Understanding Green Product Purchase Intentions Using the Theory of Planned Behavior: Case study of Algerian Consumers'

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ARTICLE INFO	Abstract:
	Objective: Consumers have recently become more concerned about environmental protection and have turned to eco-friendly products, also known as green products. To explore the factors that determine consumers' green product purchase intentions, this study aims to measure the effects of TPB variables (e.g., perceived behavioural control, attitude, and subjective norms) on green product purchase intentions. Through this study, we build a theoretical framework that combines the ideas and perspectives of previous studies on sustainable consumption. **Methods:** In order to validate our research hypotheses, questionnaires were used to collect primary data from a sample of 219 participants in Algeria. Therefore, this research uses quantitative study method to design the research model which was tested using structural equation modeling (SEM) method. We processed and analyzed the statistical data using SPSS v22.0 and Statistica v08. **Results**: The results show that purchasing intention of green products is positively affected by attitude (ATT), subjective norms (SN), and perceived behavior control (PBC). Furthermore, our findings discovered that the influence of PBC on intention to purchase green products was more significant than the effects of SN and ATT, enhancing our understanding of the key drivers of green product purchase intentions. **Conclusion**: These ifhdings can generate more suitable managerial implications and policy contributions to promote green product

consumption. It also highlights the key factors determining consumers' eco-friendly purchasing intentions in Algeria. Therefore, identifying and understanding these factors enables the organization to develop effective strategies that guide consumers towards sustainable consumption and mitigate the negative repercussions of environmentally harmful consumption.

1- Introduction

Recent years have witnessed a major shift in consumer behavior, where health and environmental awareness play a major role (Nguyen, et al., 2023). In this context, the use of sustainable, environmentally friendly (i.e: eco-friendly) products and avoiding the consumption of products that are harmful to the environment and society is known as "green consumption behavior" (Huang et al., 2014; Jaiswal & Kant, 2018; Nguyen, et al., 2023). Furthermore, from an environmental perspective, Bonini and Oppenheim (2008) indicated that green consumption helps achieve environmental sustainability for this reason, the consumption of green products and maximizing sales are key elements of green marketing. In this regard, Chen and Peng (2012) and Paul et al, (2016) added that consumers' sense of responsibility towards the environment can motivate them to buy green products. In particular, marketers should be attempting to explore the factors that influence consumer' intentions toward purchase green products (Paul et al., 2016). In the focal context, it was decided to employ TPB as the theoretical basis for studying environmental psychology to understand the personal factors influencing green purchasing intention by consumers.

The TPB model is among the widely used models to examine consumer adoption behavior in different contexts (Moons and De Pelsmacker, 2015; Schmalfuβ et al., 2017; Wang et al., 2019; Jain and Singh, 2024). It has also been used by many studies to investigate green purchasing behavior (Chen and Tung, 2014; Paul et al., 2016; Sreen et al., 2018; Alzubaidi et al., 2021; Kamalanon et al., 2022; Jain and Singh, 2024; Liang et al, 2024). It is considered one of the most widely used research models in the field of psychology that is interested in studying behavioural intention (Fishbein & Ajzen, 1977; Haytko & Matulich, 2008; Liu el al., 2022). In this context Meng & Choi (2018) and Liu el al. (2022) considers behavioural intention to be a conscious plan of action and the best indicator that can influence an individual's behavior. Therefore, The TPB was first proposed by Ajzen (Ajzen, 1991; Kamalanon et al., 2022), this theory posits that individuals' intentions to engage in a particular behavior are influenced by three psychological factors: attitudes, subjective norms and perceived behavioural control (Hsu et al., 2017; Gansser and Reich, 2023; Ramadhanti et al., 2024). Furthermore, the TPB emphasizes the importance of an individual's inherent nature and personality when making choices. Thus, the TPB supports the consideration of psychological factors in making decisions that are socially influenced and self-controlled (Juschten et al., 2019; Kamalanon et al., 2022).

The TPB provides a theoretical framework that represents the factors that influence individuals' behavior toward a particular phenomenon. This model also allows for identifying the nature of the influence of other contextual variables (Ajzen, 1991; Paul et al, 2017; Jaiswal & Kant, 2018; Qi & Ploeger, 2021; Alzubaidi et al., 2021; Zheng et al., 2021; Sun et al., 2022; Nekmahmud et al., 2022; Ramadhanti et al., 2024; Wang et al., 2024).

Despite the efforts made in the field of sustainable development and encouraging citizens to consume green products, there is a delay in the implementation of green growth in Algeria. Moreover, there are few academic studies in the field of marketing conducted in the context of Algerian consumers' that focused on sustainable development, therefore, it is necessary to draw attention to studies that explore the determinants of green consumption of Algerian consumers'. Hence, this paper aims to examine the antecedents of consumers' purchasing intention toward green products using the theory of planned behavior. Based on the TPB model, we have proposed a theoretical framework and applied a structural equation modeling (SEM) approach to explore the important of each construct (e.g., attitudes, social norms, and perceived behavioural control) in shaping consumers' intention to purchase green products.

This present article provides multiple implications for both academic research and managerial practice by adopting an empirical approach to explore the role of attitude, behavior, or social norms and performance-based behavior (behavior control) in understanding consumers' green purchase intentions using structural equation modeling. Furthermore, policy planners and companies can use these findings to better understand how consumers perceive green products in the context of consumer products and in particular cosmetic products, therefore, these companies will benefit from guidance on marketing strategies. The following points sections of this article continue with a review of the literature and conceptual framework and then the research methodology and results are described, followed by a discussion on the research ifndings, implications and□ limitations of the study.

2. Literature Review

Among the most influential theories in predicting social and health behaviors, we mention the "Theory of Planed Behavior (TPB)". This theory has been successfully applied to the field of environmental behavior (Bonini & Oppenheim, 2008; Chen and Peng, 2012; Huang et al., 2014; Chen and Tung, 2014; Paul et al., 2016; Hsu et al., 2017; Sreen et al., 2018; Jaiswal & Kant, 2018; Alzubaidi et al., 2021; Zheng et al., 2021; Kamalanon et al., 2022; Nguyen, et al., 2023; Jain and Singh, 2024; Liang et al, 2024; Ogiemwonyi 2022). Within the framework of the TPB model, Ajzen (1991) asserted that subjective norms, perceived behavioural control, and attitude influence intention and actual

behavior of an individual. Accordingly, our study uses the TPB model to identify the factors influencing consumers' purchase intention of green skincare products. In the following sub-sections, we will define these factors in the context of green behavior and then propose hypothesized relationships based on previous literature.

2.1. Green Products

Green products are defined as products that are eco-friendly, do not cause much waste, use recyclable materials, save energy, reduce packaging, toxic and environmentally harmful components as much as possible and have a green life cycle (Nimse et al., 2007; Kumar & Ghodeswar, 2015; Nguyen, et al, 2023). In this context, a green product refers to its better environmental efficiency during the manufacturing process as well as its life cycle (Albino et al., 2009; Josephine & Ritsuko, 2008; Zheng et al., 2021). Green products are eco-friendly products that cause minimal damage to the environment during production and consumption (Nguyen et al, 2023). In this regard, Suki (2016) pointed out the need for companies to generate additional demand for their green brands, and improve buyers' green purchase intentions in order to gain a competitive advantage among competitors (Zheng et al., 2021). Moreover, Shehawy & Ali Khan (2024) pointed that consumers' green habits are reflected through green products. Therefore, consumers will be more willing to buy green products because of their great benefits (Sun et al., 2022). On this basis, we try through this study to examine the factors influencing consumers' purchase intentions for green products, especially green skincare products. According to Wiki (2014) and Hsu et al. (2017) green skincare products refers to products that are manufactured from naturally derived ingredients for skincare (such as essential oils, herbs, flowers, and roots) that are combined with preservatives, natural carriers, moisturizers, emulsifiers, and surfactants. In this regard, Hsu et al. (2017) suggest that skincare products do not rely on synthetic chemicals and mainly use plant ingredients; moreover, during the manufacturing process, the integrity of the ingredients of skincare products is maintained.

2.2. Attitude and Intention to Purchase Green Product

Attitude is defined as the negative or positive evaluation that results from an individual's engagement in a specific behavior (Wan et al., 2017; Sun et al., 2022). It can also be described as a psychological process that influences a person's dislike or like of a particular product or object (Eagly & Chaikin, 2007; Nekmahmud et al. 2022). In additional, this construct are of great importance in consumer research because they represent the fundamental ways consumers think and feel (Das, 2014; Kumar et al., 2021; Roh et al., 2022; Valentin & Hechanova, 2023; Shehawy & Ali Khan, 2024). Moreover, it is important to note that attitude is considered one of the main factors that influence individuals' intentions (Bissonnette and Contento, 2001; Vermeir and Verbeke, 2008; Taufique and Vaithianathan, 2018; Verma and Chandra, 2018; Carfora et al., 2019;

Ramadhanti et al 2024). Therefore, in the environmental context, attitude expresses a systematic concept through which a customer' evaluates environmental purchasing behavior, and it includes his attitude toward fair, green, or eco-friendly purchases (Lee, 2014 and Zheng et al., 2020), and thus affects his behavioural intention to purchase green products (Ajzen, 1985; Joshi & Rahman, 2017 and Zheng et al., 2020). Moreover, the results of studies conducted by Yadav and Pathak, (2016, 2017) found a significant correlation between attitude and green purchase intention (Nekmahmud et al., 2022). Likewise, marketing research has revealed that consumers' who have eco-friendly attitudes tend to adopt positive attitudes toward purchasing eco-friendly products (Paul et al. 2016; Yadav and Pathak 2016; Delistavrou, et al., 2022). In additional, if consumers' have positive attitudes towards sustainable behaviour, this will be positively reflected in their intentions to adopt behaviour that is in the interest of protecting the environment and nature (Gansser & Reich, 2023). Furthermore, in the context of personal care products in Malaysia, it has been demonstrated that consumers' attitudes have an impact on their intention to purchase organic personal care products (Ghazali et al., 2017; Al Mamun et al, 2020). Likewise, a study of 29 conducted in Malaysia also found that consumers' attitudes towards green products have a significant impact on their intention to purchase green products (Mokan et al., 2018; Al Mamun et al, 2020). The results of Sun et al. (2021) also indicated that consumers' willingness to purchase green products will increase the more they believe that choosing green products will be beneficial to the environment. Moreover, Zheng et al. (2021) pointed that the same results were reached by Tanner & Kast (2003) and Zhao et al. (2014). Nevertheless, some studies (e.g., Davis, 1995; Magnusson et al., 2001) have shown a weak effect of customers' attitudes on their green behaviors (Zheng et al., 2020). Given this background, we hypothesized that:

H1. *Attitude toward green products has a positive effect on intention to purchase green products.*

2.3. Subjective Norms and Intention to Purchase Green Product

Subjective norms reveal the social pressures that individuals feel when deciding to adopt a certain behavior (Sun et al., 2022). Subjective norms also refer to individuals' beliefs about how reference groups will view them if they engage in a certain behavior (Al Swidi et al., 2014; Qi & Ploger, 2021). In other words, it refers to the opinions of important people such as family, relatives and friends who have a great influence on an individual's decision-making (Al Mamun et al., 2020). In this regard, Singh et al. (2021) stressed that the feeling of social pressure by a large number of individuals' who support environmentally sustainable practices is likely to push companies to adopt and implement pro-environmental activities (Nekmahmud et al., 2022). Several studies have not found a positive relationship between subjective norms and green purchase

intention (e.g., Paul et al., 2016; Chaudhary and Bisai, 2018; Nekmahmud et al., 2022). This could be explained by the fact that high social pressure can have a negative impact on certain intentions and actions of an individual (Nekmahmud et al., 2022). In contrast, the results of the study conducted with 105 consumers proved that subjective norms in environmental analysis directly affect the behavior of respondents towards green purchases (Zheng et al., 2021). Moreover, conscious evaluation of environmental behaviors within the social circles in which an individual lives often has a positive impact on their attitude toward green purchases, enhancing their intention to purchase green products (Pontes et al., 2024). Moreover, the results conducted by many studies (Yadav & Pathak, 2016; Liobikiene et al., 2016) indicated that social pressure drives customers' to purchase green products and services (Zheng et al., 2021). In light of these findings, it is proposed that:

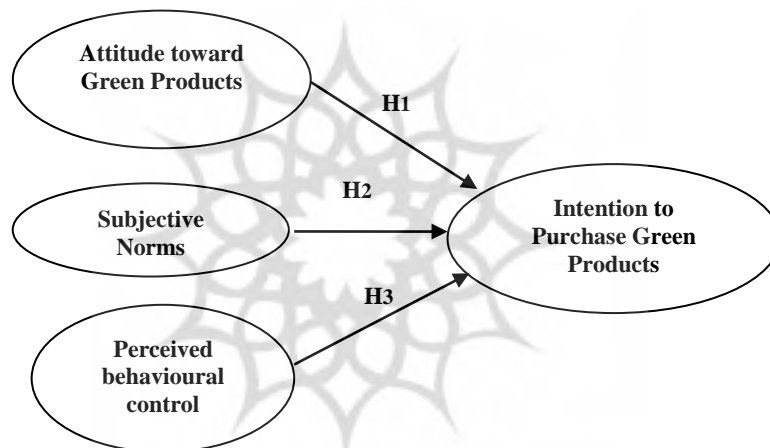*H2*. *Subjective Norms has a positive effect on intention to purchase green products.*

Figure.1. Conceptual Framework

2.4. Perceived Behavioural Control and Intention to Purchase Green Product

Perceived behavioural control is defined by researchers as the degree to which an individual expects to feel capable of mastering or controlling a behavior (Sun et al., 2022). In other words, this component refers to the ability of an individual's to independently control his or her behavior (Ajzen, 1991; Qi & Ploger, 2021). This concept relates to the self-assessment of an individual's ability to adopt a certain behavior, taking into account anticipated obstacles and past experiences (Pontes et al., 2024). In this regard, researchers such as Barbarossa & De

Pelsmacker (2016); Yadav & Pathak (2017) and Nekmahmud et al. (2022) have pointed out that perceived behavioural control is a result of perceived power (may assist or hinder consumers' purchase intention) and control beliefs (cost, time, availability). Ferthermore, empirical studies have demonstrated a significant correlation between green product purchase intention and perceived behavioural control (Han et al., 2010; Hsu et al., 2017; Yadav & Pathak, 2016; Pontes et al., 2024). Therefore, many consumers' are adopting eco-friendly practices due to increased awareness of the consequences of products that are harmful to the environment (Nekmahmud et al., 2022). This means that the higher the initial intentions of customers' towards purchasing green products, the more likely they are to behave more pro-environmentally (Pontes et al., 2024). However, a person will develop an intention to purchase green products including home consumption, reusable energy and eco-friendly appliances if he has a perception of capacity efficiency and responsibility (Al Mamun et al., 2020). Moreover, when consumers are willing to purchase green products and have opportunities, resources and more time, they are confident in their ability to control the external factors to implement the purchasing behavior and thus their perceived behavioural control will increase and they will be more willing to purchase eco-friendly products (Sun et al., 2022). Moreover, the study conducted by Sun et al. (2022) and Wang (2020) also confirmed that when consumers' believe that they have the necessary conditions to purchase eco-friendly products, they prefer to choose green products. Therefore, the following hypothesis was established:

H3: *Perceived behavioural control has a positive effect on intention to purchase green products.*

3. Methods
3.1. Measures
In this study, the questionnaire items were developed from the English literature and then translated into Arabic and revised 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. Furthermore, TPB model variables were implemented with a focus on green skincare products. Therefore, the questionnaire contains 25 items validated in previous studies distributed over 4 major constructs as follows: The first, second and third sections involves answering six items that measure the attitude toward green products, social norms and perceived behavioural control adapted from Paul et al. (2016) and Kamalanon et al. (2022). The last section includes seven items measuring green purchase intentions, were adapted from Paul et al., (2016). In addition, a set of demographic questions related to gender, age, educational level and finally income were asked. To make the questionnaire

items consistent with the aims and objectives of our study, we made minor modifications to suit them suitable for the purchase of skincare products. All attributes (i.e., items) were measured using a seven-point *Likert* type on a 1-to-7 scale (1 = strongly disagree; 7 = strongly agree) to all constructs. The measurement items (i.e., factors) are presented in Table 3.

3.2. Data Collection Process

To test the hypotheses of the study model and to maintain data quality, we conducted a survey study using face-to-face interviews. Data was collected in Algeria for four months (i.e., from June to September of 2024). 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. However, to avoid problems arising from inappropriate sample characteristics and size, we targeted 250 respondents using non-probability convenience sampling methods. After sorting and checking incomplete responses (33 were excluded), we finally obtained 217 (i.e., response rate=86.8%) valid respondents for the statistical analysis. 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 (Hair et al, 2015; Ogiemwonyi, 2022).

Table. 1. Participants Characteristics. (N=217)

Demographics	Range	Percentage
Gender	Female	77.42
	male	22.58
Age (years)	Less than 21 years	15.66
	21–39 years	65.43
	40 and more	18.89
Marital Status	Single	60.82
	Married	39.17
Education	Bachelor's degree, High school and Graduate	91.24
	Junior middle school or below	8.75
Income per month (CDA)	Less than 40000	42.85
	40000 -60000	28.57
	60000 -100000	8.75
	More than 100k	19.81

*Note: Currency is Algerian dinar (CAD). Approximately, 40 000 is USD 270.

As shown in Table 1, data from the demographic profile of the survey shows the majority of the respondents are female (77.42%), single (60.82%) and educated (91.24%), with a monthly income higher than CDA. 40000 per person (57.15%). The average age of the sample is 30.81 (≈31) years and more than half of the sample are between 21-39 years old (65.43%), representing the Algerian population.

3.3. Research Methods

To analyze our measuring instruments and test the hypotheses of TPB theoretical model, the statistical softwares SPSS.22 and Statistica.08 were applied using ML (Maximum Likelihood) estimation. In the first stage, the descriptive characteristics of the answers received from the study participants (i.e., means and standard deviations) were displayed and analyzed. Second, the reliability of the questionnaire items was evaluated and the validity of the measurement model (using Cronbach α, Loading, AVEs and CR) was confirmed by conducting confirmatory factor analysis (CFA). In our study, we used CFA analysis to validate the selected items in measuring attitudes toward green products (AT), subjective norms (SN), perceived behavior control (PBC) and intentions to purchase green products (IPGP). In the third stage, we test the hypotheses of the theoretical model by applying the SEM method including evaluating the model-fit indices. Finally, we display the results of the hypothesis testing and analyze its data and summarize them in line with the study methodology.

4. Data Analysis and Results

Given the simultaneous relationships between the independent, mediating and dependent variables in our model, we conducted a three-step process to conduct structural equation modeling. The first step involves assessing the reliability and validity of the measurement model, second, calculating the goodness-of-fit index of the measurement model and finally, testing the hypotheses. Before that, we review the statistical descriptive of the study sample.

4.1 Descriptive Statistics and Testing Normality

In general, as shown in Table 2, the responses from all participants in this study expressed positive opinions about all items related to the green product. Furthermore, the mean value of their Answers varies between 4.2 and 5.8, exceeding the threshold of 4. Likewise, the standard deviation is close to the threshold of 1.5 for most observations, confirming that the responses were not scattered and that the mean best represents the data for all constructs, reflects the respondents' positive tendencies towards purchasing green and eco-friendly products to reduce the environmental problem. Also, the value of skewness ranging between [-2, +2] and the value of kurtosis between [-8, +8] indicating that the distibution of data set is symmetric, and have a normal distribution.

Table 2. Statistical summary

Constructs	Items	$\bar{X}$	SD	Skewness	Kurtosis	KMO	Bartlett test	V(X)
Attitude [**ATT**]	6	5.38	1.18	- 0.4 , -1.31	-0.19 , -3.1	0.72	488.9	0.71
Subjective Norms [**SN**]	6	4.69	1.51	- 0.33 , - 0.79	-0.98 , +0.42	0.82	491.9	0.55
Perceived behavioural control [**PBC**]	6	5.25	1.38	- 0.58 , -1.4	-0.69 , +2.52	0.80	465.3	0.62
Intention to Purchase Green Products [**IPGP**]	7	5.24	1.37	- 0.82 , - 2.0	+0.52 , +5.08	0.81	419.9	0.52

Note: KMO (Kaiser-Meyer-Olkin): Measure Sampling Adequacy; **Bartlett** test signiifcance =.000;. $\bar{X}$: mean score, **SD**: Standard deviation

4.2. Measurement Model

We used the SPSS 22.0 and STATISTICA 8.0 program to perform the test of confirmatory factor analysis on the model of study including validity (Average Variance Extracted « AVEs ») and reliability (Cronbach's α, Composite Reliability « CR » and Factor Loadings « FL ») analysis of the measurement model. These tests enable us to confirm that the manifest variables (items) represent their latent constructs and they allow us to assess convergent validity and demonstrate the existence of a correlation between the measured indicators and their intended constructs. As shown in Table 2, the KMO measures were adequates with a valus ranging from 0.72 to 0.82 demonstrated that the correlation structure in our data contains sufficient information to perfom a PCA. The results also indicated that the Bartlett test of sphericity for all constructs were significants with a Sig level < 0.05 and thus it is consistent with the use of PCA. Moreover, results of validity and reliability test are presented in Table 3. The convergent validity was calculated using AVEs that ranged from 0.52 to 0.62, exceeding the 0.50 (50%) level recommended by Hair (2006) Tabachnick et al. (2007) and Ogiemwonyi (2022). Thus, we say that the items are characterized by sufficient convergent validity. In additional, to assess and measure the internal consistency of the constructs, we used Cronbach's α coefficient.

Table 3. Assessment of measurement model (construct validity and reliability)

Constructs	Items/ Factors	Factor Loading	Cronbach's α	Composite Reliability	Average Variance Extracted (AVE)
Attitude toward green products	at1	0.81	0.80	0.92	0.68
	at2	0.70			
	at3	0.91			
	at4	0.84			
	at5	0.85			
	at6	0.85			

Subjective Norms	sn1	0.73	0.84	0.88	0.55
	sn2	0.78			
	sn3	0.76			
	sn4	0.82			
	sn5	0.71			
	sn6	0.66			
Perceived behavioural control	pbc1	0.80	0.807	0.87	0.52
	pbc2	0.76			
	pbc3	0.67			
	pbc5	0.78			
	pbc6	0.75			
	pbc7	0.55			
Intention to Purchase Green Products	gpi1	0.68	0.816	0.87	0.53
	gpi2	0.72			
	gpi3	0.83			
	gpi4	0.77			
	gpi5	0.60			
	gpi6	0.73			
	gpi7	0.77			

Our results showed that alpha values for all constructs were higher than 0.70 (0.8 - 0.84) and are consistent with the threshold (i.e., 0.7) recommended by Fornell and Larcker (1981), denoting adequate reliability. Additionally, it was found that all composite reliabilities (CR) exceeded the value of 0.70 (i.e., ranging from 0.87 to 0.92) demonstrating great level of internal consistency of scale items. Ferthermore, all factors' loadings recorded values between 0.7 and 0.4, indicating that the constructs have satisfied reliability (Pontes et al., 2024). In additional, Principal Component Analysis (PCA) was performed using Varimax rotation to test the correlation structure and sufficiency of the data. In general, these results confirmed the existence of a significant association between the measured variables, justifying the application of confirmatory factor analysis (Hair et al., 2015).

The goodness of ift index was checked and calculated for all variables as follows. We note that the RMS value is acceptable (i.e., RMS < 0.08) and the ratio of the chi-square divided by the degree of freedom (i.e., $\chi2 \ df =1030.62/272$) is equal to 3.78, and since it is less than 5, it is acceptable. As shown in the table 4 the goodness of ift index for: GFI BNFI; CFI; Bollen's Delta and TLI ranging from 0.87 to 0.99. Therefore, as recommanded by Browne and Cudeck (1992), the results indicated acceptable if index for estimated model (Hsu et al, 2017). Thus, all goodness of fit index considered fall within the acceptance range of the model used in the literature.

Table 4. Model results for goodness of ift inde□

Variables of measurement model	Goodness of if.					
	GFI	BNFI	RMS	CFI	Bollen's Delta	TLI or NNFI
Attitude toward green products [ATT]	0.95	0.91	0.069	0.92	0.92	0.87
Subjective Norms [SN]	0.98	0.97	0.06	0.98	0.98	0.97
Perceived behavioural control [PBC]	0.99	0.98	0.049	0.99	0.99	0.99
Intention to Purchase Green Products [IPGP]	0.98	0.96	0.075	0.98	0.98	0.96
Suggested ift indice.	**0.9**	**0.9**	**<.08**	**0.9**	**0.9**	**0.9**

5. Structural Path Model and Hypothesis Testing

In this study, we applied the structural equation modeling (SEM) method to test the hypotheses. Thus, we formulated three direct hypotheses between three independent variables and one dependent variable. According to Kline (1998) we can confirm the hypothesis if the path test result is significant at T> 1.96 and P < 0.05 (Ogiemwonyi et al., 2020). In our study, direct hypotheses are proposed between three independent variables (e.g: ATT; SN; PBC) and one dependent variable (IPGP). All path coefficients are presented in Figure 2.
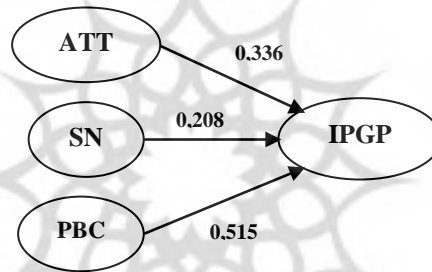
Figure.2. the Results of Hypothesis Testing

As shown in table 5, the results of the statistical test of the hypothesized paths shows satisfactory levels of t-statistics. Therefore, the three hypothesized relationships are found to have statistically significant value because T is greater than 1.96, at a significance level of $p < 0.05$. According to the statistical test, attitudes towards green products (ATT) significantly influence intentions to purchase green products (IPGP) [β_1=0.336, t=5.23, p<0.05]. Likewise, the relationship between subjective norms and IPGP was also found to be significant [β_2=0.208, t=3.152, p<0.05].

Table 5. Path Analysis Using Maximum Likelihood Estimates

Hypothesis	Relationship	Coefifcients (β.	Std. Error	t-value	p-value	Remarks
H1	(ATT)-52->(IPGP)	0.336	0.064	5,230	0.000	supported
H2	(SN)-53->(IPGP)	0.208	0.066	3,152	0.002	supported
H3	(PBC)-54->(IPGP)	0.515	0.060	8,638	0.000	supported
	(ZETA1)-->(IPGP)	0.578	0.067	8,618	0.000	

Note: T>1.96. Significant at the 0.05 level (p < 0.05).

Interestingly, the study also observed that, perceived behavioural control is positively and significantly related to IPGP [β_3=0.515, t=8.636, p<0.01] and found to be the most signiifcant predictors of IPGP followed by ATT and SN. However, the results also showed that SN had the least significant effect on IPGP compared to ATT and PBC. Accordingly, H1, H2 and H3 are supported.

6 Conclusions, Implications and Limitations
6.1 Discussion of the results

Recent literature on eco-friendly consumption increasingly aims to investigate the reasons that may lead consumers to reduce the environmental impact of their shopping habits and product consumption (Grimmer et al., 2016; De Canio et al., 2021). Some of these studies have focused on the role of green purchasing (Ajzen, 1991) integrating TPB model as a framework for green purchasing behavior (Paul et el, 2016; Kamalanon et al., 2022; Laheri et al., 2024; Alzubaidi et al., 2024; Jain and Singh, 2024). To address these research problems this study explores Algerian consumers' green product purchase intentions by applying a TPB framework. Our ifndings are very useful for explaining the intentions to purchase green products among algerian consumers' and proves the assumptions that if the consumer has a positive attitude toward green skincare products, positive influence of the social environment and positive perceived behavioural control, there will be a high probability that consumers' intentions will tend towards purchasing green products. Moreover, the results of our study revealed that the three variables of TPB model increased the predictive power of Algerians' behavioural intentions towards green products

The main findings of this study revealed that, perceived behavioural control is significantly related to intention to purchase green products by Algerian consumers' and found to be the most signiifcant predictors followed by attitude toward green products and subjective norms. Furthermore, the results of this study showed a positive effect of perceived behavioural control on the intention to purchase skincare products. Our result is inconsistent with the findings of Shimol et al. (2021) who did not demonstrate a relationship between perceived behavioural control and intention to purchase green cosmetics, but consistent with previous results reached by many studies on green consumption (Liobikiene et al., 2016; Wang et al., 2019; Ogiemwonyi, 2022; Nekmahmud et al., 2022; Ramadhanti et al., 2024). Perceived behavioural control includes the consumers'.

perception of the opportunities and resources needed to make a skincare product purchase, including money, information, time, and other personal ability factors (Ajzen, 1991; Liang, 2024). This means that consumers' feel they have the mental capacity and resources to buy green products, and as a result their willingness to buy also increases. Moreover, the study outcome suggests that attitude toward green product plays an important role in influencing algerian consumers' intentions to purchase green products, which is in complete agreement with previous studies (Paul et al., 2016; Jaiswal & Kant, 2018; Zheng et al. 2020; Sun et al., 2022; Nguyen, et al., 2023; Wang et al., 2024; Pontes et al., 2024; Laheri et al., 2024; Ramadhanti et al., 2024). This reflects consumers' positive evaluations of the green product, and thus positive attitude significantly enhances green purchase intention. Moreover, the organization in Algeria should target consumers who care about the environment and who buy green products because they have a positive attitude towards it. Therefore, when consumers have a positive attitude and greater concern for the environment, it will motivate them to make greater efforts to reduce their negative impact on the environment (Singh & Gupta, 2013; Paul et al., 2016). Thus, companies producing green products need to make more efforts to enhance consumers' positive attitudes towards products that do not cause harm to the environment, and highlight their health benefits. Companies must also work hard to conduct promotional campaigns for green products, raisese consumers' awareness and increase their beliefs and knowledge towards green consumption. Similarly, our findings showed the positive and significant effect of subjective norms on green purchase intention. This finding **goes** in line with Hsu et al. (2017); Zheng et al. (2020); Nekmahmud et al. (2022); Nguyen et al. (2023); Pontes et al. (2024) but in contrast with Paul et al. (2016); Chaudhary & Bisai (2018); Delistavrou, et al (2022); Wang et al (2024); Shehawy & Ali Khan (2024); Ramadhanti et al. (2024) and Alzubaidi et al (2024). Therefore, the subjective norms are an important predictor of intention to purchase green products and were found able to influence green consumption. This variable suggesting that the Algerian consumers' take into account the opinions and behaviors of people important to them (e.g., family members, colleagues, friends, or public figures) to make choices that are consistent with their expectations in the social environment they live in, which then affects their green purchasing intention.

6.2 Theoretical and Practical Implications

From a theoretical perspective, this study contributes to the literature in four aspects. First, through the results of the current study, we have confirmed the crucial role played by cognitive variables (i.e., perceived control), individual characteristics of consumers' (i.e., attitudes), and societal factors (i.e., subjective norms) in influencing consumers' intentions to purchase green products. Therefore, the analysis of the results enabled us to produce empirical evidence and contribute to the theoretical framework to confirm the influence of

consumers' attitudes towards green products, social norms, and their perceived behavioural control on intentions to purchase green products. Second, our research shows for the first time that the consumers in the study are convinced that they have control over their behavior to purchase eco-friendly skincare products, as this variable had the greatest influence. These results are in line with previous studies (Liobikiene et al., 2016; Wang et al., 2019; Ogiemwonyi, 2022; Nekmahmud et al. 2022; Ramadhanti et al., 2024). However, to support our research results, we need more empirical research in the same context that investigates the effect of control over behavior that encourages consumers to prefer eco-friendly products. Third, this study will provide a more fascinating insight into promoting attitudes towards green purchasing, using social elements, and providing resources that facilitate the choice of eco-friendly products as well as contribute to future studies. However, it is urgently necessary to sensitize and guide consumers in the context of cosmetic products towards healthy and green products. Thus, our theoretical framework provides useful insights into developing the use of 4Ps strategies for green marketing and promoting sustainable economy by warning consumers about the consequences of consuming environmentally harmful products. Thus, our model can contribute to providing valuable theoretical insights into green products.

This study contributes to the practical and managerial implications in three aspects. First, these valuable observations can provide essential advice to marketers and organizations that aim to achieve development by encouraging conscious purchasing that is concerned with the environment. Businesses may promote the development of green products and highlight the positive impact of green technology and sustainable manufacturing on the purchasing intentions and behaviors of environmentally conscious consumers through green marketing campaigns. Furthermore, governments may use these observations to promote sustainable development and formulate policies that encourage manufacturing that uses eco-friendly materials, thus contributing to achieving sustainable economic development that aims to protect the environment. Second, our study findings confirm the positive impact of consumer attitudes toward green products on purchase intention. Therefore, creating educational activities and building appropriate relationships with environmental organizations may help translate purchase intentions into actual consumer purchases (Shehawy & Ali Khan, 2024). Third, companies should invest in developing green products to meet the needs of environmentally conscious customers. Thus, they should study the market by adjusting the factors affecting purchasing of green products and promoting sustainable growth, which can help companies to establish consumer's positive attitudes and enhance their green purchasing intentions.

6.3. Limitations and Future Research

The limitations of the study can be classified into the following points. First, this research is concerned with studying green products in general. Therefore, the results of studies may differ if organic products; recyclable products or green certified products are chosen. Second, more relevant variables can be added such as: green environmental behavior; awarenessprice sensitivity; conditional value; green product value; green product trust; social media usage green thinking; green purchase behaviour and green product knowledge. Third, we recommend future studies to target larger samples size so that they can obtain data that express the research population. Fourth, we collected data using a paper questionnaire administered directly to respondents, so future research could increase the sample size by using an online survey. Finally, the study sample was limited to the Algerian consumers', moreover, economic, cultural and organizational differences that characterize each geographical area may affect the possibility of generalizing the results to other diverse contexts. Therefore, when conducting this type of study in the future, it should be tested by repeating this study in diverse geographical and cultural environments to test the strength of this study. This will help them design appropriate strategies that enable them to effectively promote sustainable behaviours in different geographic areas.

The authors declare that there are no conflicts of interest regarding this article

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