

Determinants of Green Purchase Intention for Personal Care Products: An Extended TPB Study in Colombo, Sri Lanka

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Abstract

This study investigates the factors influencing green purchase intention (GPI) for personal care products (PCPs) among consumers in an urban Sri Lankan context – Colombo. Using an extended Theory of Planned Behaviour (TPB) model, this research examines the effects of key variables such as attitudes, subjective norms, perceived behavioural control, environmental knowledge, health consciousness, and price consciousness on GPI. Data were collected and drawn from a convenience sample of 385 through an online survey. The data were then analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that attitudes, environmental knowledge, health consciousness, and perceived behavioural control positively influence GPI, while price consciousness acts as a significant barrier. Subjective norms showed a weaker influence, highlighting an individualistic approach to green purchasing in the urban context of Colombo. This study contributes to the theoretical framework of GPI by integrating additional constructs relevant to developing economies. It also offers practical implications for policy-makers and marketers, emphasizing the need for consumer education, pricing strategies, and enhanced product accessibility to encourage sustainable purchasing behavior in emerging markets.

Keywords: Environmental knowledge, Green purchase intention, Health consciousness, Personal care products, Price consciousness, Theory of Planned Behaviour, Sri Lanka

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Introduction

The global market for personal care products (PCP) has experienced substantial growth, becoming an integral part of daily hygiene and lifestyle for individuals worldwide. Products such as shampoo, soap, toothpaste, deodorants, makeup, and fragrances are widely used to enhance appearance and maintain hygiene. The market for PCPs, valued at USD 157.74 billion in 2023, is projected to grow at an annual rate of 5.4% between 2024 and 2032 (USD 252.79 billion) (Personal Care Products Market Size, Share, Trends, Industry Analysis Report, 2023). However, despite the benefits they offer, PCPs also present substantial health and environmental challenges due to the presence of harmful chemicals like phthalates, heavy metals, parabens, and benzophenone (Chaudhary, 2018). Exposure to these chemicals has been associated with various health risks, including skin disorders, breast cancer, respiratory issues, and chronic conditions such as diabetes and infertility (Avenue et al., 2014; Moslehpour et al., 2023). Additionally, the disposal of PCP waste exacerbates environmental pollution, contributing to water, air, and soil contamination (Khalid & Abdollahi, 2021). Thus, increasing green product consumption is timely, particularly because irresponsible consumer purchases cause 40% of environmental damage (Joshi & Rahman, 2015).

The environmental impact of PCPs has triggered an increased focus on sustainable consumption and the promotion of green products; consumers' shift towards green products (or eco-friendly, organic, herbal, sustainable products) is part of a broader movement aimed at reducing the ecological footprint and mitigating health risks associated with conventional products (Zhuang et al., 2021). However, despite growing awareness and global movements advocating for greener practices, the adoption of green behaviour remains inconsistent across different cultural and economic contexts (Wijekoon & Sabri, 2021). Research has highlighted that while many consumers express positive attitudes toward green products, translating these attitudes into actual purchasing behaviour is often limited. This inconsistency points to the need for a deeper understanding of the factors influencing green purchase intention (GPI), especially in the context of developing Asian countries. The Asia-Pacific region, home to nearly 3 billion consumers, holds the largest market share in the global cosmetic industry (Zion Market Research, 2018). Although the global sales of green cosmetic products show increasing growth, eco-friendly cosmetics currently account for less than 15% of the total market value (Sadiq et al., 2021). This highlights the nascent state of the green cosmetic market and suggests significant consumer resistance to adopting these products. While extensive research has been conducted on consumer behaviour in other industries like the pharmaceutical, banking and manufacturing sectors, less attention has been given to understanding consumer behaviour in the context of the green PCPs industry (Jaini et al., 2020a, 2020b; Wijekoon & Sabri, 2021). This gap is significant, as sustainable PCPs have the potential to address both environmental and healthcare concerns.

Existing research on GPI has often been guided by the Theory of Planned Behaviour (TPB), which highlights attitudes, subjective norms, and perceived behavioural control as primary determinants (Wijekoon & Sabri, 2021). While these core components provide a useful framework, they may not fully capture the complexities of consumer behaviour (Kumar et al., 2019; Panda et al., 2019; A. P. Sharma, 2021), particularly in Asian markets, which are

predominantly collectivistic and emphasize social norms and communal values more than individualistic Western societies (Wijekoon & Sabri, 2021). In collectivistic cultures, social influence, religious values, and communal responsibility play a more pronounced role in shaping GPI. For instance, religious teachings in countries like India, China, and Malaysia align with values of environmental stewardship and can affect consumer attitudes towards green products (K. Sharma et al., 2023). Furthermore, the COVID-19 pandemic has reshaped consumer values, placing greater emphasis on health consciousness and environmental sustainability (A. P. Sharma, 2021). This shift underscores the importance of integrating previously understudied factors such as environmental knowledge, health consciousness, social influence, price consciousness, and green trust into models of GPI (K. Sharma et al., 2023; Wijekoon & Sabri, 2021).

Despite growing awareness and changing attitudes post-pandemic, the adaption of green PCPs remains limited in developing countries like Sri Lanka. In the Sri Lankan PCPs context, challenges mirror global concerns. The Colombo District, a major economic and populous city, reported an average monthly expenditure of LKR 385.93 per person on PCPs, such as soaps, lotions, toothpaste, shampoo, and cosmetics, in 2019 (Household Income and Expenditure Survey, 2019). However, using these products has been linked to increased personal health risks, while their disposal exacerbates environmental pollution and other negative effects in the country (Gamage & Mahagamage, 2024). Thus, this dual impact of PCPs – on human health and environmental sustainability – calls for urgent attention. However, green consumption behaviour in Sri Lanka remains limited. Research in Sri Lanka has indicated limited environmental awareness among consumers, leading to lower levels of green purchasing behaviour (Randiwela & Mihirani, 2015). Their green purchase intentions are further constrained by socio-economic factors such as price sensitivity, lower environmental responsibility, and limited marketing initiatives (Randiwela & Mihirani, 2015). This gap is significant as understanding the factors influencing consumer behaviour toward green products is essential for fostering sustainable consumption practices and addressing ongoing environmental issues (Moslehpour et al., 2023).

The findings of this study will have practical implications for enterprises and policymakers. By identifying the key factors influencing GPI, companies can tailor their marketing strategies and product development efforts to meet the growing demand for sustainable products. This shift could promote green consumer behavior, encouraging a move away from conventional purchasing patterns that contribute to environmental degradation. Furthermore, this research will provide valuable insights for government bodies and organizations, such as the Central Environmental Authority, to design policies that foster green consumption and support sustainable development initiatives. The study aims to bridge the gap between consumer awareness and action, contributing to a more informed and proactive approach to environmental conservation and public health in Sri Lanka.

The remainder of this article presents a comprehensive discussion encompassing the literature review, research methodology, data analysis, findings, and their implications for both theory and practice. It concludes with insights drawn from the study, acknowledging its limitations and offering directions for future research.

Literature Review

Theory of Planned Behaviour (TPB) – An Extended Version

The theoretical foundation of this study is mainly based on the Theory of Planned Behaviour (TPB), which has been widely used to explain and predict human behaviour, particularly consumer purchasing decisions and intentions. Developed by Ajzen (1991), the TPB posits that intention is driven by three main constructs: attitudes, subjective norms, and perceived behavioural control (PBC). Attitudes refer to an individual's positive or negative evaluation of performing a specific behavior, while subjective norms pertain to the perceived social pressure to engage or not engage in that behavior. PBC reflects an individual's perceived ease or difficulty in performing the behavior, which is influenced by past experiences and anticipated obstacles. While TPB has been effective in understanding consumer intentions, particularly in the context of green purchase intention, existing research emphasizes that it does not fully capture the range of factors influencing consumer decision-making, especially in specific cultural and economic contexts (Kumar et al., 2019; Panda et al., 2019; A. P. Sharma, 2021; Wijekoon & Sabri, 2021). To address this, the study proposes an extended version of the TPB that includes environmental knowledge (EK), health consciousness (HC), and price consciousness (PC).

Environmental knowledge refers to an individual's awareness of environmental issues and their impact on their consumption behavior. Integrating this construct into the TPB framework allows for a more comprehensive understanding of how knowledge contributes to shaping positive attitudes toward green products. Health consciousness is particularly relevant in the post-pandemic context, as consumers prioritize health in their daily choices and behaviors. Thus, those who are more health-conscious are likely to evaluate green products more favourably due to their perceived health benefits and lower chemical content (A. P. Sharma, 2021). Price consciousness is particularly important in developing countries, where economic considerations are a major factor and may sometimes limit the translation of intention into actual purchase (Wijekoon & Sabri, 2021). Thus, including PC in the TPB framework provides a more realistic picture of the study context. Therefore, in Sri Lanka's collectivist culture, additional constructs such as health consciousness, environmental knowledge, and price consciousness play critical roles that have been unexplored.

Thus, the extended TPB model proposed in this study aims to provide a more comprehensive framework for understanding GPI, especially in culturally specific and economically diverse contexts like those found in developing Asian countries. By incorporating these additional constructs – KC, HC, and PC –, the model addresses gaps in previous research and allows for a more nuanced exploration of the drivers and barriers influencing consumers' intentions to purchase green PCPs. Wijekoon and Sabri (2021), in their meta-literature analysis, found that these factors have a direct positive influence on GPI. This enriched theoretical framework offers practical insights for policymakers and businesses to design strategies that align with consumer values, promote sustainable practices, and bridge the gap between intention and behaviour.

Green Purchase Intention (GPI)

Purchasing intention is usually defined as a prerequisite for stimulating and pushing consumers to actually purchase products and services (Zhuang et al., 2021, p. 3). It is widely used

to predict the actual behaviour of consumers (Ajzen & Fishbein, 2005; Zhuang et al., 2021). GPI refers to the likelihood or willingness of consumers to choose and purchase products that are environmentally friendly or produced in a sustainable manner (Y. Chen & Chang, 2012). It reflects the growing awareness about the environmental impact of their buying decisions, driven by increasing concerns over issues like air pollution, climate change, and global warming (Zhuang et al., 2021). This concept has gained significant attention as environmental concerns and sustainability have become global priorities. GPI encompasses the factors that drive consumers to prefer green products over conventional ones, considering both personal and external influences (Wijekoon & Sabri, 2021; Zhuang et al., 2021).

Studies have shown that GPI is influenced by various factors, with attitudes, subjective norms, PCB, environmental knowledge, and health consciousness emerging as significant drivers (A. P. Sharma, 2021; K. Sharma et al., 2023; Wijekoon & Sabri, 2021). However, barriers as high prices, perceived risk, product availability, and limited trust in green claims can hinder the transition from intention to behaviour. GPI studies have been widely conducted in developed economies, where green practices are embedded in daily activities (K. Sharma et al., 2023). Thus, they emphasize that conducting more research on GPI is particularly important in developing countries, where socio-economic conditions, cultural values, and environmental awareness can significantly shape consumer behaviour. In collectivistic societies, such as those found in many Asian countries, social norms and communal values play a crucial role in influencing GPI. Thus, consumers may be driven by social expectations, religious values, and communal responsibility, which align with pro-environmental behaviour (K. Sharma et al., 2023). The COVID-19 pandemic has further influenced GPI, emphasising health consciousness and sustainability as essential considerations (A. P. Sharma, 2021).

Hypothesis Development

Attitudes and GPI

According to the TPB, attitude (ATT) is a key determinant of behavioural intention. Attitudes refer to an individual's positive or negative evaluation of performing a particular behaviour (Ajzen, 1991). Thus, it is beliefs about an object or a behaviour that can be translated into an act (Troudi & Bouyoucef, 2020). The more positive the attitude is towards a particular behavior more are the chances of an individual to perform that behavior (Ajzen, 1991). In the context of GPI, attitudes are shaped by consumers' beliefs about the benefits and outcomes associated with buying green products. When consumers perceive that purchasing green products contributes positively to the environment and aligns with their values, they are more likely to develop favourable attitudes, which in turn influence their intention (Y. Chen & Chang, 2012). Positive attitudes towards green products are often formed based on environmental knowledge, perceived health benefits, and the moral satisfaction derived from contributing to sustainability. Conversely, negative attitudes can stem from perceived drawbacks such as higher prices, limited availability, or doubts about the effectiveness of green claims. Therefore, fostering positive consumer attitudes through education, effective communication, and transparent product information is essential for promoting sustainable consumption behaviour (Matharu et al., 2021).

Most studies in the literature have reported that consumer attitudes positively and directly influence GPI (Wijekoon & Sabri, 2021), as they encompass the cognitive, affective, and behavioural components that drive decision-making (Yadav & Pathak, 2017). Thus, numerous studies support the positive relationship between consumer attitudes and GPI in different cultural contexts, for example (Arli et al., 2018; S.-C. Chen & Hung, 2016; Kang & Kim, 2013; Matharu et al., 2021; Y. T. H. Nguyen & Nguyen, 2020; Patel et al., 2020; Sreen et al., 2018; Sun & Wang, 2020; Troudi & Bouyoucef, 2020; Yadav & Pathak, 2016, 2017; Yeon Kim & Chung, 2011). Thus, this study proposes that,

H1: Consumer Attitudes are positively related to green purchase intention.

Subjective Norms and GPI

Subjective norms (SN) refers to the perceived social pressure an individual feels regarding whether they should or should not engage in a particular behaviour (Ajzen, 1991). This construct emphasizes how the opinions and expectations of significant others, such as family, friends, or society, influence an individual's behavioural intention. In the context of GPI, SN captures the influence of important referent groups on a consumer's decision to buy green products. If consumers believe that people whose opinions they value support sustainable and environmentally friendly consumption, they are more likely to adopt similar behaviours to gain approval or avoid disapproval (Ajzen, 1991; Arli et al., 2018; S.-C. Chen & Hung, 2016; Sun & Wang, 2020). Research has shown that in contexts where social conformity is valued, such as in collectivistic cultures, subjective norms play an even more pivotal role in shaping consumer intentions and actions toward behaviors like purchasing green products (Patel et al., 2020). In such societies, individuals may be more inclined to purchase green products if they perceive that it aligns with their social group expectations. Therefore, understanding SN within a specific cultural and social context is crucial for developing strategies that effectively promote green consumption.

Most research in the extant literature has supported that SN is positively related to GPI in several economic and societal contexts, for example (Arli et al., 2018; Bhatt & Bhatt, n.d.; Matharu et al., 2021; N. Nguyen et al., 2017; Sreen et al., 2018; Sun & Wang, 2020). In contrast, few studies, however, found an insignificant relationship between SN and GPI, for example (S.-C. Chen & Hung, 2016; Patel et al., 2020; Troudi & Bouyoucef, 2020). Given these contradictory findings, this study proposes that,

H2: Subjective Norm is positively related to green purchase intention.

Perceived Behavioural Control (PBC) and GPI

As Ajzen (1991) asserts in his TPB, perceived behavioural control (PBC) refers to an individual's perception of the ease or difficulty of performing a specific behaviour. It reflects the degree of control a person believes they have over engaged in behaviour based on their confidence in overcoming potential barriers and accessing necessary resources. High levels of PBC suggest that a person feels empowered to take action, while low levels indicate that perceived obstacles may hinder their intention and ability to follow through (Sreen et al., 2018;

Sun & Wang, 2020). Research indicate that PBC not only impacts the purchase intention but can also directly influence actual behaviour when the individual feels sufficiently confident in their ability to execute the action (Yadav & Pathak, 2017).

PBC plays a significant role in shaping GPI. Studies have shown that when consumers perceive that they have control over their green purchasing behavior, such as access to green products and sufficient financial means, their intention to buy these products increases (Yadav & Pathak, 2016, 2017). Conversely, low PBC, characterized by perceived challenges like high prices or limited product availability, can weaken GPI, even if attitudes and subjective norms are favourable. Thus, understanding the factors that enhance PBC can help in designing strategies to promote GPI by empowering consumers to act on their sustainable purchasing intentions. Most literature in the GPI context supported that PCB is positively related to GPI, for example (Arli et al., 2018; S.-C. Chen & Hung, 2016; Hosta & Zabkar, 2021; Matharu et al., 2021; Y. T. H. Nguyen & Nguyen, 2020; Patel et al., 2020; Sreen et al., 2018; Sun & Wang, 2020). Thus, this study hypothesizes that,

H3: Perceived behavioural control is positively related to green purchase intention.

Environmental Knowledge and GPI

Environmental knowledge (EK) refers to an individual's awareness and understanding of environmental issues, their underlying causes, and potential solutions to minimize negative environmental impacts. It involves several aspects encompassing factual information about environmental processes, awareness of the consequences of unsustainable practices, and comprehension of the actions that can be taken to mitigate environmental damage (Fryxell & Lo, 2003). Such knowledge plays a critical role in shaping pro-environmental attitudes and behaviours, as it enables consumers to make informed decisions that align with sustainability principles (Yadav & Pathak, 2016, 2017). Consequently, people's desire to act sustainably toward the environment increases when they are knowledgeable about environmental issues and their subsequent consequences (Amoako et al., 2020). Thus, the desire act environmentally friendly behaviour, is mostly influenced by environmental knowledge (Choi & Ng, 2011; Kautish et al., 2019; Mostafa, 2007).

Research has shown that individuals with higher levels of EK are more likely to develop positive attitudes toward green products, which in turn enhances their intention to engage in sustainable consumption practices (Yadav & Pathak, 2016). In fact, previous studies have reported that EK is positively related to GPI, for example (Ghazali et al., 2018; Göçer & Sevil Oflaç, 2017; Kaufmann et al., 2012; Singh & Verma, 2017; Wang, 2014; Yadav & Pathak, 2016).

H4: Environment knowledge is positively related to green purchase intention

Health Consciousness and GPI

Health consciousness (HC) refers to an individual's awareness of and concern for their health, which motivates them to make choices that promote well-being (Yeon Kim & Chung, 2011). It involves a proactive mindset, where individuals are willing to take actions that enhance their health and avoid behaviours or products that may pose health risks (Yeon Kim & Chung,

2011). Consumers with high health consciousness tend to critically evaluate products for safety, paying close attention to the ingredients and manufacturing processes to ensure they are free from harmful substances (Alam et al., 2022). In comparison, low health-conscious consumers may exhibit weaker purchasing intentions for green or organic products due to lesser emphasis on health-related factors (Singh & Verma, 2017). Thus, it is an internal motive that derives from one's attitude towards green purchase intention (Kareklas et al., 2014). Existing literature consistently highlights HC as a crucial driver influencing consumer behaviour, especially in purchasing organic or green products (Jonathan & Tjokrosaputro, 2022; Kareklas et al., 2014) and personal care products (Yeon Kim & Chung, 2011). In fact, high-HC consumers are more seriously concerned about the ingredients used to make those products in order to avoid potential health risks for quality of life than low-HC consumers.

Referring to the majority of prior findings, the GPI is significantly and positively related to HC (Alam et al., 2022; Jonathan & Tjokrosaputro, 2022; Kareklas et al., 2014; Mobrezi & Khoshtinat, 2016; Singh & Verma, 2017). This correlation is particularly pertinent for PCPs, where consumer awareness and consciousness should be heightened due to their direct application and influence on the human body (Yeon Kim & Chung, 2011). In contrast, Michaelidou and Hassan (2008) reported that HC is not significantly related to GPI. Given these, the current study hypothesizes that,

H5: Health consciousness is positively related to green purchase intention.

Price Consciousness and GPI

In addition to the three main factors of TPB, the extant literature emphasizes that price consciousness (PC) also has a greater influence on GPI and GPB (K. Sharma et al., 2023; Wijekoon & Sabri, 2021). Price consciousness refers to the degree to which consumers prioritize as a primary factor in their purchasing decisions. It plays a significant role in influencing purchasing behaviour, as high costs associated with green products can reduce consumers' ability and motivation to buy them (Singh & Verma, 2017). In fact, although consumers may have positive attitudes toward green products, higher prices can act as a barrier, limiting the translation of intention into actual purchase behaviour (Hosta & Zabkar, 2021; Wijekoon & Sabri, 2021). However, this effect can be mitigated when consumers have sufficient financial resources or perceive greater control over their purchasing ability, increasing consumer intention to buy those products (Sun & Wang, 2020).

Studies have shown that consumers often prefer lower prices and view the purchase of green products as a rational decision driven by personal benefit rather than environmental concern (Singh & Verma, 2017). Therefore, in the green purchase context, many studies supported the claim that price consciousness is negatively related to GPI, for example (Ahmetoglu et al., 2014; Singh & Verma, 2017; Sun & Wang, 2020; Wijekoon & Sabri, 2021). Thus, this study proposes that,

H6: Price consciousness is negatively related to green purchase intention.

Based on the comprehensive literature review, the study proposes the below research model (Figure 1) to assess the factors influencing GPI for PCPS in Sri Lanka, a developing country in the Asian region.

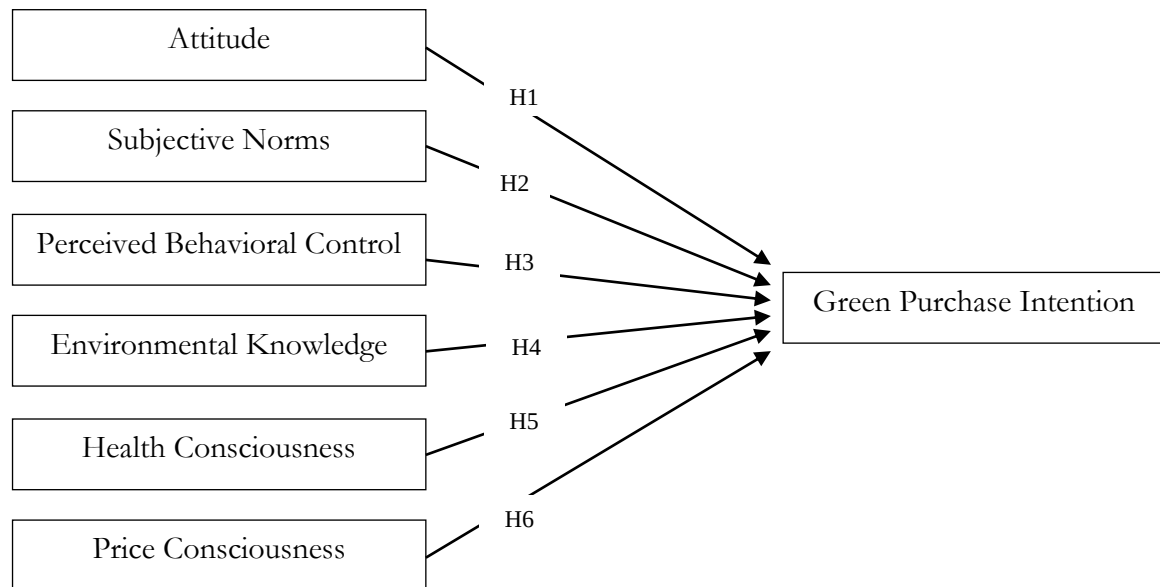


Figure 1. Research Model

Research Design

The study employed a quantitative research design using an online survey to collect data from individual consumers of PCPs in the Colombo District. The approach is suitable for examining statistical relationships between variables which have already been tested in the extant literature, enabling a comprehensive analysis of factors influencing GPI. The unit of analysis is individual consumers, ensuring that insights are tailored to understanding consumer behaviour specific to PCP users in an urban-developing country setting.

Measures

The study utilized multiple measurement items adapted from established scales in previous research to assess the constructs of interest. Minor wording adjustments were made to tailor the items to the specific context of this study – the personal care product industry. A five-point Likert scale (ranging from 1 – Strongly Disagree to 5 = strongly agree) was employed to measure each item. For EK, five items were adapted from Mostafa (2007) and HC (3 items) were measured using Hoang Yen & Hoang’s scale (2023). In measuring SN (3 items), PC (4 items), and GPI (4 items), the scale adapted by Wan & Sun (2020) was used. The scale used by Paul et al. (2016) was utilized to measure ATT (3 items). Finally, PBC was measured using scales adopted from Paul et al. (2016) and Sun & Wang (2020) (five items). Table 1 shows the measurement scales used in this study.

Table 1. Measurement Scale

Construct	Item	Source
<i>Attitude (ATT)</i>		
ATT1	I like the idea of purchasing green personal care products.	Paul et al., 2016
ATT2	Purchasing green personal care products is a good idea.	
ATT3	I have a favourable attitude toward purchasing green version of a personal care product.	
Subjective Norms (SN)		
SN1	Most of the people who are important to me support my purchases of green personal care products.	Sun & Wang, 2020
SN2	If purchase green personal care products, people who are important to me will also do so.	
SN3	Those who I think are valuable to me would refer me to buy green personal care products.	
Percived Behavioural Control (PCB)		
PBC1	I have enough time and money to buy green personal care products.	Sun & Wang, 2020 Paul et al., 2016
PBC2	I know where to purchase green personal care products.	
PBC3	I can decide whether to purchase green personal care products or not.	
PBC4	I have enough resources to purchase green personal care products.	
PBC5	I see myself as capable of purchasing green personal care products in future.	
Environmental Knowledge (EK)		
EK1	I know that I buy green personal care products and packages that are environmentally safe.	Mostafa, 2007
EK2	I know more about recycling than the average person.	
EK3	I know how to select green personal care products and packages that reduce the amount of waste ending up with landfill issues.	
EK4	I understand the environmental phrases and symbols on green personal care product packages.	
EK5	I am very knowledgable about environmental issues.	
Health Consciousness (HC)		
HC1	I choose carefully to ensure good health.	Hoang Yen & Hoang, 2023
HC2	I think of myself as a health-consciousness consumer.	
HC3	I often think about health issues.	
Price Conciousness (PC)		
PC1	For me, the price is the deciding factor when I purchase products.	Sun & Wang, 2020
PC2	Price is important to me when I decide to buy products.	
PC3	I usually try to buy products at the lowest price.	
PC4	I have to pay attention to the price when I purchase green products.	
Green Purchase Intention (GPI)		
GPI1	I will consider switching to green brands of personal care	Sun & Wang,

	products for ecological reasons.	2020
GPI2	I plan to spend more on green personal care products rather than conventional personal care products.	
GPI3	I expect to purchase green personal care products in the future because of its positive environmental contribution.	
GPI4	I definitely want to purchase green personal care products in the near future.	

Source: Authors' presentation

Sampling

The study sample comprises 385 individual consumers of PCPs, selected from the target population of approximately 2.45 million people in the Colomb District, Sri Lanka. Colombo was chosen as the focus of this research due to its status as the most populated and industrialized district in the country, as well as its significant consumption expenditure on PCPs, averaging LKR 385.93 per person per month in 2019 (Expenditure Survey, 2019). The sample size was determined using a sample size calculator provided by SurveyMonkey, ensuring an adequate representation of the target population for reliable statistical analysis (J. F. Hair, 2010). To achieve this, 500 consumers were initially approached, yielding 385 successful responses for the study.

Convenience sampling, a non-probability sampling technique, was adopted to select the sample. This method was chosen because the total population of PCP users in the Colombo District is not entirely known, and not all individuals can participate in the study, as recommended by Farrokhi & Mahmoudi (2012). The use of convenience sampling, while pragmatic, limits the generalizability of the findings. Thus, efforts were made to ensure demographic diversity by reaching the respondents who belong to diverse age, income, gender, and education groups in Colombo. This reasonably represents the diversity of the Colombo population.

Data collection

Data collection was carried out through a self-administered online survey distributed over a four-week period. The questionnaire was structured into three sections: part A focused on demographic information, Part B gathered data on consumers' usage and awareness of PCPs, and Part C contained Likert scale questions assessing the main IV and DV constructs. The survey was disseminated through various online channels, including WhatsApp groups, Facebook pages, groups related to PPs, and emails, allowing broad and diverse respondent reach across the Colombo District. This multi-channel approach minimized demographic bias and ensured comprehensive coverage of the target population (Hedt & Pagano, 2011). As a result, no data cleaning or modifications were required, and no outliers were identified.

Data Analysis

The current study is descriptive statistics and variance-based structural equation modeling (VB-SEM), also known as partial least squares SEM (PLS-SEM, as recommended by Hair et al.

(2022), for data analysis purposes. Descriptive statistics were applied to summarize the socio-demographic characteristics of respondents and to explore associations among the main variables, including EK, HC, PC, ATT, SN, and PBC, in relation to GPI. Confirmatory Factor Analysis (CFA) was performed to assess the validity of the measurement model, ensuring that the questionnaire items accurately represented the constructs of interest. VB-SEM was chosen for its flexibility in managing non-probability sampling and its ability to handle complex models' multicollinearity (J. Hair et al., 2022).

Findings and Discussion

Sample Characteristics

To describe the sample characteristics, respondents' gender, age, marital status, educational level, and income were used. Table 2 summarizes the demographics of the respondents.

Table 2. Demographic Characteristics of the Sample (N = 385)

Demographic	%	Demographic	%
Gender		Educational Level	
1. Male	44	1. Below O/L	6
2. Female	56	2. A/L & Diploma	33
Age		3. Degree	27
1. Below 25 Years	27	4. Postgraduate Degree	20
2. 26 – 35 Years	24	5. Professionally Qualified	14
3. 36 – 45 Years	29	Income Level	
4. 46 – 55 Years	16	1. Below LKR 50,000	42
5. Above 55 Years	4	2. LKR 50,000 – 74,000	28
Marital Status		3. LKR 75,000 – 99,000	15
1. Single	41	4. Above LKR 100,000	15
2. Married	51		
5. Other	8		

Source: Authors' presentation

In addition, respondents frequently purchase green products, with 44% doing so often and 15% almost always. Awareness of green products is generally high, with 40% rating their awareness as high and 9% as very high. Self-belief in GPI follows a similar trend, with most respondents feeling confident in their GPI.

Descriptive Statistics

Table 3 shows the descriptive statistics of the main constructs in terms of mean and standard deviation (SD) with correlations.

Table 3. Descriptive Statistics of Main Constructs

Variable	ATT	SN	PBC	EK	HC	PC	GPI	Mean	SD
ATT	1							3.8	.885

SN	.499**	1						3.7	.781
PBC	.525**	.822**	1					3.6	.778
EK	.523**	.754**	.774**	1				3.7	.758
HC	.534**	.533**	.528**	.596**	1			3.7	.765
PC	.436**	.567**	.662**	.617**	.492**	1		3.4	.735
GPI	.568**	.698**	.797**	.751**	.534**	.629**	1	3.7	.780

Source: Authors' estimation

Measurement Model Assessment

The measurement model was assessed through the confirmatory factor analysis (CFA) to assess the validity and reliability of the main constructs before testing the structural paths of the research model. This step is both theoretically and practically essential, as the conceptual framework of the current study was developed based on constructs and measurement scales established in previous literature (J. F. Hair, 2010). Cronbach's α , composite reliability (CR), and Rho (rho_A) were used to assess the construct reliability, and all were above the threshold value of 0.7 (Table 3), as recommended (J. Hair et al., 2022), confirming the construct reliability. Construct validity was assessed through convergent validity and discriminant validity. Average Variance Extracted (AVE) values and item loadings were used to assess the convergent validity. As shown in Table 4, the AVE values were above the benchmark value of 0.5 (J. F. Hair, 2010), and the item loadings were above 0.7, indicating a good convergent validity. However, one item from the SN and two items from the PBC scales had to be removed due to poor fit. As reported in Table 5, the square roots of AVE were all greater than the correlation coefficients of respective constructs, indicating that the construct had good discriminant validity. All Item Factor Loadings, CR, rho_A, and AVE are produced in Table 4. Discriminant validity was tested through the Farnell-Larcker criterion and the HTMT ratio. As shown in Table 5, the square roots of AVEs were all greater than the correlations among constructs, as recommended by Fornell & Larcker (1981), indicating that the construct had good discriminant validity.

Table 4. Construct Reliability and Convergent Validity

Construct	Item	Factor Loadings	Cronbach Alpha	Rho_A	CR	AVE
Green Purchase Intention (CPI)	GPI1	0.942	0.971	0.971	0.977	0.895
	GPI2	0.941				
	GPI3	0.947				
	GPI4	0.959				
	GPI5	0.940				
Attitude (ATT)	ATT1	0.927	0.901	0.903	0.938	0.836
	ATT2	0.929				
	ATT3	0.886				
Subjective Norm (SN)	SN1	0.930	0.909	0.912	0.943	0.846
	SN2	0.934				
	SN3	0.896				
Perceived Behavioural Control (PBC)	PBC1	0.923	0.958	0.959	0.967	0.856
	PBC2	0.940				

	PBC3	0.947				
	PBC4	0.942				
	PBC5	0.870				
Enviornmental Knowledge (EK)	EK1	0.879	0.932	0.932	0.938	0.786
	EK2	0.886				
	EK3	0.902				
	EK4	0.889				
	EK5	0.876				
Health Conciousness (HC)	HC1	0.911	0.891	0.892	0.932	0.821
	HC2	0.915				
	HC3	0.893				
Price Conciousness (PC)	PC1	0.825	0.911	0.919	0.938	0.790
	PC2	0.912				
	PC3	0.913				
	PC4	0.901				

Source: Authors' estimation

Table 5. Assessment of Discriminant Validity

Farnell-Larcker Criterion							
Variable	ATT	EK	GPI	HC	PBC	PC	SN
ATT	0.914						
EK	0.859	0.887					
GPI	0.910	0.802	0.946				
HC	0.866	0.867	0.922	0.906			
PBC	0.757	0.800	0.797	0.746	0.925		
PC	0.493	0.546	0.493	0.498	0.638	0.889	
SN	0.868	0.867	0.913	0.886	0.762	0.488	0.920

Source: Authors' estimation

Figure 2 shows the results of the path relationships of the structural model. It investigated how the selected variables – attitudes, subjective norms, perceived behavioural control, environmental knowledge, health consciousness, and price consciousness – influence the GPI for PCPs. To assess the robustness of the model and confirm the significance of the structural paths, bootstrapping with 5,000 re-samples was performed alongside blindfolding to evaluate predictive relevance. The model fit was assessed using the Standardized Root Mean Square Residual (SRMR) and the Normed Fixed Index (NFI), commonly used fit indices in PLS-SEM. The $SRMR < 0.08$ and $NFI > 0.90$ indicate the acceptable model fit to the data (J. Hair et al., 2022; Hu & Bentler, 1999). The $SRMR = 0.030$ and $NFI = 0.905$; thus, the model fit was accepted. The overall explanatory power of the model was assessed with the coefficient of determination (R^2), and the higher the value, the more variance was explained in the DV by the IVs. The model reported a high R^2 value of 0.932 (93.2%), indicating that 93% of the variation of the GPI is explained jointly by the factors of ATT, SN, PBC, EK, HC, and PC. Further, the predictive relevance (Q^2) of the model was assessed through blindfolding, evaluating how the model can predict the DV (GPI). A higher Q^2 value of 0.927 indicates that the model has strong predictive

accuracy in explaining GPI. Thus, all exogenous variables have a meaningful predictive relationship with GPI.

Structural Model Assessment

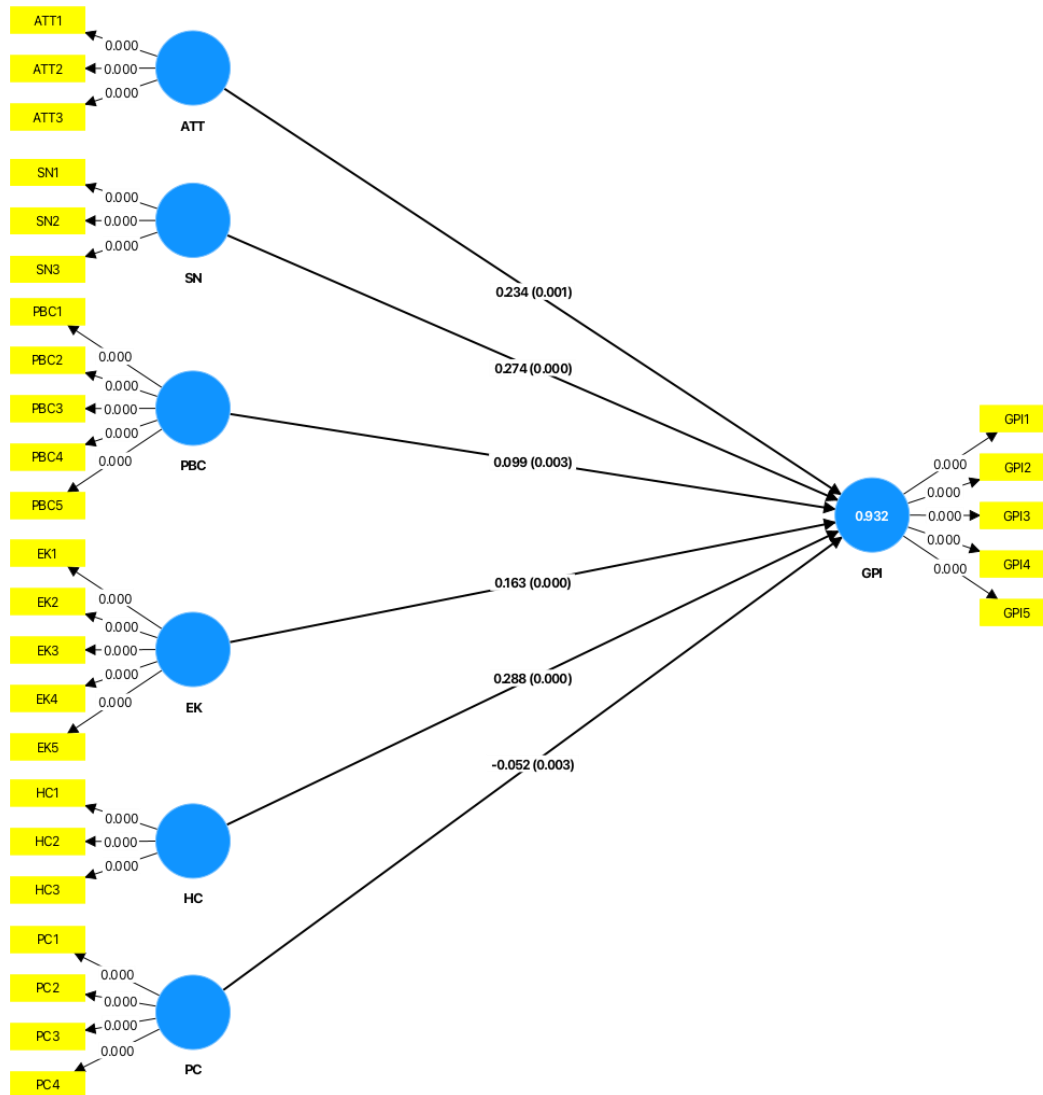


Figure 2. Structural Path Model

Table 6. Path Coefficient Results

Hypothesis	Path Coefficient	t-value	P-values	Decision
H1: ATT -> GPI	0.234	3.425	0.001	Supported
H2: SN -> GPI	0.274	5.325	0.000	Supported
H3: PBC -> GPI	0.099	2.941	0.003	Supported
H4: EK -> GPI	0.163	3.643	0.000	Supported
H5: HC -> GPI	0.288	6.012	0.000	Supported
H6: PC -> GPI	-0.052	-2.978	0.003	Supported

Source: Authors' estimation

These results indicate that attitude positively influences GPI for PCPs, with a significant effect ($p < 0.05$). This suggests that consumers with positive attitudes towards green PCPs are more likely to intend to purchase them. This finding supports H1 and aligns with previous research emphasizing the role of attitudes in driving PGI (Arli et al., 2018; S.-C. Chen & Hung, 2016; Kang & Kim, 2013; Matharu et al., 2021; Y. T. H. Nguyen & Nguyen, 2020; Patel et al., 2020; Sreen et al., 2018; Sun & Wang, 2020; Troudi & Bouyoucef, 2020; Yadav & Pathak, 2016, 2017; Yeon Kim & Chung, 2011). Subjective norms are also positively related to GPI for PCPs ($p < 0.05$), showing that social influence plays a role in encouraging consumers to engage in green purchasing. This supports H2 and aligns with (Arli et al., 2018; Bhatt & Bhatt, n.d.; Matharu et al., 2021; N. Nguyen et al., 2017; Sreen et al., 2018; Sun & Wang, 2020). Perceived behavioural control positively influences GPI for PCPs ($p < 0.05$), indicating that consumers who feel they have control over purchasing green PCPs, such as access and affordability, are more likely to intend to buy them. This supports H3 and is consistent with (Arli et al., 2018; S.-C. Chen & Hung, 2016; Hosta & Zabkar, 2021; Matharu et al., 2021; Y. T. H. Nguyen & Nguyen, 2020; Patel et al., 2020; Sreen et al., 2018; Sun & Wang, 2020). Thus, consistent with TPB, this study too re-confirms that all three factors – ATT, SN, and PBC – are predictors of GPI. In addition, environmental knowledge is also positively related to GPI for PCPs ($p < 0.05$), indicating that higher awareness of environmental issues is more inclined to GPI. H4 is thus supported, consistent with (Ghazali et al., 2018; Göçer & Sevil Oflaç, 2017; Kaufmann et al., 2012; Singh & Verma, 2017; Wang, 2014; Yadav & Pathak, 2016). Health consciousness has a significant positive effect on GPI for PCPs ($p < 0.000$), suggesting that individuals more health-conscious are more likely to purchase green PCPs over other chemical products. This result supports H5 and aligns with (Alam et al., 2022; Jonathan & Tjokrosaputro, 2022; Kareklas et al., 2014; Mobrezi & Khoshtinat, 2016; Singh & Verma, 2017). In contrast, price consciousness is negatively related to GPI for PCPs ($p < 0.05$), implying that highly price-conscious consumers are less likely to purchase green PCPs, likely due to their typically higher costs. This result supports H6 and is in line with prior research indicating the barrier that price can pose in GPI (Ahmetoglu et al., 2014; Singh & Verma, 2017; Sun & Wang, 2020; Wijekoon & Sabri, 2021). Thus, results support all the hypothesized relationships (H1 – H6), with attitude, subjective norms, perceived behavioural control, environmental knowledge, and health consciousness being positively related to GPI, while price consciousness is negatively related to GPI.

Additionally, the model was tested to assess the effect size, which measures the magnitude of a relationship between variables, providing a quantitative assessment of how much impact one variable has on another. Unlike p-values, which indicate statistical significance, effect sizes focus on the practical importance of findings. Table 7 presents the results of effect size. As it reveals, HC has the strongest influence on GPI for PCPs with a moderate-to-large effect size ($f^2 = 0.194$), highlighting its critical role in driving sustainable consumer behaviour. ATT and SN also exhibit moderate effects ($f^2 = 0.145$ and 0.172 , respectively), emphasizing the importance of positive perceptions and social influence. While KN, PBC, and PC show smaller effects ($f^2 = 0.063$, 0.040 , and 0.023 , respectively), they still contribute meaningfully to GPI.

Table 7. Effect Size (f2)

Variable	ATT	EK	GPI	HC	PBC	PC	SN
ATT			0.145				
EK			0.063				
GPI							
HC			0.194				
PBC			0.040				
PC			0.023				
SN			0.172				

Source: Authors' estimation

Discussion

The current study examined factors influencing green purchase intention (GPI) among personal care product (PCP) consumers in the Colombo District. The findings revealed that attitudes toward green products positively impact GPI, with effects appearing stronger among female and highly educated respondents. This aligns with research suggesting that educated consumers tend to exhibit greater environmental awareness, which may contribute to positive attitudes toward sustainable behaviours. Similarly, environmental knowledge was a significant predictor of GPI, with stronger effects observed in younger age groups (below 25 and 26-35 years), reflecting prior findings that younger consumers are often more engaged with environmental issues and proactive about sustainable consumption (Yadav & Pathak, 2016).

Health consciousness also significantly influenced GPI, particularly among middle-income consumers (LKR 50,000–74,000). This suggests that consumers in this income bracket, likely balancing health awareness with cost considerations, see green products as aligning with their health-conscious values. Conversely, price consciousness had a negative effect on GPI, particularly impacting lower-income respondents (below LKR 50,000). This is consistent with previous studies indicating that budget constraints can act as barriers to green purchasing among price-sensitive consumers (Sun & Wang, 2020).

Perceived behavioural control (PBC) positively affected GPI, with stronger effects observed among higher-income respondents (above LKR 100,000) and those in the 36–45 age group, who likely experience fewer barriers to purchasing green products. Finally, subjective norms also positively influenced GPI, though its effect was relatively modest, indicating that social influence plays a smaller role in driving green purchases among the Colombo respondents, perhaps due to individualistic tendencies in an urban setting.

Overall, these results highlight that GPI in Colombo is influenced by attitudes, environmental knowledge, health consciousness, and PBC. Demographic factors such as age, income, and education levels significantly shape green purchase behaviour. Younger consumers and higher-income groups displayed greater intentions to purchase green PCPS, highlighting the role of economic and cultural dynamics in urban Colombo. The findings underscore the

importance of targeting younger, health-conscious, and educated consumers and addressing cost-related barriers for price-sensitive groups to foster greater adoption of green products.

Implications for Theory and Practice

This study contributes to the theoretical understanding of green purchase intention (GPI) by extending the Theory of Planned Behavior (TPB) to include constructs such as environmental knowledge, health consciousness, and price consciousness. The findings support the value of an extended TPB framework in capturing a broader range of factors that influence GPI, particularly in the context of personal care products (PCPs). This study highlights that while traditional TPB constructs (attitudes, subjective norms, perceived behavioural control) remain relevant, additional factors like price consciousness and health consciousness significantly impact GPI, especially in developing economies with collective cultures. The results emphasize the need for a more nuanced theoretical model incorporating socio-economic and health-related factors, as these can play a critical role in shaping green purchasing behaviour in specific contexts.

For practitioners, the findings suggest several actionable strategies. Companies and marketers of green (or eco-friendly) PCPs can emphasize health benefits and environmental responsibility in their message to appeal to health-consciousness and environmentally aware consumers. Additionally, addressing cost barriers through pricing strategies or incentives, such as discounts and loyalty programs, could make green products more accessible to price-sensitive consumers. Enhancing consumer awareness through educational campaigns and improving product availability, especially in urban markets like Colombo, may also support sustainable consumption. By aligning marketing strategies with these insights, companies can more effectively drive green purchase behaviour and foster a shift toward sustainable consumption. Similarly, policymakers can encourage green purchasing behaviour by implementing public awareness campaigns to educate consumers about the environmental benefits of green PCPs. Additionally, offering tax incentives or subsidies for certified green products can help make these items more affordable, particularly for price-sensitive consumers. Establishing standardized green labelling will further support consumer trust and enable easy identification of green options. Collaborating with retailers to increase the availability of green PCPs in both urban and rural areas will improve accessibility, while financial incentives for businesses adopting sustainable practices can drive innovation and enhance the supply of green products in the market.

Conclusion

This study provides valuable insights into the factors influencing GPI among PCP consumers in the Colombo district. By extending the TPB to include additional constructs – such as environmental knowledge, health consciousness, and price consciousness – the research highlights the complexity of factors that shape consumers' intentions to buy green products. The findings reveal that attitudes, subjective norms, perceived behavioural control, environmental knowledge, and health consciousness positively influence GPI, while price consciousness serves as a barrier, particularly among price-sensitive groups. These results emphasize the role of consumer awareness, economic considerations, and perceived control in shaping sustainable purchasing behaviour.

For businesses, policymakers, and marketers, this study underscores the importance of tailored strategies to promote green products. Efforts to increase consumer education, improve product accessibility, and address cost-related barriers are essential to fostering greater adoption of green products. By addressing these areas, stakeholders can better support sustainable consumption patterns and contribute to environmental conservation efforts. Overall, this research contributes to the theoretical understanding of green purchasing behaviour and provides practical implications for encouraging sustainable consumer choices in developing markets.

Limitations and Future Research Directions

While this research offers valuable insights into GPI among consumers, it is important to acknowledge its limitations. First, this study focused on purchase intention rather than actual purchased behaviour, which may not fully capture the complexities of real-world consumer choices. Further research could explore the gap between intention and behaviour to understand better the factors influencing actual green product purchases. Additionally, this study did not provide a specific definition of “green product”, which may have led to variations in respondents’ interpretations. Future studies could focus on particular types of green products, such as organic personal care items or eco-friendly packaging, to assess whether consumers’ intentions vary across different green product categories. Another limitation is the use of convenience sampling in the Colombo District, which may affect the generalizability of the findings to other regions or demographics. Further research could employ probability sampling techniques and expand to different geographic areas or desirability biases. Future research could benefit from longitudinal studies or experiments that observe actual purchase behaviour over time, providing a more accurate picture of sustainable consumption trends.

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