

Green product consumption behaviour, green economic growth and sustainable development: unveiling the main determinants

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Abstract

Purpose – The purpose of the current study is to help remove the obstacles to sustainable production and consumption by revealing the determinants of green consumption behaviour, which is one of the precursors of sustainable economic growth. This study aims to expand the theory of planned behaviour (TPB) model and contribute to the relevant literature by investigating the factors of social media usage, social media marketing and digital marketing interactions that have not been investigated before in relation to green product purchasing behaviour.

Design/methodology/approach – This study examines the effect of the extended TPB model on consumers' intention to buy green products in Turkey, which has a Middle Eastern culture and is a developing economy. In the study, data collected from 409 participants with the questionnaire method were analysed using SmartPLS 4.0 and IBM SPSS 26 statistical programs.

Findings – The study findings revealed that all the structural elements of TPB (attitude, subjective norms, personal behaviour controls) and social media marketing and digital marketing interactions contribute to consumers' green product purchasing behaviour. The study findings also demonstrated that the use of social media is not effective in the purchasing of green products.

Originality/value – Understanding consumers' perspective on purchasing green products is crucial for policymakers, businesses and marketers, as it helps formulate appropriate strategies to support sustainable economic growth. In this respect, this study has important implications for sustainable consumption and production. In addition, to the best of the authors' knowledge, the study is the first to examine consumers' green product purchasing behaviour in the context of sustainable economy.

Keywords Green economic growth, Sustainable development, Green product, Purchasing behaviour, Digital marketing interactions, Social media marketing, Social media usage, TPB model, Turkey

Paper type Research paper



1. Introduction

Developed and developing countries have long considered the negative effects of consumption on the environment (Ramayah *et al.*, 2010). Promoting green purchasing

behaviour has become a critical step for the sustainable growth of nations (Ahmad and Zhang, 2020). Ahmad and Zhang (2020) stated that consumers can increase sustainability by purchasing green products. Zhang *et al.* (2018) stated that green recycling, that is, purchasing green products, is critical for sustainability. All these trends have led many companies and governments to invest in activities that will increase green production (Ahmad and Zhang, 2020; D'Souza *et al.*, 2006; Qi *et al.*, 2021).

In addition, increasing attention to environmental problems in today's world forces governments and businesses to produce green products (Younis *et al.*, 2016) that do not deplete natural resources (Bressanelli *et al.*, 2020). Therefore, to maintain sustainability and development, governments and companies face pressure from consumers to make investments in green transformation (El-Kassar and Singh, 2019) because increasing global warming and environmental degradation have turned into a great concern in all countries of the world (Root *et al.*, 2003). This has caused the green economic development model to be more accepted all over the world to reduce the increasing global warming and environmental degradation (He *et al.*, 2017). To overcome these problems, governments develop and implement various policies for economic growth based on green consumption and production (Amini *et al.*, 2017). Supporting green economic growth is seen as an important step in the construction of an environmentally sensitive green consumer civilization as well as in the reduction of environmental pollution (Liu *et al.*, 2011). This cannot be achieved only with the strategies to be implemented by governments. Together with governments, consumers need to increase their green consumption to support green economic growth. Only in this way can countries achieve green economic growth (Pan *et al.*, 2018; Fahimnia *et al.*, 2015). In this context, the European Commission plans to increase the consumption of green products, which will reduce the amount of plastic waste (EC, 2019).

The OECD (2011, p. 4) defines green growth as a way of promoting economic growth and development while ensuring the sustainable use of natural resources without compromising the ability of future generations to meet their needs. In this study, we investigate the green purchasing behaviour, which is one of the driving forces of sustainable economic growth, within the context of Turkey. Turkey is an emerging market as the world's 17th and Europe's 6th largest economy. Turkey promotes greener consumption and production through government initiatives, as in other emerging economies (Sohag *et al.*, 2019) because to ensure sustainable growth, it is essential to protect natural resources. The relatively lower rate of green consumption in Turkey than in Western countries is an important factor in selecting Turkey for this study (Armutcu *et al.*, 2023).

Green consumption is the key for the development of a sustainable economy. Promoting green consumption will help support the development of green industries that will support green recovery (Hong *et al.*, 2023). In the past decade, consumer demand for green products has increased significantly, with very important consequences for the environment (Oana, 2014; Qi *et al.*, 2020). These trends have led many companies to produce green products (D'Souza *et al.*, 2006; Qi *et al.*, 2021) and to green production-oriented transformations (Brahmah, 2015). In addition, the perspective on environmental problems and green product consumption differs from society to society (Armutcu *et al.*, 2023). This study aims to contribute to the limited literature on green product purchasing in Turkey, a multicultural country with different consumption patterns. Therefore, Turkey was selected as the universe of the study. In addition, few studies have explained how to promote sustainable economic growth through green product purchasing. In this connection, the current study is believed to help clarify the relationship between green product purchasing behaviour and sustainable economic growth. Therefore, to contribute to the relevant literature, this study

aims to examine the green product purchasing behaviours of consumers living in Turkey with the extended theory of planned behaviour (TPB) model (Armutcu *et al.*, 2023).

Researchers have suggested that new constructs can be added to the original TPB model and that TPB is an open model (Yadav and Pathak, 2016; Yazdanpanah and Forouzani, 2015). This will increase the predictive power of the TPB model and help us better understand certain events. Therefore, considering the nature of green product purchasing behaviour, the current study extends the original framework (attitude, subjective norms, perceived behavioural control) of the TPB by adding social media usage, social media marketing and digital marketing interactions to better predict consumers' intention. In the current literature, it is stated that the TPB model is sufficient to explain green product purchasing behaviours (Paul *et al.*, 2016; Yadav and Pathak, 2017; Yeh *et al.*, 2021). However, few studies have investigated the impact of social media usage, social media marketing and digital marketing interactions on green purchasing behaviour. Social media and its applications are a part of daily life in Turkey as well as around the world. In 2022, 80.7% of the population in Turkey; that is, approximately 69.9 million people who use social media along with the internet spend an average of 8 h per day using the internet (We Socialize, 2022; www.tuik.gov.tr). This presents an important opportunity for countries and companies to foster green product purchasing habits through social media. Although it is known that social media usage (Stephen, 2016), social media marketing (Kim *et al.*, 2008; Tewari *et al.*, 2022; Lee, 2008; Pop *et al.*, 2020; Nekmahmud *et al.*, 2022; Armutcu *et al.*, 2023) and digital marketing interactions (Dholakia and Bagozzi, 2001; Bailey *et al.*, 2016; Armutcu *et al.*, 2023) significantly affect consumers' purchasing behaviour, their effects on green product purchasing behaviour and sustainable economic growth have not yet been fully investigated.

In this connection, the current study aimed to reveal the underlying determinants of green product purchasing behaviour of consumers. In this way, countries and businesses will be able to contribute to sustainable green economic growth by developing policies that will increase consumers' motivation to purchase green products. The development of green products, the protection of the ecological environment and the promotion of sustainable economic development have become the consensus in many industrialized countries (Zhang and Zhao, 2012).

Within the context of the sustainable green economic growth and development strategy, environmental performance is an important element for the whole world (Zhang and Zhao, 2012). At this point, revealing the factors affecting the green purchasing behaviour of consumers has become an important phenomenon for the whole world because consumption behaviour is an important element for sustainable green economic growth and development (De Bernardi and Tirabeni, 2018). Moreover, this study investigates the role of social media and digital marketing in green product purchasing behaviours in today's world where digital consumption is increasing. In this respect, all these developments and lack of research in the relevant literature (Khatami *et al.*, 2023) constitute the main motivation for the conduct of this study.

In this context, this study provides important contributions to the existing literature by determining the green product purchasing behaviour of consumers living in Turkey. In addition, this study is expected to be an important data source for researchers who will work in this field in the future by determining the factors having the capacity of being a driving force in the green product purchasing behaviour of consumers.

In this study, the accuracy of the proposed model and the relative importance of the questions are determined by using the structural equation model (SEM). In addition, within the context of the study, the problems and hypotheses of the study are investigated with SEM. This study aims to answer the following research questions:

- RQ1.* Does the TPB have the capacity to identify drivers of green product purchasing behaviour of consumers in Turkey?

- RQ2. What is the relative importance of the factors driving the green product purchasing behaviour of consumers in Turkey?
- RQ3. Can social media usage, digital marketing interactions and social media marketing explain the green product purchasing behaviour of consumers in Turkey?
- RQ4. What is the relative importance of green product consumption on sustainable green economic growth?

The current study is structured as follows. In Section 2, following the introduction part, the literature review and the conceptual framework are given. Then, in Section 3, the methodology of the study is explained, and in Section 4, the results of the empirical analysis are presented. Finally, the results of the study are given in Section 5 of this paper, whereas Section 6 presents the general discussion, implications and limitations and directions for future research.

2. Literature review and hypothesis development

2.1 *Consumer behaviour, green product and green economic growth*

Although countries and companies accept the importance of changes in consumer behaviour in the policies they will create, studies in the relevant literature show that consumer behaviour has not been yet sufficiently understood. There is no definite conclusion about which factors are important in consumer behaviour and the possible consequences of changing these factors (Rhein and Schmid, 2020). Countries and companies also know that the increasing use of non-green products causes global environmental problems, and also know that green product production and consumption can be a solution to these problems (Beaumont *et al.*, 2019).

Changing consumer behaviours force countries and businesses to carry out their activities by taking into account the environmental problems in the production process of the products needed by the society. In this way, not only economic growth but also sustainable economic growth, that is, green economic growth, can be accomplished. In this context, determining the antecedents of green product purchasing behaviour of conscious consumers is important for sustainable growth (De Bernardi and Tirabeni, 2018).

From this point of view, this study focusses on the factors influential on the green product purchasing behaviour. The economic growth policies that do not take into account the green product purchasing behaviour of consumers are not sustainable. This quantitative study, created in this context, enables us to understand the determinants that affect the green product purchasing behaviour of consumers. In addition, this study also focuses on the effect of social media which digitalization has made an indispensable part of our lives and which affects consumers' green product purchasing behaviour (Sparks *et al.*, 2013).

2.2 *Theory of planned behaviour and green product purchase*

The TPB is based on the theory of reasoned action developed by Ajzen and Fishbein (1975). The main goal of the TPB model is to measure the change in individuals' behaviour towards a product or service (Ajzen, 1991). In addition, the TPB can be used by adding new constructs to its original structure and expanding it (Ajzen, 1991). The TPB with three main factors (attitude, subjective norms and perceived behavioural control) in its original structure is a model used to identify the factors affecting people's behaviours (Morris and Venkatesh, 2000) and which is widely used in the literature (Soliman, 2021; Ajzen, 1991). Moreover, the TPB has been used in many studies to detect green product purchasing behaviour of consumers (Yadav and Pathak, 2017; Yeh *et al.*, 2021).

Attitude, one of the main elements of the TPB, is an important factor in individuals' evaluation of the green product purchasing process positively or negatively (Li *et al.*, 2021). Attitude can also be defined as consumers' acceptance of innovation in the green product purchasing process. In this context, the attitude of people is a very important factor in understanding their purchase intentions (Ajzen, 1991; Fabrigar and Wegener, 2010; Kumar *et al.*, 2021). Accordingly, we propose the following hypothesis:

H1. Consumer attitude has an effect on green product purchasing intentions.

Subjective norm, another construct in the TPB, refers to whether the behaviour of individuals in the face of an event will be under the influence of their environment (Nguyen *et al.*, 2019). According to the subjective norm, the green product purchasing behaviour of consumers will be affected positively or negatively from the type of reaction they receive from their environment in the process of purchasing green products (Ajzen, 1991). In addition, it is seen in the studies conducted in the relevant literature that the subjective norms of individuals have a significant effect on their intention to purchase green products (Kumar *et al.*, 2021; Yadav and Pathak, 2017). Accordingly, we propose the following hypothesis:

H2. Subjective norm has an effect on consumers' green product purchase intentions.

Perceived behavioural control, which is the last construct of the TPB, can be expressed as people's control over their green product purchasing behaviour (Paul *et al.*, 2016). This indicates that individuals having a high level of control over their green product purchasing behaviour will positively consider their green product purchase intention (Ajzen, 1991; Ajzen and Sheikh, 2013). PBC has a significant impact on purchasing behaviour for green products (Paul *et al.*, 2016; Yadav and Pathak, 2017; Kumar *et al.*, 2021). According to the literature, we propose the following hypothesis:

H3. Perceived behavioural control has an effect on consumers' green product purchase intentions.

The TPB can be used frequently by many studies by adding new variables to its original structure to determine the intentions of individuals (Ajzen, 1991; Do Paco *et al.*, 2019; Paul *et al.*, 2016; Yadav and Pathak, 2017). In addition, the TPB model has been used in many studies in the relevant literature (Paul *et al.*, 2016; Yadav and Pathak, 2017; Choi and Johnson, 2019; Ahmad *et al.*, 2020; Yeh *et al.*, 2021) as a behavioural theory in order to determine the green product or service purchase intentions and behaviours of consumers. With the current study, it is aimed to test the applicability of the expanded TPB framework to predict green product purchase intentions of consumers in Turkey. In this direction, we test the TPB model by extending it with three new variables (social media usage, social media marketing and digital marketing interactions) added to the original framework of the TPB model.

With these variables added to the original framework of the TPB model, we also investigate the effect of increasing social media usage on digital consumption behaviours because with the development of the internet in today's world, social media and its applications have become an indispensable part of daily life in Turkey as well as all over the world (Stephen, 2016). In Turkey, in 2022, 80.7% of the population, that is, 69.9 million people, use social media together with the internet, and people who use the internet (social media) spend an average of 8 h a day (We Are Social, 2022; www.tuik.gov.tr). This reveals the necessity of determining the effect of social media on consumers' green product purchasing behaviour because social media has a significant impact on consumers'

purchasing behaviour (Stephen, 2016). In addition, it is known that consumer experiences shared by consumers through social media or digital marketing channels make a positive contribution to consumers' purchasing behaviour (Wilcox and Stephen, 2013; Lamberton *et al.*, 2013).

Digital marketing interactions are known as platforms that consumers use when purchasing products through social media (Dholakia and Bagozzi, 2001) and have a positive effect on consumers' green purchasing behaviour (Bailey *et al.*, 2016). In addition, examining the interactions and experiences about a product in digital environments strengthens the purchasing behaviour of consumers (Bettman, 1979). Green product promotions by businesses and countries through digital marketing channels increase environmental awareness of consumers (Alamsyah *et al.*, 2020) and improve their green purchasing behaviour (Do Paco *et al.*, 2019) by encouraging them to adopt green life patterns (Zubair *et al.*, 2020) and thus contributes to green economy. In the current study, the effect of social media, which is becoming increasingly important in consumers' purchasing behaviour, on green product purchasing behaviour is measured. In light of the information in the relevant literature, we propose the following hypotheses:

- H4. Social media usage has an effect on consumers' green product purchase intentions.
- H5. Social media marketing has an effect on consumers' green product purchase intentions.
- H6. Digital marketing interactions have an effect on consumers' green product purchase intentions.

In this study, we test the applicability of the TPB in predicting the intention of consumers to purchase green products in Turkey. In addition, the current study has expanded the original framework (attitude, subjective norms, perceived behavioural control) of the TPB by adding the social media usage, social media marketing and digital marketing interactions to predict the intention of consumers to purchase green products in Turkey (Figure 1). It is known in the existing literature that social media usage, social media marketing and digital marketing interactions have a positive effect on green purchasing behaviour, but this study is the first to predict the intention of consumers to purchase green products in Turkey.

3. Methodology

3.1 Research model and methods

This study aimed to reveal the underlying determinants of green product purchase intention of consumers. The population of the study consists of individuals who have green product knowledge and use social media applications. The online questionnaire was distributed via email, social media and other communication channels (Figure 2). Informed consent was obtained from all the participants by giving detailed written information about the study. Ethical approval was obtained from Gaziantep University Ethics Committee in Turkey, Approval No: 10.11.2022/258274. A pilot study was first conducted to reduce common bias and increase the reliability of the results. Within the context of the study, the non-random convenience sampling method was used and online questionnaires were administered to a total of 409 people. In the convenience sampling method, the researcher begins to sample, starting with the most accessible respondents, until he/she reaches a group of the size he/she needs. When conducting convenience sampling, as the sample should accurately represent the main population, it is attempted to reach diverse participants in as many different locations as possible (Cohen *et al.*, 1988). Additionally, convenience sampling is the most

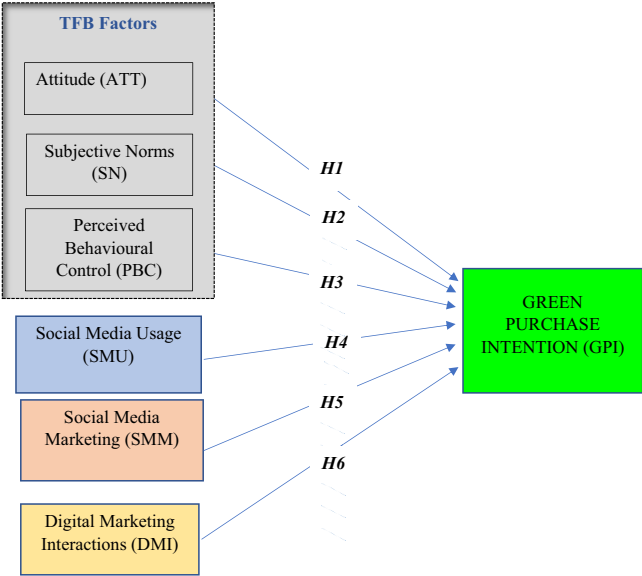


Figure 1.
Conceptual research
model

Source: Authors' own work

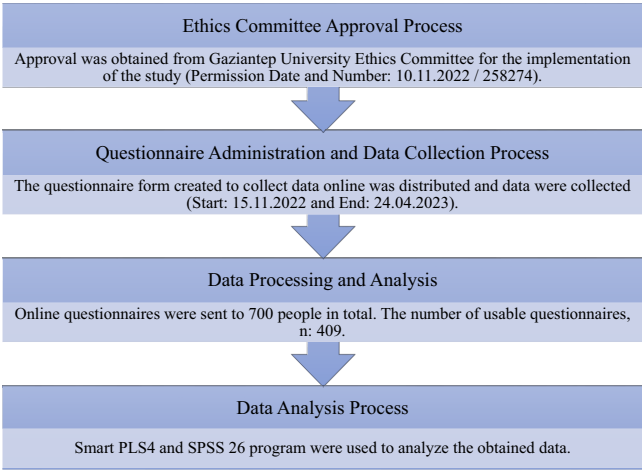


Figure 2.
Data collection flow
chart

Source:Authors' own work

commonly used and accepted sampling strategy in quantitative research in the literature (Suri, 2011; Benoot *et al.*, 2016). In the method developed by Soper (2022) to calculate the sampling size for *a priori* structural equation models (SEM), it was determined that 150 samples would be sufficient. The calculation method developed by Soper (2022) is accepted

and used in the related literature (Cohen, 1988; Westland, 2010). In addition, Tabachnick and Fidell (2007) suggest $8 + 50$ ($19 \times 8 + 50 = 202$) participants per variable. According to Kline (2011), an acceptable sample size should be at least 10 cases per measurement. According to this assumption, the number of samples used in the study ($n = 290$) is sufficient. To obtain more accurate responses, the questionnaire (29 questions) was translated into Turkish from English, and respondents were asked to answer on a five-point Likert-scale ranging from 1 = strongly disagree to 5 = strongly agree. The data were analysed using Smart PLS4 and IBM SPSS 26 to assess the measurement model and conduct structural equation modelling (SEM).

3.2 Research instrument

Purchase intention (PI) is the dependent variable used in the study. In addition to demographic questions, the independent variables used in the study were developed as six constructs:

- (1) attitude (ATT);
- (2) subjective norms (SN);
- (3) perceived behavioural control (PBC);
- (4) social media usage (SMU);
- (5) digital marketing interactions (DMI); and
- (6) social media marketing (SMM).

Detailed information about the independent and dependent variables is included in [Appendix 1](#).

3.3 Descriptive data

The demographic characteristics of the participants who participated in the study are given in [Table 1](#). As can be seen in [Table 3](#), 58.7% of the participants are male and 41.3% are female. Of the participants, 196 are high school graduates, 108 hold an associate's degree, 95 hold a bachelor's degree and 10 hold master's or doctoral degree. A majority of the participants (79.5%) have an average monthly income of 3001 TL and above. Finally, [Table 1](#) shows that 175 of the participants are between 35 and 44 years of age and 98 of them are between 18 and 24 years of age.

4. Findings and discussion

4.1 Reliability and validity analysis

In the study, first of all, the values of Cronbach's alpha (CA), composite reliability (CR) and average variance extracted (AVE) variables were calculated to check for internal consistency, reliability and validity. Cronbach's alpha value was found to be between 0.612 and 0.868 ([Table 2](#)), and these values are above the accepted threshold (0.60–0.70) (Hair *et al.*, 2017). Likewise, composite reliability values are between 0.795 and 0.898 ([Table 2](#)) which are acceptable values for social sciences (Hair *et al.*, 2017). Average variance extracted values range from 0.558 to 0.701 ([Table 2](#)), and all of these values are above the 0.50 threshold recommended by Fornell and Larcker (1981). According to [Table 3](#), which shows the coefficient of AVE values used for the discriminant validity test of all the constructs, the correlation coefficients in any construct do not exceed the AVE values in a single construct (Hair *et al.*, 2017; Fornell and Larcker, 1981). This indicates that all the constructs have discriminant validity (Bagozzi *et al.*, 1991).

Table 1.
Demographic profile

Variables	Frequency	%
<i>Gender</i>		
Male	240	58.7
Female	169	41.3
Total	409	100
<i>Education</i>		
High school	196	47.9
Associate's degree	108	26.4
Bachelor's degree	95	23.2
Master's and doctoral degree	10	2.4
Total	409	100
<i>Age</i>		
18–24	98	24.0
25–34	86	21.0
35–44	175	42.8
45–55	44	10.8
55 and above	6	1.5
Total	409	100.0
<i>Income</i>		
1,000TL and less	52	12.7
1,001–3,000TL	32	7.8
3,001–7,000TL	109	26.7
7,000–10,000TL	147	35.9
10,000TL and more	69	16.9
Total	409	100

Source: Authors' own work

Table 2.
Construct reliability
and validity

	Cronbach's alpha	Composite reliability (rho_c)	AVE
Attitude	0.791	0.862	0.610
Digital marketing interactions	0.841	0.894	0.678
Green purchase intention	0.757	0.845	0.578
Perceived behavioural control	0.612	0.795	0.566
Social media marketing	0.868	0.898	0.558
Social media usage	0.789	0.875	0.701
Subjective norms	0.716	0.841	0.637

Source: Authors' own work

5. Results

Table 4 shows the factor loadings, means, standard deviations, *t*-statistics and VIF values for all the items. To evaluate the linearity of the variables, VIF values were checked first and it was determined that the VIF values were below the threshold value of 3.3 (Kock, 2015). These results show us that there is no linearity problem between the variables. On the other hand, it was determined that the factor loading values used to calculate the external loads of the items were greater than the threshold value of 0.708 (Hair *et al.*, 2017). The SMM5 item (0.687) with a factor loading value less than 0.708 was checked before removing it from the model, and it was not excluded from the model because it had a VIF value (1.872) less than

	ATT	DMI	GPI	PBC	SMM	SMU	SN	Green product consumption behaviour
Attitude	<i>0.781</i>							
Digital marketing interactions	0.239	<i>0.823</i>						
Green purchase intention	0.410	0.632	<i>0.760</i>					
Perceived behavioural control	0.542	0.486	0.548	<i>0.752</i>				
Social media marketing	0.347	0.745	0.623	0.578	<i>0.747</i>			
Social media usage	0.248	0.697	0.542	0.472	0.729	<i>0.838</i>		
Subjective norms	0.524	0.517	0.545	0.611	0.521	0.471	<i>0.798</i>	

Note: Values (italic) on the diagonal represent the square root of the AVE while the off-diagonals are correlations

Source: Authors' own work

Table 3.
Discriminant validity

	Loadings	Mean	STDEV	T-values	VIF	SRMR	NFI
ATT1	0.762	0.757	0.049	15.476	1.652	0.070	0.720
ATT2	0.777	0.774	0.035	22.277	1.710		
ATT3	0.793	0.791	0.032	24.430	1.633		
ATT4	0.792	0.793	0.028	27.888	1.426		
DMI1	0.782	0.779	0.032	24.571	1.833		
DMI2	0.837	0.836	0.020	42.083	2.208		
DMI3	0.860	0.859	0.016	54.545	2.385		
DMI4	0.813	0.812	0.024	34.126	1.998		
GPI1	0.740	0.738	0.034	21.699	1.511		
GPI2	0.769	0.768	0.031	24.753	1.620		
GPI3	0.789	0.789	0.023	34.693	1.565		
GPI4	0.740	0.738	0.037	19.808	1.449		
PBC1	0.835	0.834	0.024	34.291	1.372		
PBC2	0.731	0.729	0.044	16.442	1.255		
PBC3	0.682	0.679	0.050	13.604	1.159		
SMM1	0.749	0.748	0.031	24.023	1.854		
SMM2	0.770	0.769	0.026	30.123	2.005		
SMM3	0.751	0.751	0.025	30.101	1.845		
SMM4	0.747	0.745	0.031	24.251	1.752		
SMM5	0.687	0.685	0.038	17.933	1.872		
SMM6	0.773	0.772	0.027	28.890	2.210		
SMM7	0.749	0.747	0.030	25.013	1.894		
SMU1	0.824	0.824	0.021	38.704	1.723		
SMU2	0.874	0.874	0.014	62.186	2.240		
SMU3	0.780	0.778	0.033	23.575	2.048		
SMU4	0.723	0.721	0.038	19.153	1.705		
SN1	0.785	0.784	0.031	25.589	1.334		
SN2	0.809	0.808	0.025	31.743	1.447		
SN3	0.800	0.799	0.031	25.490	1.446		

Source: Authors' own work

Table 4.
Factor loadings, VIF and model fit

3.3 (Ramayah *et al.*, 2018). Table 4 shows the goodness of fit values of the research model, and Schumacker and Lomax (1996) consider the standardised root mean square residual (SRMR) value between 0.05 and 0.08 as an indication of a good model fit. When the goodness of fit values are examined, it is seen that the SRMR value is lower than the threshold value of

0.08 (0.070) (Hu and Bentler, 1999). However, the Normed Fix Index (NFI) value for the model fit value should be between 0 and 1 and values close to 1 are accepted as good fit values (Schermelleh-Engel *et al.*, 2003). In this direction, the NFI value for the structural model of this study, which appears in Table 4, was determined as 0.720, indicating a good model fit.

Table 5 and Figure 3 show the results of the analyses performed. As seen in Table 5, the attitude positively affected the green purchase intention (path coefficient = 0.128, $p > 0.019$), and therefore *H1* was supported. On the other hand, the effects of subjective norms (path coefficient = 0.129, $p > 0.019$), perceived behavioural control (path coefficient = 0.130, $p > 0.046$) and social media marketing (path coefficient = 0.190, $p > 0.014$) were positive and significant on green product purchase intentions. Thus, *H2*, *H3* and *H4* were accepted.

According to Table 5, social media usage (path coefficient = 0.016, $p > 0.832$) does not have a significant effect on green purchase intention. Thus, *H5* was not accepted. Finally, digital marketing interactions were found to have a positive and significant effect on green purchase intention (path coefficient = 0.322, $p < 0.000$). Thus, *H6* was supported.

6. Discussion

Raghavan and Vahanti (2009) state that the concept of green consumption is becoming increasingly popular in developing countries. This is due to the fact that consumers tend to support more environmentally friendly organisations (Han and Kim, 2010). In this connection, the current study tries to understand consumers' behaviours towards purchasing green products in the context of a developing country. Environmentally friendly businesses support sustainable economic growth by adopting a sustainable production method. Consumers tend to support green production by purchasing the products of these businesses (Kim *et al.*, 2013). Therefore, understanding the consumer's intention to purchase green products is crucial for policymakers, businesses and marketers, as it helps formulate appropriate strategies to support sustainable economic growth (Chan and Lau, 2002). At the same time, understanding the determinants of consumers' green consumption behaviour will help to remove the barriers to sustainable production and consumption (Welsch and Kühling, 2009). Tan *et al.* (2022) state that one of the key concepts of sustainable economic growth is to determine the factors underlying the green consumption behaviour of individuals. Changes in consumer preferences have forced companies to develop and adopt green strategies that will promote them as socially

Table 5.
Regression results
and hypothesis
testing

	Path coefficients	STDEV	t-statistics	P values	Hypothesis supported
<i>H1</i> . Attitude → Green purchase intention	0.128	0.054	2.346	0.019**	Accept
<i>H2</i> . Subjective norms → Green purchase intention	0.129	0.055	2.342	0.019**	Accept
<i>H3</i> . Perceived behavioural control → Green purchase intention	0.130	0.065	1.994	0.046**	Accept
<i>H4</i> . Social media marketing → Green purchase intention	0.190	0.076	2.456	0.014**	Accept
<i>H5</i> . Social media usage → Green purchase intention	0.012	0.058	0.198	0.843	Reject
<i>H6</i> . Digital marketing interactions → Green purchase intention	0.322	0.077	4.207	0.000**	Accept
Note: **denotes significance at 5% level					
Source: Authors' own work					

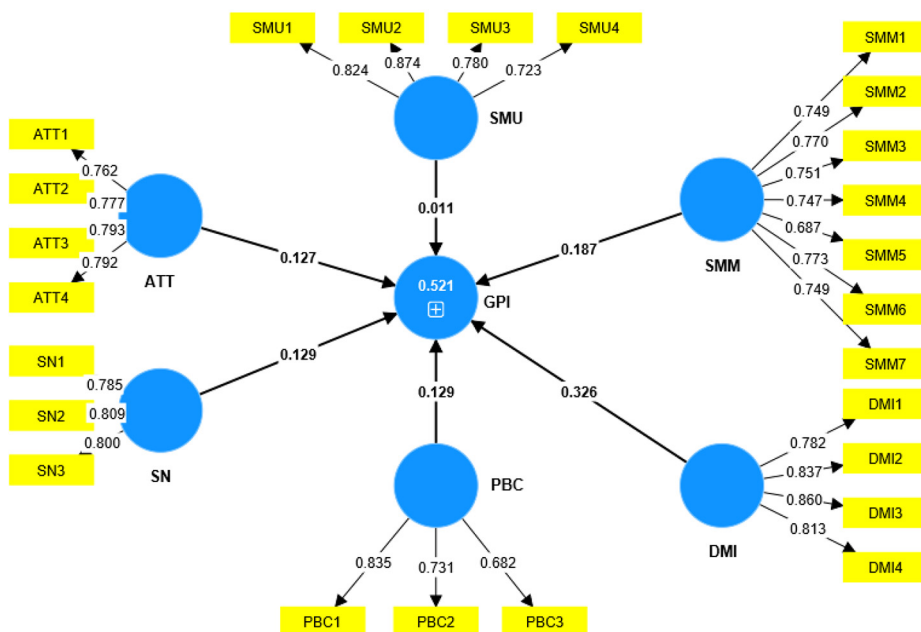


Figure 3.
Structural equation model

Source: Authors' own work

and environmentally responsible enterprises. In this respect, this study has important implications for the determination and development of sustainable consumption and production patterns.

The current study tests the applicability of the TPB in predicting the intention of consumers to purchase green products in Turkey. In addition, the current study has expanded the original framework (attitude, subjective norms, perceived behavioural control) of the TPB by adding the social media usage, social media marketing and digital marketing interactions to predict the intention of consumers to purchase green products in Turkey.

According to the findings of the study, the attitude, subjective norms and perceived behavioural control constructs included in the original structure of the TPB have a positive contribution to the green product purchase intention of consumers in Turkey. It was determined that the attitude affects the green product purchasing behaviour of consumers significantly and positively. This finding of the current study is in line with the findings of studies in the literature (Kumar *et al.*, 2021; Nguyen *et al.*, 2019). It can be said that consumers' own evaluations, that is, their attitudes, have a significant effect on their intention to purchase green products.

Moreover, it was determined that subjective norms have a significant effect on consumers' intention to buy green products in Turkey. This indicates that consumers who have a positive thought about purchasing green products are more likely to purchase these products than other consumers. Nejadi *et al.* (2011) state that subjective norms are effective on green purchasing behaviour, and that they may result in a large increase in actual purchasing behaviours. In their study, Soodan and Pandey (2016) determined that the emotions of consumers affect their purchasing behaviour. This finding of the current study is similar to the findings reported in the studies in the relevant literature (Nejadi *et al.*, 2011; Soodan and Pandey, 2016; Kumar *et al.*, 2021; Yadav and Pathak, 2017; Hamzah and Tanwir, 2021).

It was determined in the current study that the perceived behavioural control, which is an important factor on whether an individual will perform certain behaviour, has a significant and positive effect on consumers' green product purchasing behaviour. According to [Ajzen and Madden \(1986\)](#), the higher the consumers' perception of PBC is, the higher the probability of their performing that behaviour will be. [Dahiya et al. \(2021\)](#) state that low awareness of consumers negatively affects their purchasing of sustainable products (organic food, etc.). [Pang et al. \(2023\)](#) point out that the behavioural characteristics of individual consumers are an important factor in achieving sustainable economic income for businesses. Thus, based on the findings of the study, it can be stated that the people and sources (perceived behavioural control) that are influential on consumers' green product purchasing behaviour have a decisive power. This finding of the current study concurs with the findings reported in some studies in the literature ([Kumar et al., 2021](#); [Joshi and Srivastava, 2020](#); [Yadav and Pathak, 2017](#); [Wu and Chen, 2014](#)).

Surprisingly, social media usage was found to have no significant effect on consumers' intention to purchase green products in Turkey. Finally, in the current study, it was determined that social media marketing and digital marketing interactions have a significant and positive effect on consumers' green product purchasing behaviour. Social media marketing that consumers are exposed to makes a positive contribution to their green product purchasing behaviour. In addition, digital marketing interactions, which are effective in consumers' green product purchasing behaviour, appear as a determining factor in consumers' purchase intentions and decisions. It can be stated that consumers are highly influenced by digital marketing interactions, which include information about the experience of others about the product they want to buy. This finding of the current study is similar to the findings reported by some studies in the literature ([Kim et al., 2008](#); [Tewari et al., 2022](#); [Lee, 2008](#); [Pop et al., 2020](#); [Nekmahmud et al., 2022](#)).

6.1 Implications and recommendations

It is expected that this study will provide important contributions to the existing literature by determining the antecedents of consumers' green product purchasing behaviour and provide guidance for countries and businesses in determining their policies to reduce pollution. While there are studies on consumers' purchasing behaviours in the existing literature, there is a limited number of empirical studies investigating green product purchasing behaviours in Turkey by expanding the original framework of the TPB model (attitude, social norms and perceived behavioural control) with the addition of new constructs (social media usage, social media marketing and digital marketing interactions).

With the findings obtained in the current study, governments and businesses will be able to contribute to the reduction of environmental pollution by increasing the use of green products through the implementation of policies and activities focused on the factors that are influential on consumers' green product purchasing behaviour. Countries can make contributions to green economic growth by promoting green product production specifically for businesses and enforcing mandatory transformations (green packaging, green production process, green energy, reuse law, recycling incentive, waste management, etc.). Businesses, on the other hand, will be able to make significant contributions to the process by carrying out more green social media marketing activities to increase the consumption of green products together with the country administrations. In this respect, it should not be forgotten that using and producing green products is the main path to sustainable green economic growth.

6.2 Limitations and directions for future research

In this study, we test the applicability of the TPB in predicting the intention of consumers to purchase green products in Turkey. In addition, the current study has

expanded the original framework (attitude, subjective norms, perceived behavioural control) of the TPB by adding the constructs of social media usage, social media marketing and digital marketing interactions to predict the intention of consumers to purchase green products in Turkey. This study firstly explains the green product purchasing behaviour of consumers with the TPB model. In addition, this study extended the TBP model with three new factors. This study is limited to measuring green product purchasing behaviours of consumers. Future researchers in this field should expand this model by applying it to different age groups and re-examine its effects on consumers' green product purchasing behaviour. In addition, only the consumers living in Turkey and only the green products are addressed in the current study, which is another limitation of the study. These findings determined within the scope of the study may show differences for different countries. Moreover, the number of the male participants is higher than that of the female participants in this study. This is another limitation in terms of the generalisability of the results.

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Further reading

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Construct	Code	Items	Source
Attitude (ATT)	ATT1	It is wise to buy green products to protect the environment	Armutcu <i>et al.</i> (2023), Cheung <i>et al.</i> (2017), Wang <i>et al.</i> (2020), Sun and Wang (2020), Ajzen (1991)
	ATT2	It is a good idea to buy green products	
	ATT3	I support buying green products	
	ATT4	I hold a supportive attitude toward buying green products	
Subjective norms (SN)	SN1	Most of the people who are important to me support my purchases of green products	Armutcu <i>et al.</i> (2023), Cheung <i>et al.</i> (2017), Wang <i>et al.</i> (2020), Sun and Wang (2020), Ajzen (1991)
	SN2	If I purchase green products, people who are important to me will also do so	
	SN3	Those who I think are valuable to me would prefer me to buy green products	
	PBC1	I have enough time, resources, money and willingness to buy green products	
Perceived behavioural control (PBC)	PBC2	I know where to purchase green products	Armutcu <i>et al.</i> (2023), Cheung <i>et al.</i> (2017), Wang <i>et al.</i> (2020), Sun and Wang (2020), Ajzen (1991)
	PBC3	I am fully confident that I should buy or use green products	
	SMU1	My engagement on social media influences my green products purchase	
	SMU2	I use SM to search for information about green products	
Social media marketing (SMM)	SMU3	Contents about green products on SM are trustworthy	Bailey <i>et al.</i> (2016), Tewari <i>et al.</i> (2022), Gunawan and Huang (2015), Pop <i>et al.</i> (2020), Armutcu <i>et al.</i> (2023)
	SMU4	Contents about green products on SM are believable	
	SMM1	I receive information from clients on social media who have informed themselves that green products can contribute to human health and protect the environment	
	SMM2	Using social media to search for information about green products that I am thinking about buying is very fashionable	
	SMM3	I would like to share information from social media about green products with my friends	Logan <i>et al.</i> (2012), Hynes and Wilson (2016), Erkan and Evans (2016), Armutcu <i>et al.</i> (2023)
	SMM4	Social media marketing is a good source of product information and supplies relevant product information	
	SMM5	Social media advertising provides timely information	
	SMM6	Social media advertising is a good source of up-to-date product information	
	SMM7	Social media advertising is a convenient source of product information	

(continued)

Table A1.
Research instrument
description

Table A1.

Construct	Code	Items	Source
Digital marketing interactions (DMI)	DMI1	I use social media channels to search for information about green products	Amaro <i>et al.</i> (2016), Nekmahmud <i>et al.</i> (2022), Armutcu <i>et al.</i> (2023)
	DMI2	I use social media channels to read other people's experiences and opinions about the green product	
	DMI3	I use social media channels to check people's comments about the green product	
	DMI4	I use social media channels to find and discover people's green product recommendations	
Green purchase intention (GPI)	GPI1	I plan to purchase green products in the future	Muca and Zeqiri (2020), Armutcu <i>et al.</i> (2023), Cheung <i>et al.</i> (2017), Wang <i>et al.</i> (2018), Sun and Wang (2020), Ajzen (1991)
	GPI2	I am willing to purchase green products	
	GPI3	I intend to pay more for green products	
	GPI4	I will recommend green products to other people	
Source: Authors' own work			

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