded that there is a significant and positive mediating impact of green psychological benefits, for instance, warm glow, nature experience, self-expressive between independent variables (customer value, attitude, and green marketing mix), and green purchase intention and behavior. Remarkably, it suggests that people with a high level of perceiving the psychological benefits of green products are more inclined toward green consumption. According to Yusiana et al. (2021), Hartmann and Apaolaza-Ibáñez (2012) also confirmed that environmental protection's warm glow and other psychological benefits enhance purchase intention. Similarly, nature experiences can influence the attitude and values of customers toward green products. Wang et al. (2022) suggested that

consumers go for those products to which they have an emotional attachment. Hence, marketers need to see the customers' values related to environmental issues as it is a decisive element for their green purchasing behavior. Therefore, customers and firms must show their concerns and contribute positively to environmental issues to get a positive image and status in society (Sun et al. 2021; Ramli and Maysari 2020). Moreover, the third factor of psychological benefit is self-expressive, which enables customers to value green products. Thus, it leads to green consumption behavior (Arora and Manchanda 2022; Hwang and Choi 2017). The mediation findings have suggested that warm glow, nature experience, and self-experience have a significant and positive influence on the relationship of exogenous (green attitude, green customer value, and green marketing mix) and green purchase intention. Lastly, the findings of this research demonstrated that green marketing (environmental advertising and GWOM) as moderating variable has a significant impact between exogenous variables and green purchase intention (Shafiee and Shahin 2021). Thus, it is suggested that customer value, attitude, and green marketing mix have a stronger relationship with green purchase intention in the presence of moderating variables, for instance, environmental advertisement and GWOM. Previous literature such as Chen et al. (2021), Kao (2020), and Saboo et al. (2016) also suggested that environmental advertising has a significant influence between customer values and attitudes, green marketing mix, and green purchase intention, hence increasing the chances of consumption. Correspondingly, Solekah et al. (2020) and Chekima et al. (2016) concluded that green advertising increases the level of consumers to behave pro-environmental oriented, which motivates green purchasing. Similarly, GWOM has a significant moderating impact between the green attitude, the customer value and green marketing mix, and the green purchase intention. Consumers are more prone to rely on their surroundings' word of mouth, and it can change customers' attitudes toward green products and enhance their purchasing decisions. The GWOM is an effective tool because consumers' decision-making heavily depends on others' direct recommendations. Thus, marketers must focus on GWOM to promote green products (Vijaya 2020; De Medeiros et al. 2016).

Theoretical implications

For considering the study results, it is observed that undertaken theories are verified for considered modified conceptual framework. Therefore, the researchers can replicate this model for specific industries and products, which is an essential contribution to the study. Since behavioral theories like signaling theory, ABC

theory, and TPB model are verified with the analysis, these theories could be used while making consumer purchase intention models. Similarly, in the signaling theory, customers become more confident and doubtless towards products with the help of signals like green advertising and green word of mouth. The researchers can use the signaling advantage of green products, like signals provided to customers about the benefits of green products (Tarabieh 2021; Berger 2019). Besides this, other catalysts, including green marketing, such as environmental advertising and GWOM, can strengthen the customers' value, attitude, and green purchase intention (Soelton et al. 2020). Several studies have considered the GWOM as direct one-to-one verbal communication, and direct communication spreads information to customers regarding good or bad product experiences. Similarly, customers share positive product reviews, and positive wording is disseminated more hence leading to the willingness to consume by many buyers (Amin and Tarun 2021; Vijaya 2020; Chen et al. 2015). Moreover, the psychological benefit factors act as signals in terms of signaling theory, affecting customers' minds and emotional states, thus impacting green purchase intention.

Managerial implications

The undertaken study has drawn numerous practical and managerial implications. For example, this research suggests that firms need to focus more on green marketing as this has been proved as an essential tool to change the customers' values and attitudes and marketing mix toward green purchasing behavior. The study finds out that green advertisements have positively strengthened the pro-environmental nature of US consumers and enabling to adopt green product consumption behavior. Firms could create an affirmative environmental image and value of green products in the minds of consumers to enhance the customer's value towards green products through effective green advertisements and green word-of-mouth strategies. Besides, this study enables the firms to adopt better green marketing mix strategies for an eco-friendly environment. Regarding the psychological benefits factors, these could be incorporated into marketing strategies to impact the customers' values, green attitude, and green marketing mix towards green product consumption. The organization can adopt green strategies to fulfill its corporate social responsibilities toward a pro-environmental atmosphere for the next

generations. Moreover, from this study, the firms can get insight into moderating and mediating the role of green marketing and psychological benefits on customers' purchase intention. Accordingly, marketers can adopt such factors in their marketing strategies to gain a competitive advantage. Marketers can change the customers' values toward environmental concerns through effective green strategies. The current study can influence policymakers to promote green marketing programs and initiate pro-environmental campaigns to improve green purchasing and change customers' values towards protecting the environment. Policymakers can be more focused on the implementation of pro-environmental strategies. The government can also play a vital role in disseminating pro-environmental behavior through social media and mainstream media to influence consumers and industries to adopt the pro-environment nature and consequences of environmental issues. It is the only way to protect the environment when customers get to know about environmental issues; then, they adopt green products in their purchasing behavior.

Limitations and future research recommendations

The study has found many informative and valid results; however, this research has certain limitations and could be improved in future research studies. Firstly, this study has taken 896 sample sizes by using purposive sampling, which may not be sufficient to represent the whole population of the USA. Therefore, the results cannot be generalizable for an entire country or North American region. Thus, it is recommended that future researchers take a more appropriate sample from the entire North American region for more robust results. Future studies may also add more significant variables in a modified conceptual framework to carry out studies. Moreover, this study does not address the cause and effect between the variables. Therefore, it is recommended that future researchers employ cause and effect models while carrying out their studies (Štreimikienė and Ahmed 2021). Future research can develop a new model and analyze the motivation behind green purchasing. Another limitation of this study is that it has not taken a specific green product or service. Therefore, the results can be different for different products. Hence, it is also suggested to future researchers to take specific green products or services.

Annexure

Table 7 Questionnaire’s items and sources

Variables	Items	Statement	Source	
Green purchase intention	GPI1	I am willing to pay more for a green product, avoiding cheaper ones that harm the environment	Costa et al. (2021); Kaur et al. (2022); Diva (2020); Kashi (2019), Lai and Cheng (2016)	
	GPI2	I will consider buying green products, as they conserve energy resources		
	GPI3	I will consider buying green products, as they are recycled materials		
	GPI4	I have the perception that green products have more excellent added value, and therefore I am willing to pay more		
Green Marketing mix	Product	PRO1	Green products or services are solutions to environmental problems	Bailey et al. (2016); 2018); Hossain & Rahman (2018); Misra and Singh (2016)
		PRO2	The products I use must not harm the environment	
		PRO3	Green products or services are good for health	
		PRO4	The quality of green products or services is better	
Price	Price	PRI1	The ecological benefits justify the price of green products or services	Bailey et al. (2016); Hossain an Rahman (2018); Mehradj and Qureshi (2020)
		PRI2	Green product or services prices should be reasonable to motivate consumers to buy	
		PRI3	The price and quality of green products or services are proportionate	
		PRI4	The enhanced performance of green products or services justifies their price	
Place	Place	PLA1	Green products or services are regularly available nearby	Hossain and Rahman (2018); Leonidou et al. (2013); Kautish et al. (2019)
		PLA2	Green products or services are readily available nearby	
		PLA3	Green products or services are widely available in all places	
Promotion	Promotion	PRM1	I tend to pay attention to advertising messages about the environment	Hossain and Rahman (2018); Bailey et al. (2018); Misra and Singh (2016); Pettersson et al. (2016)
		PRM2	Consumers are facilitated by environmental advertisements to make informed buying decisions	
		PRM3	Green advertisements increase consumers’ awareness of the benefits of green products or services	
Packaging	Packaging	PAK1	Green packaging protect the environment	Sembiring (2021); Shaw et al. (2021); Nuttavuthisit and Thøgersen (2017)
		PAK2	I prefer to purchase green packaging products	
		PAK3	Consumers are enabled by green packaging for purchasing products or services	

Table 7 (continued)

Variables	Items	Statement	Source
Attitude towards green products	AGP1	It has become inevitable to protect the environment for future generations	Chin et al. (2020), Chen et al. (2019), (1991); Kaur et al. (2022); Ajzen (1991)
	AGP2	I know the environmental benefits of green personal care products and services	
	AGP3	I actively participated in an environmental campaign	
Green customer value	EI1	Environmental image is a key factor for any organizational existence and long-term sustainable growth	Kalsi and Singh (2019); Bailey et al. (2018); Appolloni et al. (2014)
	EI2	The environmental image could be enhanced by adopting environmentally friendly strategies, which also increase the overall organizational performance	
	EI3	Environmental image is an essential parameter for the employees, shareholders, and consumers	
Perceived value	PV1	Perceived value is an essential element for the long-term sustainable performance of any organization	Kaur et al. (2022); Kalsi and Singh (2019); Appolloni et al. (2014)
	PV2	I always believe on the perceived value of a product or service regarding an eco-friendly environment	
	PV3	Perceived value always plays an essential role to become a brand for any product and service	
Green Psychological benefits	NE1	Nature experience is very much linked with the eco-friendly environment that is vital for consumers, and other stakeholders	Andereck and Nyaupane (2011); Maller et al. (2006)
	NE2	Nature experience is directly linked with the environment related strategies, which are beneficial for both consumers and the organization	
	NE3	Nature experience always inspires me towards the buying of organic products and services	
Self-expressive	SE1	I always self-expressive to buy eco-friendly products and services	Chairunnisa and Perdhana (2020); Pelt et al. (2018); Aaker (2002); Hartmann and Apaolaza-Ibanez (2012)
	SE2	My personality does not accept the product or service that is hazardous for the environment	
	SE3	My purchase intention always triggers by the inner conscious that support the eco-friendly product or service	
Warm glow	WG1	Warm glow always can be achieved through buying eco-friendly products and services	Chen et al. (2019); Andreoni (1989); Clark et al. (2003)
	WG2	The pro-environmental strategies of any product or organization provide a significant sense of warm glow	
	WG3	Warm glow always be a significant psychological benefit of eco-friendly services and products' buying	

Table 7 (continued)

Variables	Items	Statement	Source
Green marketing	Environmental advertising	EA1 Financial growth can be achieved by using environmental advertising strategies as a core business strategy	Liao et al. (2020); Jaini et al. (2020); Kaur et al. (2022); Keller and Fay (2012)
		EA2 I always fascinate with the pro-environmental advertising campaigns	
		EA3 Pro-environmental advertising strategies convince me to buy eco-friendly products and services	
Word of mouth	WOM1	Word of mouth from family, friends and peers always convince consumers to buy eco-friendly products and services	Liao et al. (2020); Jaini et al. (2020); Chen et al. (2015); Keller and Fay (2012)
	WOM2	Consumers can receive the word of mouth through in person, electronically through social media that will alter their buying behavior	
	WOM3	Word of mouth significantly change my buying behavior intention regarding eco-friendly products and services	

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