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## GREEN PURCHASING IN ALGERIA: FOCUS ON ENVIRONMENTAL AWARENESS

**Abstract:** *This research explores the effects of environmental concern on the intention to purchase green products with the mediating role of TPB variables (Attitude toward green products, subjective norms and perceived behavioral control). In this context, this study aims to validate extended TPB to predict consumer intentions to purchase green products by highlighting the pivotal role that environmental concern can play in this model.*

*The empirical results conducted on data from 231 respondents using structural equation modeling validate all hypotheses of the extended TPB model. Furthermore, the results found that environmental concern, subjective norms, attitude toward green products and perceived behavioral control positively impact the intention to purchase green products. In addition, the results found that there is a relationship between environmental concern and the variables of TPB model. Our findings validated the appropriateness of the extended TPB for predicting consumers' intentions toward purchase green products in sustainable marketing settings.*

*The novelty of this study also demonstrated that the direct effect of environmental concern on intention to purchase green products was more significant than the indirect effect mediated by TPB variables. Thus, environmental concern by consumer may contribute to better understanding of green purchase intention and can become a key variable for consumer sustainable consumption. The study can help marketers to improve green marketing strategies and provide valuable insights for companies to benefit society and the environment and engage consumers' in purchasing sustainable products by focusing on environmental concern.*

*Therefore, identifying and understanding the factors affecting green purchasing product can enables the company to develop effective strategies that guide consumers' towards sustainable consumption.*

**Key words:** Green products; Environmental Concern; Green Purchase Intention; TPB model; SEM

**JEL classification:** Q56; Q01; M31.

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## მწვანე შესყიდვები ალჟირში: აქცენტი ეკოლოგიურ ცნობიერებაზე

**აბსტრაქტი:** ნაშრომში გამოკვლეულია გარემოსდაცვითი ზრუნვის გავლენა მწვანე პროდუქტების შესყიდვის განზრახვლებზე, დაგეგმილი ქცევის თეორიის (TPB) ცვლადების შუამავალი როლით (დამოკიდებულება მწვანე პროდუქტების მიმართ, სუბიექტური ნორმები და აღქმული ქცევითი კონტროლი). ამ კონტექსტში, კვლევა მიზნად ისახავს გაფართოებული TPB-ის ვალიდაციას მომხმარებელთა მწვანე პროდუქტების შესყიდვის განზრახვლების პროგნოზირებისთვის, ხაზგასმით აღნიშნავს იმ გადაწყვეტ როლს, რომელიც გარემოსდაცვით ზრუნვას შეუძლია ითამაშოს ამ მოდელში.

231 რესპონდენტისგან მიღებულ მონაცემებზე სტრუქტურული განტოლებების მოდელირების გამოყენებით ჩატარებულმა ემპირიულმა შედეგებმა გაამართლა გაფართოებული TPB მოდელის ყველა ჰიპოთეზა. გარდა ამისა, შედეგებმა აჩვენა, რომ გარემოსდაცვითი ზრუნვა, სუბიექტური ნორმები, დამოკიდებულება მწვანე პროდუქტების მიმართ და აღქმული ქცევითი კონტროლი დადებითად მოქმედებს მწვანე პროდუქტების შესყიდვის განზრახვლებზე. გარდა ამისა, შედეგებმა აჩვენა, რომ არსებობს კავშირი გარემოსდაცვით ზრუნვასა და TPB მოდელის ცვლადებს შორის. გაკეთებულმა დასკვნებმა დაადასტურა გაფართოებული TPB-ის შესაბამისობა მდგრადი მარკეტინგული გარემოს პირობებში მომხმარებელთა მწვანე პროდუქტების შესყიდვის განზრახვლების პროგნოზირებისთვის.

კვლევის სიახლემ ასევე აჩვენა, რომ გარემოსდაცვითი ზრუნვის პირდაპირი გავლენა მწვანე პროდუქტების შესყიდვის განზრახვლებაზე უფრო მნიშვნელოვანი იყო, ვიდრე TPB ცვლადებით შუამავლობით გამოწვეული ირიბი ეფექტი. ამრიგად, მომხმარებლის გარემოსდაცვითმა ზრუნვამ შეიძლება ხელი შეუწყოს მწვანე შესყიდვის განზრახვლების უკეთ გაგებას და შეიძლება გახდეს მომხმარებლის მდგრადი მოხმარების მთავარი ცვლადი. კვლევამ შეიძლება დაეხმაროს მარკეტოლოგებს მწვანე მარკეტინგული სტრატეგიების გაუმჯობესებაში და მიაწოდოს ღირებული ინფორმაცია კომპანიებს საზოგადოებისა და გარემოს სარგებლობისთვის და მომხმარებლების ჩართულობისთვის მდგრადი პროდუქტების შესყიდვაში, გარემოსდაცვით ზრუნვაზე ფოკუსირებით.

შესაბამისად, მწვანე შესყიდვის პროდუქტზე გავლენის მქონე ფაქტორების იდენტიფიცირება და გაგება საშუალებას აძლევს კომპანიას შეიმუშაოს ეფექტური სტრატეგიები, რომლებიც მომხმარებლებს მდგრადი მოხმარებისკენ მიმართავს.

**საკვანძო სიტყვები:** მწვანე პროდუქტები; გარემოსდაცვითი ზრუნვა; მწვანე შესყიდვის განზრახვლება; დაგეგმილი ქცევის თეორიის მოდელი; სტრუქტურული განტოლებების მოდელირება

**JEL კლასიფიკაცია:** Q56; Q01; M31.

## Introduction

In recent years, environmental awareness has changed the vision of many companies on the subject of the eco-friendly (Kim et al., 2019; Kumar et al., 2021), and will be more inclined to harness their efforts to achieve greater societal well-being by developing innovative green technologies and production processes (De Medoros et al., 2014; Alzubaidi et al., 2021). For this reason, companies and consumers across the world are facing the challenge of protecting the environment and conserving its resources (Naalchi, Kashi, 2020; Nguyen et al., 2023). Thus, increased environmental awareness and interest in consuming sustainable products will likely influence consumers' green purchasing decisions (Paul et al., 2016). Therefore, as consumers become increasingly environmentally aware and concerned about how their purchasing decisions impact their consumption patterns on the environment, consumers are becoming more aware of eco-friendly purchasing options. Hence, the growing interest in environmental and sustainability issues in society has prompted researchers to study the reasons behind the purchase and consumption of sustainable products (De Canio et al., 2021). Moreover, consumers increasingly prefer sustainable or environmentally friendly brands, as evidenced by the increasing growth of sustainable products compared to alternative traditional products in some categories (White et al., 2019; Dangelico et al., 2021).

In practical terms, encouraging the consumption of green products by consumers can achieve sustainable consumption. According to Shamdasani et al. (1993) the term “green products” is defined as “products that will not destroy natural resources or pollute the earth, and are sustainable or recyclable” (Salimi, 2024). In addition, marketers need to focus on consumers’ preferences and decision-making processes to market green products (Cherrier et al., 2011; Paul et al., 2016). To address this issue, Barber (2010) recommended that researchers explore the extent to which consumers can adopt sustainable behaviors and attitudes that enhance intentions to purchase green products. (Paul et al., 2016). In this context, previous researches have used the theory of planned behavior (TPB) to study green purchasing behavior and investigate its different locations and aspects (Kamalanon et al., 2022). The TPB model has been widely used to evaluate consumer behavior (Chen & Tung, 2014; Yadav and Pathak, 2016; Sreen et al., 2018), specifically to illustrate their green behavior (Jain & Singh, 2024). The TPB model is mainly based on three basic concepts: attitude [AT],

subjective norms [SN], and perceived behavioral control [PBC], which in turn influence an individual's intention to perform a specific action or adopt a particular behavior (Ajzen, 1991). However, the researchers pointed out the need to further expand the use of this model by adding other constructs as necessary (Ajzen, 1991; Perugini & Bagozzi, 2001; Segovia et al., 2022).

To complement the existing literature, this study proposed an extended TPB model with the addition of another independent construct, which is an environmental concern. Research on the green consumer has focused on studying environmental concerns (Paul et al., 2016; Jaiswal & Kant, 2018; Chwialkowska et al., 2020; Kamalanon et al., 2022). In particular, meta-analysis reveals that environmental concern is one of the most important sustainability variables addressed in the green marketing literature (Paul et al., 2016; Wiernik et al., 2013). Environmental concern refers to the degree of individual concern for the environment and is often used by researchers to be an immediate predictor of green consumption intention (White et al., 2013; Yue et al., 2020). Thus, Previous studies have shown that green behavioral intention can be more accurately predicted by adding environmental concern into the TPB model (Paul et al., 2016; Al-Mamun et al., 2020; Kamalanon et al., 2022; Mongula et al., 2023; Salimi., 2024; Alzubaidi et al., 2024; Jain & Singh, 2024).

The Algerian government is also interested in encouraging its citizens to consume green products, although few studies were conducted within the context of Algerian culture. Therefore, it is necessary to give priority to empirical studies that explore the relationship between environmental concern and the green consumption behavior of Algerian consumers'. In this regard, the purpose of this study is to understand consumers' purchase intention toward green products using the extended theory of planned behavior. Therefore, the main problem of this study is whether environmental concern is effective on green product purchase intention through perceived behavioral control, attitude toward green product and subjective norms. Specifically, the aims of this study were as follows:

- (1) To study the influence of environmental concern on intention to purchase green product;
- (2) To investigate the important constructs of the TPB model (i.e., perceived behavioral control, social norms, and attitude toward green products) in shaping consumers' intention to purchase green products;
- (3) To build a theoretical framework that integrates environmental concerns and TPB variables to explain consumers' purchase intention of green products in the context of cosmetics.

To test the research hypotheses, a questionnaire was used to collect data from the study sample who prefer to consume green products. We analyze the respondents' data using structural equation modeling to verify the theoretical model and test the hypotheses.

The remainder of the paper is as follows. To achieve the research goals, this paper proceeds with a literature review and research hypotheses in section 2. Then Section 3 proposes the methodology, and a further section discusses the results and findings, Finally, the last section describes the conclusion, recommendations and limitations of the study.

### **Review of literature**

Several workshave revealed that the theory of planned behavior (TPB) developed by Ajzen (1991) isthemostwidelyusedtheorybystudies in green consumer behavior (Paul et al., 2016; Kumar et al., 2021; Nguyen et al., 2023; Jain & Singh, 2024; Alzubaidi et al., 2024).Specifically, TPB model improves the predictability of purchase intention (Jebarajakirthy & Lobo, 2014) associated with green products. Therefore, it is necessary to explore the critical factors in TPB that can contribute decisively to marketing research directed at studying the green purchase intention of green products (Kamalanon et al., 2022; Mongula et al., 2023). Recently, the TPB model has been applied in several research areas that explored green consumption behavior (Al-Mamun, 2020) and green purchase intention (Tarkiainen & Sundqvist, 2005; Barber et al., 2010; Chen & Peng, 2012; Chen and Tung, 2014; Paul et al., 2016), each of which has yielded significant results. Green purchase intention is used as an indicator to measure consumers'

willingness or readiness to adopt green products. (Paul et al., 2016; Segovia et al., 2022). As we discussed earlier, the extended TPB has been used to study green or eco-friendly consumer behavior (Chen & Tung, 2014; Yadav & Pathak, 2016; Sreen et al., 2018; Jain & Singh, 2024), which posits four predictors of green purchase intentions: attitude toward green products, subjective norms, perceived green behavioral control and environmental concern. Based on the above, we now turn to discuss each of these predictors.

### **Environmental Concern**

Environmental concern refers to individuals who are often concerned about environmental issues and hold society, future generations, and even themselves accountable for all actions related to the use of natural resources in the environment in which they live (Nguyen et al., 2023). Similarly, Vainio & Paloniemi (2014) approach the concept of environmental concern by referring to general values toward the natural environment, concern for the environment, and how human progress is harming the future of the environment (Saari et al., 2021). Thus, within the pro-environmental literature, we find a great focus on environmental concern and its consideration as one of the most important indicators influencing environmentally friendly behavior (Waris & Hameed, 2020b; Zameer & Yasmeen, 2022; Aseri & Ansari, 2023; Mongula et al., 2023). De Canio & Martinelli (2021) stated that Environmental concern plays a central role in pro-environmental consumer behaviors. McDonald et al. (2015); Yu et al. (2020) even noted that people with a higher degree of environmental concern are willing to respond to environmentally related problems and do their best to take the necessary positive actions that protect the environment. Several studies have demonstrated a positive relationship between environmental concern and the three variables of the planned behavior control model in the area of pro-environmental behaviors (Paul et al., 2016; Salimi, 2024; Liang et al., 2024). More specifically, consumers' environmental concern will influence their intention to purchase green and environmentally friendly products. In addition, environmentally conscious individuals such as peers/family, colleagues, and friends will also influence others' behavior and accept or reject others' green purchasing behavior (Paul et al., 2016). Thus, the social norms of green consumers will be influenced by increased environmental concerns. Environmental concern also positively influences the perceived behavioral control of the green consumer, which reduces the perception of difficulty in terms of resources and time. In addition, consumers who prefer green products will be more concerned about the environment because they know the positive benefits that can result from green consumption. Taking the above into consideration, the following hypotheses are developed:

**H1:** *Environmental Concern has a positive effect on Attitude toward green products;*

**H2:** *Environmental Concern has a positive effect on Subjective Norms;*

**H3:** *Environmental Concern has a positive effect on Perceived behavioral control;*

The positive influences of environmental concern on green consumption intention are attested in previous studies (McDonald et al., 2015; Mohd Suki, 2016; Yue et al., 2020). Therefore, the results of the majority of studies concluded that environmental concern is the most important indicator of behavioral intention (Paul et al., 2016; Felix et al., 2018; Alzubaidi et al., 2021; Jain & Singh, 2024; Liang et al., 2024). Thus, we can put forward the following hypothesis:

**H4:** *Environmental Concern has a positive effect on the intention to purchase green products.*

### **Attitude towards Green Products**

The term "attitude" refers to "an individual's feelings and beliefs toward a particular thing" (Ajzen, 1991; Jain & Singh, 2024). Therefore, attitude toward green products represents the degree to which a consumer evaluates the act of purchasing a green product negatively or positively (Chen & Deng, 2016; Kamalananon et al., 2022). According to Cannière et al. (2009) and Bong Ko & Jin (2017), the relationship between attitude and intention is an integral part of the literature survey on individuals' behavior. Thus, purchase intention will be positively influenced by consumers' attitudes toward green products across different product categories. For example, in the context of organic food products, several studies have found a

significant association between consumer attitude and green purchase intention (Dean et al., 2012; Zhou et al., 2013; Lahery et al., 2024), confirming that the logic of the relationship between attitude and intention is dominant in green consumption settings (Paul et al., 2016). Moreover, previous studies have found that attitude is one of the most important predictors of green purchases, because it is a psychological emotion (Nguyen et al., 2018; Kumar et al., 2021). Likewise, some researchers have found that when consumers have a positive attitude toward green products, this will play a vital role in their green product purchase intention (Yadav & Pathak, 2016; Al-Mamun et al., 2018; Sreen et al., 2018; Kamalanon et al., 2022). Therefore, the following hypothesis was established:

**H5.** *Attitude toward green products has a positive effect on the intention to purchase green products.*

### **Subjective Norms and Green Products**

According to the theory of planned behavior, subjective norms act as a major socially advantaged driver of individuals' behavioral intentions, which will result in social pressure on the behavioral choices that individuals make (Ajzen, 1991; Wang et al., 2016; Liang et al., 2024). Furthermore, social pressure can come from anyone important to the individual, such as relatives, colleagues, close friends, and business partners (Paul et al., 2016; Alzubaidi et al., 2024). In this regard, when consumers perceive that the important people they live with expect them to engage in environmentally friendly purchasing behaviors, their behavioral intentions will be more inclined to purchase green products (Fishbein & Ajzen, 2011; Liang et al., 2024). Therefore, we find that people who adopt green behavior are more influenced by typical social factors that push them to choose green, organic, and clean foods (Pliner & Mann, 2004), affect their purchasing habits (Homburg et al., 2010), and influence their choices and evaluations of new products (Lee et al., 2009; Nguyen, et al., 2023). Furthermore, several studies in the field of pro-environmental purchasing behavior have indicated a significant effect of social pressures on consumer behavioral intentions to adopt pro-environmental behaviors (Gatersleben et al., 2014; Nguyen et al., 2016; Hsu et al., 2017; Al-Mamun, 2020; Alzubaidi et al., 2024). However, other studies have found the opposite results, as they did not find a positive effect of social norms on green purchase intentions (Tan et al., 2017; Sutikno & Anandya, 2021; Mongula et al., 2023). Therefore, we propose the hypothesis:

**H6.** Subjective Norms have a positive effect on the intention to purchase green products.

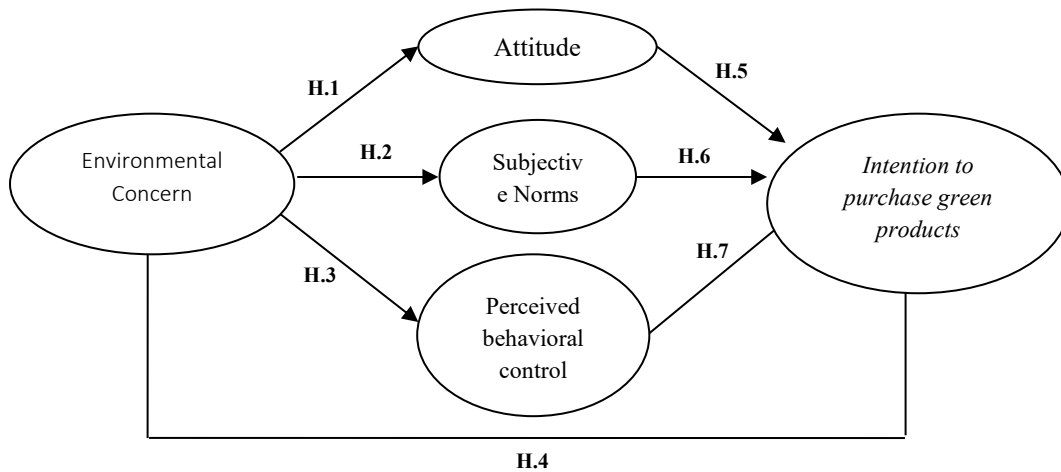
### **Perceived behavioural control of green products**

PBC is one of the key variables of the TPB model that have predictive power for behavioral intentions (Jain & Singh, 2024). It refers to an individual's perception of the challenge that results from their accomplishment of a particular task. Individuals' perception of their opportunities and resources will have a direct impact on their perceived behavioral control, which results in their willingness to act (Conner & Abraham, 2001; Triani et al., 2024). Several previous studies have explored the role that PBC can play in influencing the purchase of green products, purchase of organic food, etc. (Hughner et al., 2017; Molinillo et al., 2020; Kumar et al., 2021) and thus found that PBC has a significant positive effect on green purchase intention. In this regard, Kumar et al. (2021) praised the ability of beliefs to change the perceptions and capabilities of many consumers. Furthermore, similar research suggests that perceived behavioral control is an important influencing factor in consumers' purchases of environmentally friendly and green products (Xu et al., 2020; Liang et al., 2024). Given this background, it is proposed that:

**H7:** *Perceived behavioral control has a positive effect on the intention to purchase green products*

Theoretical model Based on theoretical background, we have proposed a theoretical model for testing the direct and indirect effect of environmental concern on intention to purchase green products. Based on the proposed hypotheses shown in Figure 1, it is evident that environmental concern plays the role of the independent variable and that attitudes, subjective norm and Perceived behavioral control act as mediators of intention to purchase green products. Thus, the paths directions are based on the review of the literature described above.

Figure 1. Theoretical Model



**Methodology**

**Data Collection and the Sample.** To investigate consumer purchase intentions for skincare, we surveyed eco-friendly grocery shoppers. We collected data from March to September 2024. Each participant was randomly selected from the sample group purchasing green products. Data were collected face-to-face, by presenting a paper questionnaire to the target sample. Moreover, participants who were accustomed to purchasing skincare products and were well acquainted with this type of product were eligible to participate in the survey and the green product chosen for the survey was ARVEA, which identifies itself as a natural and environmentally friendly product. We initially sent out over 300 questionnaires, among 250 received, 19 were invalid, for an effective response rate of 92.4% (231) within seven months. All the data we obtained from the respondents were stored in the excel database, which will be processed and tested as the database for the study. Therefore, the sample size is consistent with the structural equation modeling (SEM) analysis in which Hair et al. (2010) recommended targeting a sample ranging from 150 to 400 respondents (Ogiemwonyi, 2022).

Table 1.Characteristics of respondents. (N=231)

Demographics	Range	Percentage
<b>Gender</b>	Female	77.49
	male	22.51
<b>Age (years)</b>	Less than 30 years	60.6
	30–40 years	23.8

	Over 40	15.6
<b>Education</b>	Bachelor degree and Postgraduate degree	91.34
	High school or below	8.6
<b>Income per month (CDA)</b>	Less than 40k	44.59
	40k -60k	28.138
	60k -100k	8.658
	More than 100k	18.61

**\*Note:** Currency is Algerian dinar (CAD). Approximately, 40 K is USD 260. In Algeria, income levels can be categorized as follows: low income: less than CAD 40K. Average income CAD 40 –60K, Middle-class income, CAD 60–100 K, High income above CAD 100K.

As shown in table 1 the demographic composition of the studied sample consists of 179 (77.49%) females while males constitute only 52 (22.51%). The majority are under 30 years old 138 (60.6%), with bachelor and Postgraduate degree 211 (91.34%) as a majority, with a monthly income, exceeding 40,000 CAD per month, for the majority.

### Measures

In this study, we adopted a set of scales used in previous studies and modified them to be consistent with the measurement tools used in the study. The questionnaire items were examined by an academic expert specialized in social psychology and marketing. We also translated the items and made sure that they were compatible with the local language to ensure the integrity and accuracy of the data. To express their opinion on the items, the respondents had a seven-point Likert scale (i.e. 7 for strong agreement and 1 for strong disagreement). Based on recommendations from Ajzen (2006), the constructs of the TPB model was operationalized with a focus on green skincare products. Therefore, the questionnaire items were adopted from several diverse conducted by different authors who worked in the field of green marketing and pro-environmentally products (e.g: Paul et al., 2016; Kamalanon et al., 2022). Each constructs were measured as follows: Environmental Concern, and attitude, were measured from eight items. Purchase Intention and perceived behavioral control were measured seven six items, While subjective norms were measured by six items. Some minor changes have been made to the various items to make them suitable for purchasing skincare products.

Data Method. SPSS Statistics v.22 was applied to test the validity and reliability of the data, while Statistica v.08 was used to test the data fit and the hypothetical relations between the variables in the empirical model. First, we will initially present the descriptive data [i.e., means and standard deviations, V(x)] to analyze the responses and characteristics of the studied sample. Second, to measure the validity and reliability of the measurement model, we conducted confirmatory factor analysis (CFA) (i.e., factor loading; KMO and Cronbach  $\alpha$ ) for the measurement items included in the study models and evaluated the fit of the measurement model. Third, we applied SEM to evaluate the fit of the structural model and test the hypotheses between the extended TPB model. Finally, based on the results of the data analysis, the indicators, hypothesis testing results and path analysis were summarized.

### Results and discussion

**Descriptive Statistics and Exploratory Factor Analysis.** Table 2 summarizes the means and standard deviations of five variables. In general, the participants in this study expressed positive opinions towards green products, so the mean value of their answers to the questionnaire items ranged between 4.6 and 6.00, thus exceeding the threshold of 4. In addition, the standard deviation (SD) recorded small values (approaching 1.5), thus indicating the convergence of the answers. In addition, the KMO test was good with a value above the threshold of 0.5 which is adequate for factor analysis to be apt, and the value of Bartlett test was also significant with a Sig level < 0.05. Thus, it becomes clear to us that the studied variables are

related to the factors.

Table 2. Statistical Summary: Descriptive statistic and reliability analysis

Constructs	Items	means	SD	Cronbach $\alpha$	KMO	Bartlett test	V(X)
Environmental Concern	8	6,00	1,15	,789	,816	421,5	40,7
Attitude	8	5,37	1,28	,848	,798	821,9	65,8
Subjective Norms	6	4,60	1.59	,844	,834	527,4	56,4
Perceived behavioral control	7	5,02	1.53	,808	,814	535,2	64,8
Intention to Purchase Green Products	7	5,39	1,3	,842	,797	633,06	66,4

**KMO** (Kaiser-Meyer-Olkin): Measure Sampling Adequacy; **Bartlett test** is significant ( $p$ -value < 0.05);  $\bar{X}$ : mean score, **SD**: Standard deviation

### Measurement Model Assessment

We conducted confirmatory factor analysis including reliability and validity analysis of the measurement model, using maximum likelihood (ML) estimation with SPSS. The reliability results presented in table.2 indicate that Cronbach's  $\alpha$  values of all factors were higher than the threshold of 0.7 (Hair et al., 2010). Thus, the result shows that the alpha value of environmental concern, attitude toward green products, subjective norms, perceived behavioral control and intention to purchase green products were: 0.789, 0.770, 0.848, 0.844, 0.808 and 0.842, respectively indicating that the reliability of the questionnaires was acceptable. Regarding validity results presented in table.3, all variables indicated high factor loading values, with scores ranging from 0.510 to 0.813, and were more than the recommended standard of 0.5 (Hair et al., 2015; Laheri et al, 2024), except for three indicators ( $ec_6$ ;  $ec_8$  and  $sn_4$ ) that we did not delete due to their validity that was confirmed in previous studies.

Table3. ITEM Loadings of measurement

Items	FL	T value
Environmental Concern [EC]		
I believe in preserving nature and wildlife	0,638	13,10
I would describe myself as an environmentally responsible person	0,551	10,08
I am concerned about the deterioration of the quality of the environment in my country	0,562	10,42
I am emotionally involved in environmental protection issues in my country	0,587	11,24
I am willing to reduce my consumption to help protect the environment	0,543	9,83
Major social changes are necessary to protect the natural environment	0,456	7,53
I believe I have a responsibility to protect the environment	0,716	16,58
I believe that the environment is getting worse due to pollution	0,472	7,92
Attitude [AT]		
I have a positive attitude towards buying a green product	0,653	14,86

Environmental protection is important to me when I buy products	0,705	17,79
Buying green products can help conserve nature and resources	0,778	23,21
I think buying green products is appropriate	0,813	26,39
I support buying green products	0,620	13,33
I have a supportive attitude towards buying green products	0,547	10,57
Eco-friendly products reduce environmental pollution	0,653	14,86
Eco-friendly products have a good reputation	0,705	17,79
Subjective Norms [SN]		
People will have a good impression of me if I buy green products	0,803	25,09
People around me influence me to buy green products	0,758	21,25
My family thinks I should buy green products instead of regular products	0,541	10,29
My close friends think I should buy green products instead of regular products	0,250	3,72
My friend's positive opinion influences my green product purchase	0,726	18,97
People who are important to me buy green products makes me want to buy the same products	0,701	17,41
Perceived Behavioral Control [PBC]		
I am confident that I can buy green products when I want instead of regular products	0,561	10,98
I see myself being able to buy green products in the future	0,632	13,80
I have the resources, time and desire to buy green products	0,788	23,97
I know where to buy green products	0,756	21,26
I am absolutely confident that I should buy or use green products	0,510	9,37
I believe that the decision to buy a green product is entirely my own	0,653	14,81
I can easily identify environmental products	0,685	16,51
Intention to Purchase Green Products [IPGP]		
I am willing to buy an environmentally friendly product	0,561	10,98
I will consider switching to other products for environmental reasons	0,632	13,80
I intend to buy green products next time because they are a positive environmental contribution	0,788	23,97
I plan to buy more green products instead of regular products	0,756	21,26
I will recommend green products to other people	0,510	9,37
I look for environmental products when purchasing	0,653	14,81
I prefer to continue using environmental products	0,685	16,51

**Note:FL:** Factor loading, **T:** Test Student

The goodness of fit indices was checked using absolute, incremental and parsimonious fit: chi-square ( $\chi^2$ ), root mean residual (RMS) should be acceptable between 0.04 and 0.08, GFI and CFI and Bollen's Delta and TLI should be above 0.9 (Hair et al., 2015). As shown in Table 4, we can say that the measurement model is acceptable.

Table4. FIT Results of the measurement model

Variables of the measurement model	Goodness of fit				
	GFI	RMS	CFI	Bollen's Delta	TLI or NNFI
Environmental Concern	0,942	0,055	0,903	0,904	0,864
Attitude	0,955	>0.07	0,937	0,937	0,912
Subjective Norms	0,931	0,05	0,924	0,925	0,873

Perceived behavioral control	0,975	0,07	0,967	0,967	0,950
Intention to Purchase Green Products	0,976	0,08	0,970	0,970	0,955
Suggested fit indices	<b>0.9</b>	<b>&lt;.08</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>

Structural Model and Hypotheses Testing. The goodness-of-fit indices of the structural model presented in Table 5 demonstrated a good model fit:  $\chi^2=1581,49$ ;  $df= 553$ ;  $Khi^2/df= 2.85$ ; RMS was 0.08; GFI= 0.929; CFI was 0.948; NFI= 0.906 and TLI =0.944 (Hair et al., 2015).

Table5. Assessment of overall model FIT

Model	Obtained fit indices						
	Fit index	$x^2/df$	RMSS	GFI	CFI	NFI	TLI or NNFI
Overall model fit		2.85	0,08	0,929	0,948	0,906	0,944
Suggested fit indices		[2-5]	<.08	>0.9	>0.9	>0.9	>0.9

In addition, as shown in Table 6, standardized coefficients estimates ( $\beta$ ) pointed that paths between environmental concern and attitude ( $\beta_1=0,184$ ,  $t=2,72$ ,  $p<0.05$ ); between environmental concern and subjective norms ( $\beta_2=0,429$ ,  $t=6,46$ ,  $p<0.05$ ); between subjective norms and attitude ( $\beta_3=0,644$ ,  $t=12,27$ ,  $p<0.01$ ); and between environmental concern and green product purchase intentions ( $\beta_4=0,419$ ,  $t=4,24$ ,  $p<0.05$ ) were significant and positive. Furthermore, the influences of attitude, subjective norms and perceived behavioral control on green product purchase intentions were found to be significant and positive (Table 6) were recorded as follows: Attitude toward green products ( $\beta_5=0,184$ ,  $t=2,72$ ,  $p<0.05$ ), subjective norms ( $\beta_6=0,152$ ,  $t=2,46$ ,  $p<0.05$ ) and perceived behavioral control ( $\beta_7=0,277$ ,  $t=3,53$ ,  $p<0.05$ ). We also found that the direct effect of environmental concern on perceived behavioral control was greater than attitude toward green products, subjective norms, and intention to purchase green products. Moreover, the influence of attitude toward green products on intention to buy green products was equal to subjective norms and lower than perceived behavioral control. Table 6 also depicted that environmental concern has a more significant direct effect on the intention to purchase green products (0,42) than indirect effects of mediating variables such as Attitude toward green products (0,54), subjective norms (0,43) and Perceived behavioral control (0,64) in green marketing field.

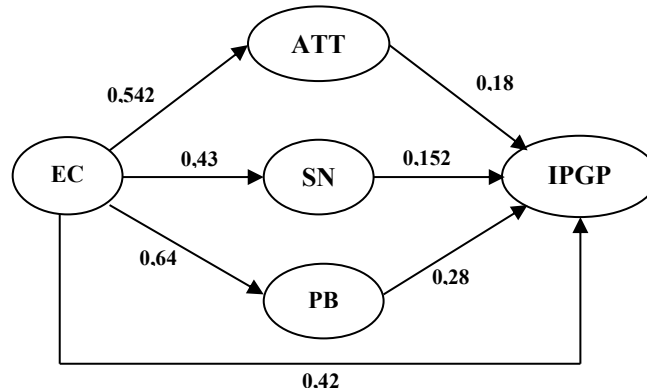
Table 6.Hypotheses test results

Hypothesis	Relationship	Coefficients' ( $\beta$ )	Std. Error	t-value	p-value	Remarks
H1	(EC)-->(AT)	0,54	0,058	9,27	0,000	supported
H2	(EC)-->(SN)	0,43	0,066	6,46	0,000	supported
H3	(EC)-->(PBC)	0,64	0,053	12,27	0,000	supported
H4	(EC)-->(IPGP)	0,42	0,099	4,24	0,000	supported
H5	(AT)-->(IPGP)	0,18	0,068	2,72	0,006	supported
H6	(SN)-->(IPGP)	0,15	0,062	2,46	0,014	supported

H7	(PBC)-->(IPGP)	0,28	0,079	3,53	0,000	supported
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T>1.96. Significant at the 0.05 level (p < 0.05).

Figure 2 - Structural extended TPB model



To test our hypothesized model, we chose to apply structural equation modeling (SEM). Through the SEM model, the relationship between the independent and dependent variables were shown more clearly. Thus, the results summarized in Figure.1 show that there are statistically significant positive relationships between environmental concern and Attitude toward green products ( $\beta_1=0,542$ ), subjective norms ( $\beta_2=0,429$ ), perceived behavioral control ( $\beta_3=0,644$ ), intentions to purchase green products ( $\beta_4=0,419$ ) providing support for H1, H2, H3 and H4 that environmental concern can be an effective predictor of Algerian consumers'. The contribution of these results is the positive influence of environmental concern on attitude toward green products, subjective norms, perceived behavioral control and purchase intention of green products, and more importantly, the key role that environmental concern plays through its direct influence on green purchase intention. These results are consistent with This findings is consistent with Al-Mamun et al. 2020; De Canio & Martinelli (2021); Saari et al. (2021); Kamalanon et al (2022); Nguyen, et al. (2023), that concluded similar results, proving the importance of consumers' environmental concern in influencing their attitudes and intentions towards green consumption. This reveals the importance of the mediating effect, as environmental concern can enhance green product consumption behaviors by Algerian consumers by enhancing their positive attitudes toward green products and social environmental expectations that encourage them to preserve the environment, as well as enhancing their belief in their control over their green behavior and preference for green, environmentally friendly products. However, it was also observed that the relationship between attitude toward green products ( $\beta_5=0,184$ ), subjective norms ( $\beta_6=0,152$ ), perceived behavioral control ( $\beta_7=0,277$ ) and intention to purchase green products were statistically significant but weak when compared with the previous three hypotheses (H1, H2, H3). Therefore, we say that the hypotheses H5, H6 and H7 are justified. Among the three variables of the TPB model, perceived behavioral control was found to be the indicator that had the strongest influence on green product purchase intention, followed by attitude toward green products and then the influence of subjective norms on their intention to purchase green products. Thus, the current study accentuates that perceived behavioral control is the most important factor influencing green purchase intention among Algerian consumers. The literature

studies of Paul et al. (2016); Kamalanon et al. (2022); Segovia et al. (2022); Salimi (2024) support this view indicating that this constructs as potential predicting factors of behavioral intention to purchase green products. However, these findings contradict the studies of Bong Ko & Jin (2017); Al-Mamun et al. (2020); Kumar et al. (2021) and Jain & Singh (2024). According to our findings, green purchasing intention will increase when Algerians feel they have the resources, capabilities and time to buy green products and their willingness to buy will increase accordingly. Thus, they consider themselves able to control green purchasing when green products are available and there are many opportunities to buy them in shopping malls. Moreover, our finding, confirms the importance of individuals' attitudes towards green products, thinking, and personal beliefs, as well as social influences on their behavior and sense of ability to control their green behavior when deciding to purchase green or eco-friendly products.

### **Conclusions**

The purpose of this study was to investigate the factors influencing green purchase intention by using an extended TPB model by incorporating environmental concern as an independent variable. The results indicate that environmental concern positively influences attitude, subjective norms, perceived behavioral control, and Algerian consumers' purchase intention of green product. Notably, in addition to the direct effect of environmental concern on green purchase intention, it also indirectly enhances green purchase intention by influencing attitudes toward green products, subjective norms, and perceived behavioral control, revealing its important mediating role. At the same time, these findings will enable green marketing researchers understand customers' green purchasing intentions, which will enable them to build appropriate marketing strategies.

This study is useful for all organizations interested in marketing green products. Thus, marketing managers should develop and promote green products by enhancing consumers' environmental concerns and ensure that consumers' are guided towards their consumption and made aware of their benefits in preserving the environment and boosting economies as well. Meanwhile, our study found that consumers' attitude is influenced by environmental concerns and affect the intention to purchase green products, so an environmental awareness campaign can be conducted to shape consumers' positive attitudes towards green products and consumption. Moreover, our result showed that social influence and perceived behavior control influence green purchase intention, thus emphasizing the role that family, colleagues and friends can play in pushing consumers towards green consumption. Therefore, marketers should focus on raising awareness of the social environment in which the consumer lives and enriching it with topics related to sustainability and positive benefits that will have a positive impact on the environment.

**Limitations and future research.** Despite its contributions, the current study is not without limitations but those identified in this section may provide substantial inspiration for future research. First, The proposed conceptual model was studied in Tlemcen city (Algeria) for skin care products. It will be possible to conduct similar tests for additional cities and goods in subsequent studies. Second, In this research, We collected data using a paper questionnaire administered directly to respondents, so future research could increase the sample size by using an online survey. Third, this study is limited to examining green purchase intentions as a context for eco-friendly products, so future research could examine green consumption or green purchasing behavior. Finally, we collected data from a sample that is representative of a broad cross-section of the general population, and it is understood that this choice may affect the generalizability of the results to a broader and more diverse audience. Therefore, it was possible to collect data only in locations that offer green products because the sample, in this case, is more representative of environmentally conscious consumers from diverse backgrounds, all of which contribute to the scope and applicability of the findings.

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