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Article

Exploring Factors Affecting Sustainable Consumption Behaviour

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Abstract: Business development policies cover both marketing and sales functions, as they are so intertwined in most firms. Thus, managers should comply with the factors that influence sustainable consumption behaviour. The study aims to investigate the effect of environmental knowledge (EK), materialism (MAT), environmental influences (EI), the promotion of sustainable consumption (PSC), and sustainable consumption behaviour intention (SCBI) on sustainable consumption behaviour (SCB). Although many studies have examined sustainability issues for various groups of countries, activities in this critical field in Bulgaria are severely limited, and integrated research on the subject is non-existent. This paper focuses on the importance of investigating various factors that influence sustainable consumer behaviour. A total of 489 complete and usable responses were collected from participants from all regions of Bulgaria between May 2022 and July 2022. The partial least square-structural equation modelling (PLS-SEM) and SmartPLS 4 software were employed to test the hypothesised relationships. The results indicated that EK and MAT significantly affected SCBI. Additionally, the analysis revealed the statistically significant impact of EK, MAT, EI, PSC, and SCBI on SCB. Moreover, this study demonstrated that SCBI significantly mediated the relationships between EK and SCB and between MAT and SCB. Finally, the outcomes of the moderation analysis showed that age moderated the relationship between SCBI and SCB.

Keywords: sustainable consumption behaviour; behaviour intention; environmental knowledge; materialism; promotion of sustainable consumption; PLS-SEM; Bulgaria



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1. Introduction

Major environmental issues caused by widespread human meddling, such as pollution, global warming, land degradation, and biodiversity loss, have a direct impact on the sustainability and quality of the environment and ecosystem (Xue et al. 2021). Although numerous studies have examined environmental difficulties for diverse groups of countries (Dulam et al. 2021; Zuzañska-Žyško 2021) operations in this crucial sector are drastically restricted for Bulgaria, and integrated research on the topic is even non-existent. Multiple initiatives aimed at achieving sustainable consumption and production have been promoted by national and international organisations. Bulgaria and the other 27 EU nations need to advance sustainable consumer behaviour (SCB) by acting in a common but differentiated way, wherein developed countries take the lead while developing countries act as per their development and capabilities (UNDESA 2014). The necessity to analyse different factors that influence the SCB is the focus of this paper. To understand consumer behaviour, the whole consumption cycle should be studied rather than just initial choices because post-choice behaviours such as product usage, product life extension, and product disposal also have a very important and equally significant impact on sustainability (Sheoran and Kumar 2020).

Many investigations, however, have been focused on individual industries and their development based on the globalisation processes. In this sense, globalisation has led to a

'new paradigm where traditional industries, such as agriculture, employ state-of-the-art technologies to expand their possibilities into what is known as smart farming and the agri-food industry 4.0' (Pérez-Pons et al. 2021). The aim of this study is to investigate the factors influencing the sustainable consumption behaviour of consumers in Bulgaria.

From the authors' standpoint, the endorsement of sustainable consumption and production are very crucial aspects of sustainable development. This also applies to Bulgaria—a country that has transitioned away from central planning and is currently part of the EU and the global market. The research tasks of this analysis are:

- (1) To systematise the theoretical concepts regarding SCB;
- (2) To conceptualise the effect of the different external and internal factors on SCB;
- (3) To develop a specific survey methodology and to carry out an empirical study about SCB-related issues in Bulgaria;
- (4) To analyse, interpret, and present the results of the study.

The significance of this topic rests on the claim that while SCB has been an occurrence for some time, the study on the subject is relatively recent: most of it has been conducted over the past two decades. It is crucial to remember that consumer behaviour will be the result of cognitive, emotional, and motivational processes and that it will be influenced and even conditioned by several circumstantial factors, starting with the notion that altering individual consumption patterns calls for more sustainable consumer behaviour (Figueroa-García et al. 2018). The subject of the paper occupies a central position in discussions, research, and organisational activities connected to the process of creating SCB. This plays an essential role in the Bulgarian economic environment and in the national strategies for environmentally friendly consumer behaviour.

To successfully complete the goals and tasks, the partial least PLS-SEM, and the latest software version of SmartPLS 4 were employed to test the hypothesised relationships. The survey was produced using an online questionnaire and quota sampling. A total of 489 complete and usable responses were collected from participants from all regions of Bulgaria between May 2022 and July 2022.

The paper is structured as follows: following the introduction, the second part presents the literature review based on contemporary research in the field of SCB determinants. The third part is focused on the research methodology. The latter provides the framework for the study and is the basis of the fourth part, which presents the empirical results. The paper ends with a discussion and conclusions for future research in the field of SCB.

2. Literature Review

2.1. Sustainable Consumption Behaviour

Sustainable consumption behaviour (SCB) has been connoted differently by different scholars depending on their backgrounds and may include a wide range of components and varying interpretations (Francis and Sarangi 2022). SCB is frequently used interchangeably with specific terms such as "pro-environmental consumption behaviour" (Saari et al. 2021), "green consumption behaviour" (Biswas 2017), "ethical consumption behaviour" (Ganglmair-Wooliscroft and Wooliscroft 2019), etc. This fact may be partly attributed to the complex and ambivalent nature of "sustainable consumption" (Pilgrimienè et al. 2020) on the one hand, and to the evolution and transformation of this concept in time, on the other hand (Roy 2020). It is "sustainable consumption" (SC) that plays a fundamental and legitimising role for SCB.

Theoretically, sustainable consumption originated in ethical consumer research (Figueroa-García et al. 2018), where early studies focused on one facet of sustainable consumption only and attempted to understand it: for instance, the environmental aspect of the sustainable consumption phenomenon. They were, of course, important but did not constitute a systematic approach to sustainable consumption (Pilgrimienè et al. 2020; Quoquab et al. 2019). Currently, sustainability is one of the key topics for organisations. In practice, organisations must adapt their long-term strategies to meet changing societal demands, including environmental and social aspects in their product offerings and decision-making (Haessler 2020).

In this regard, “sustainable consumption” presents a macro framework (with emphasis on the sustainability idea) which presupposes the demonstration of a certain holistic approach to its research. As pointed out by Wang et al. (2014, p. 154), “sustainable consumption is an umbrella term that brings together a number of key issues, such as meeting needs, enhancing the quality of life, improving resource efficiency, increasing the use of renewable energy sources, minimizing waste, taking a life cycle perspective and taking into account the equity dimension”. That is, “sustainable consumption” is more than purchasing and consuming environmentally friendly products, and corresponds to a change in lifestyle (e.g., refraining from hyper-consumption), future orientation, and responsibility to the next generations. Our study adheres to the definition suggested by Quoquab and Mohammad (2017, p. 120), according to which, “sustainable consumption goes beyond the environmental concern by ensuring and managing the existing resources that are not only able to meet the current demand, but also without jeopardizing the needs of future generation”.

There is no consensus among previous studies as to the definition of SCB. SCB is viewed from different perspectives (the policymaker’s view, the marketing view, the consumer interest focus, and the ethical focus) and studied using different methodologies (Antonides 2017). Besides, this type of behaviour affects different areas, such as hospitality (Brandão and Cupertino de Miranda 2022; Wang et al. 2021), the fashion industry (Hirscher 2013), food product markets (Mancini et al. 2017; Fischer et al. 2017; Feil et al. 2020), the retail industry (Lehner 2015), and the forest sector (Häyrynen et al. 2016). Furthermore, it has a variety of forms, from the interest in organic and fair-trade labels in purchase decisions, the consumers’ stated willingness to pay for local food (Tomsa et al. 2021), home water treatment plants, green walls, and eco-friendly architectural designs (Guzmán Rincón et al. 2021), the recycling of waste using energy-efficient appliances, ethical investments, travel mode switch, or the purchase of recycled goods, to adopting minimalist ways among others (Francis and Sarangi 2022). In this paper, we support the position of Aibar-Guzmán and Somohano-Rodríguez (2021, p. 1) that “customers are considered to be major stakeholders whose demands and preferences have a strong influence on corporate strategies”. Additionally, we refer to sustainable consumption behaviour as a set of deliberate and effective actions of consumers that result in their quality of life, taking care of the environment, and resources for future generations (Guzmán Rincón et al. 2021).

In reviewing the literature on the various SCB-related issues, we found that different models had been developed and suggested for explaining sustainable consumption behaviour. In most of the existing research, SCB is regarded because of the effect of several pre-behavioural determinants, such as values (Lee et al. 2015; Sharma and Jha 2017; Ab. Wahab 2017; Kadic-Magljalic et al. 2019), attitudes, subjective norms, perceived behavioural control (Vantamay 2018; Matharu et al. 2021), sex, personality traits, sustainable importance (Luchs and Mooradian 2012), psychological traits, situation, psychological state, environmental education (Pimdee 2020), connectedness to nature, love of nature (Dong et al. 2020). A different approach was chosen by Geiger et al. (2017) for their cube model of sustainable consumption behaviour (SCB-Cube), which includes a sustainability dimension (comprising a socio-economic dimension as well as an ecological one), a consumption phase (comprising different phases, not only the acquisition of goods and services but also their use and disposal), consumption areas (different areas of life such as food, housing, mobility, clothing, etc.), and the impact of chosen behaviours (ecologically and socially most impactful behaviours). Brandão and Cupertino de Miranda (2022) demonstrated the mediating role SCB played in decision-making when consumers purchased a luxury service. Phang et al. (2021) conducted a pioneering study on the moderating role of SCB in consumer behaviour research in the pandemic context.

Figueroa-García et al. (2018) maintained that past studies focused mainly on the internal factors that determine SCB, whereas the effects of external factors on SCB received little attention in the literature. They stressed that the reasons for the occurrence of certain behaviour could be clarified by understanding the context of the action since circumstances impose behavioural patterns that lead to certain forms of conduct and inhibit others. Their

research provided evidence of the existence of relationships between three exogenous variables (environmental influences, education and information, and market conditions) and the endogenous variable of sustainable consumption behaviour. Pointing at the need for studying SCB in the broader social context, Wang and Hao (2018) attempted to fill the gaps in previous research by examining the effects of an important external social factor, Internet penetration, on individual SCBs. Their findings indicated that Internet penetration did not significantly influence individual SCBs, but substantially enhanced the transition from pro-environmental attitudes to sustainable behaviours. Similarly, Choudhary et al. (2019) observed that the intervention in information diffusion through social media could exert a targeted influence on SCB instances.

Due to the complexity of SCB, other authors have presented arguments in favour of the consideration of both internal and external factors as important predictors of the sustainable consumption behaviour of individuals (Pilgrimienė et al. 2020; Wang et al. 2014; Wu et al. 2016). Some research also attempts to incorporate other factors such as materialism (Dong et al. 2018) and engagement (Kadic-Maglajlic et al. 2019). Earlier studies (Panzone et al. 2016; Bhutto et al. 2021; Sheoran and Kumar 2022) have indicated that demographic variables, i.e., age, gender, education level, income, etc., affect sustainable consumer intention and/or SCB. Table A1 (Appendix A) summarises in chronological order some of the factors affecting SCB by using structural equation modelling (SEM) for the past 10 years. Building on this literature, we aim to examine the following internal and external factors that influence sustainable consumption behaviour: environmental knowledge (EK), materialism (MAT), environmental influences (EI), the promotion of sustainable consumption (PSC), and sustainable consumption behavioural intention (SCBI). To the best of our knowledge, there is a limited number of studies on the influence of values with a negative effect, such as materialism, on SCB. The same also holds true for studies that would analyse the effect (direct or indirect) of PSC on SCB. The proposed research model has been shown in Figure 1. It is expected that EK, MAT, EI, and PSC affect SCB directly and indirectly. Moreover, it is hypothesised that SCBI mediates the relationships between the antecedents and SCB. Additionally, it is assumed that age has an important moderating role in associations of influencing factors with SCB.

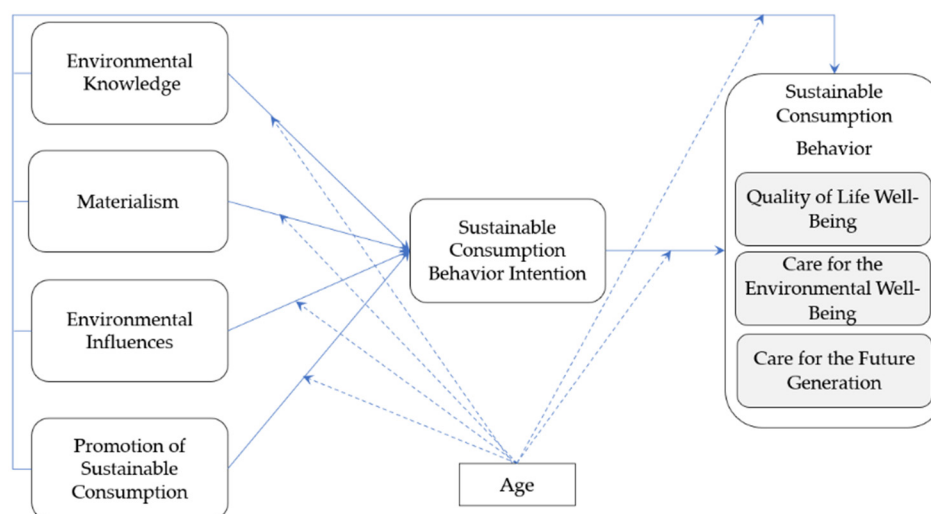


Figure 1. Proposed research model.

2.2. Influence of Environmental Knowledge, Materialism, Environmental Influences, and Promotion on Sustainable Consumption Behavioural Intention

Environmental knowledge, or knowledge about environmental issues, refers to the information individuals have on the relevant environmental concepts, environmental problems, and the ecological effects of consumption and production (Saari et al. 2021). Many researchers agree that environmental knowledge does not directly influence behaviour but

acts as a modifier of attitudes (Kollmuss and Agyeman 2002; Vainio and Paloniemi 2014). According to earlier studies (Wang et al. 2014), environmental knowledge is positively correlated with behavioural intention. Therefore, it is hypothesised that:

Hypothesis 1 (H1). *Environmental knowledge has a positive effect on sustainable consumption behavioural intention.*

Materialism has been extensively studied. Previous studies have reported numerous findings on the outcomes of materialism. Thus, for instance, Liu et al. (2022) found that materialism was positively associated with self-interest-triggered moral flexibility, and materialists judged immoral acts performed by the self and others more differentially. The marketing literature has previously reported numerous findings supporting a relationship between materialism and consumer–brand relationship outcomes (Fazli-Salehi et al. 2021). For instance, Le (2020) established that materialistic consumers were likely to develop brand addiction. Mainolfi (2020) reported that materialism had a positive relationship with brand consciousness, intentions to buy foreign luxury products online, and bandwagon luxury consumption behaviour. Materialism has also been examined in relation to consumer ethics. Most studies on this subject indicate that these two factors are negatively related and may be considered competing orientations (Ryoo et al. 2020). There are also studies, though fewer, on the effect of materialism on consumers' pro-environmental behaviours (Wang et al. 2019; Alzubaidi et al. 2021).

Materialism is typically defined as the importance ascribed to the ownership and acquisition of material goods as a means of reaching important life goals (Lindblom et al. 2018). According to the general understanding, materialistic life, "characterized by pursuing possessions, image, and status, has always been looked upon as self-interested and unkind" (Wang et al. 2019, p. 1); nevertheless, materialism has not always been regarded as problematic by researchers (Ryoo et al. 2020). For instance, Pandelaere (2016, p. 36) pointed out that "everybody is to some extent materialistic, and materialistic consumption may not necessarily be bad". In view of the materialists' established expectations for a transformation of life through consumption (Donnelly et al. 2013), in this study, materialism is defined as a general focus on the possession of material goods aimed at achieving success, centrality, and happiness (Richins 2004). To date, the number of studies which have investigated the influence of materialism on overall SCB is limited. One of the few empirical studies that tackled the link between these constructs was the study conducted by Dong et al. (2018). They tested the moderating effect of materialistic values but not the indirect effect of materialism on SCB. In addressing these gaps in the literature, the following hypothesis was formulated:

Hypothesis 2 (H2). *Materialism has a negative effect on sustainable consumption behavioural intention.*

Past research suggests that influences from the social environment can be exerted by friends, family, and other groups deemed important to a consumer (Gleim et al. 2013). Pilgrimienė et al. (2020) confirmed the indirect positive impact of the social environment (as part of the external group of factors) on green product purchase behaviour. Thus, it is hypothesised that:

Hypothesis 3 (H3). *Environmental influences have a positive effect on sustainable consumption behavioural intention.*

In the framework of the European Union's sustainable policies, the promotion of sustainable development thinking has been a key issue. The promotion of the sustainability idea supports alternative consumption patterns; it increases consumers' knowledge and awareness connected with environmental and social problems, changes consumption and purchase behaviours, and enhances the acceptance level of sustainable consumption

(Radziszewska 2019). In previous research, attention was paid to different contextual variables that have an impact on individuals' sustainable consumption behaviour, such as the price of green products, the availability of infrastructure, policy incentives (Wang et al. 2014), situation (Pimdee 2020), economic factors (Wang et al. 2019), etc. However, as far as we know, there are very few studies presenting empirical evidence of the effect of the SC construct on SCB. For instance, Sousa et al. (2022) confirm the existence of a positive relationship between companies' green communication and green purchase intentions. The findings of Pilgrimienė et al. (2020) showed that the respondents had a positive attitude to green product promotion and to the application of other "engaging mechanisms" for sustainable consumption promotion. Therefore, it is hypothesised that:

Hypothesis 4 (H4). *SC promotion has a positive effect on sustainable consumption behavioural intention.*

2.3. Influence of Environmental Knowledge, Materialism, Environmental Influences, Promotion and Sustainable Consumption Behavioural Intention on Sustainable Consumption Behaviour

Based on the theoretical background, we also decided to study the direct effect of the influencing factors selected by us on SCB. The same approach was adopted by other researchers as well (Saari et al. 2021; Wang et al. 2014; Brandão and Cupertino de Miranda 2022; Le 2020; Joshi and Rahman 2019; Nekomahmud et al. 2022). Most empirical results supported the conventional view that knowledge and behaviour are positively related (Wu et al. 2016). Figueroa-García et al. (2018) revealed that sustainable consumption behaviour was determined by environmental influences (in particular, the influence of family and friends, as well as that generated by cultural factors such as traditions). In conformity with other research, Matharu et al. (2021) concluded that sustainable consumption intention had a significant positive effect on sustainable consumption behaviour. In addressing this issue, the present study has presented the following five hypotheses:

Hypothesis 5a (H5a). *Environmental knowledge has a positive effect on sustainable consumption behaviour.*

Hypothesis 5b (H5b). *Materialism has a negative effect on sustainable consumption behaviour.*

Hypothesis 5c (H5c). *Environmental influences have a positive effect on sustainable consumption behaviour.*

Hypothesis 5d (H5d). *SC promotion has a positive effect on sustainable consumption behaviour.*

Hypothesis 5e (H5e). *Sustainable consumption behavioural intention has a positive effect on sustainable consumption behaviour.*

2.4. The Mediating Effect of Sustainable Consumption Behavioural Intention

As emphasised by Figueroa-García et al. (2018), it is important to not only evaluate the direct effect of one construct on another, but also the indirect effects produced by mediating constructs. This evaluation is performed by measuring the total effect, which is the sum of all direct and indirect effects. Because of the Theory of Planned Behaviour (TPB), which is one of the most influential theories among the studies on consumer behaviour, we considered examining the mediating role that behaviour intention has in the relationships between antecedents and SCB. In this study, we have referred sustainable consumption behavioural intention to people's willingness to act and consume more sustainably by making sacrifices or by paying more (Saari et al. 2021). Since the behavioural intention construct is often considered a mediator that facilitates some expected outcomes (e.g., attitude, subjective norms, perceived behavioural control), we have derived four mediation hypotheses:

Hypothesis 6a (H6a). *Sustainable consumption behavioural intention mediates the relationship between environmental knowledge and sustainable consumption behaviour.*

Hypothesis 6b (H6b). *Sustainable consumption behavioural intention mediates the relationship between materialism and sustainable consumption behaviour.*

Hypothesis 6c (H6c). *Sustainable consumption behavioural intention mediates the relationship between environmental influences and sustainable consumption behaviour.*

Hypothesis 6d (H6d). *Sustainable consumption behavioural intention mediates the relationship between SC promotion and sustainable consumption behaviour.*

2.5. The Moderating Role of Age

Scholars have argued that demographic variables, such as age, gender, income, etc., have a significant moderating influence on consumers' behaviour (Wu et al. 2016). As regards the effect of age on the occurrence of different SCB forms in particular, the results are contradictory. On the one hand, some studies found that, compared to younger customers, older customers tended to be more ecologically conscious (Han et al. 2009; Yahya et al. 2015). Accordingly, young consumers had a poor environmental attitude and low environmental concern and environmental knowledge (Dhir et al. 2021). Similarly, Witek and Kuźniar (2021) found that young people cared the least about being perceived as environmentally friendly. On the other hand, other studies explained that younger people were more environmentally concerned and made their decisions having considered the effect of their choice on the environment (Akehurst et al. 2012; Sheoran and Kumar 2022). As emphasised by Tripathi and Singh (2016), age could be an important variable while examining sustainable consumption, but inconsistencies of this kind in the previous literature need further research. Based on the above discussions, it is assumed that age can moderate all direct relationships developed in this study. Therefore, the following nine hypotheses have been postulated:

Hypothesis 7a (H7a). *Age moderates the relationship between environmental knowledge and sustainable consumption behavioural intention.*

Hypothesis 7b (H7b). *Age moderates the relationship between materialism and sustainable consumption behavioural intention.*

Hypothesis 7c (H7c). *Age moderates the relationship between environmental influences and sustainable consumption behavioural intention.*

Hypothesis 7d (H7d). *Age moderates the relationship between SC promotion and sustainable consumption behavioural intention.*

Hypothesis 8a (H8a). *Age moderates the relationship between environmental knowledge and sustainable consumption behaviour.*

Hypothesis 8b (H8b). *Age moderates the relationship between materialism and sustainable consumption behaviour.*

Hypothesis 8c (H8c). *Age moderates the relationship between environmental influences and sustainable consumption behaviour.*

Hypothesis 8d (H8d). *Age moderates the relationship between SC promotion and sustainable consumption behaviour.*

Hypothesis 8e (H8e). *Age moderates the relationship between sustainable consumption behavioural intention and sustainable consumption behaviour.*

3. Methodology

3.1. Measurement Instrument

The questionnaire had three parts, namely, (1): socio-demographic characteristics of consumers (e.g., gender, age, education level, personal income, and place of living); (2) general questions about consumers' sustainable consumption behaviour; (3) factors influencing consumers' sustainable consumption behaviour. All measurement scales for the constructs have been included in prior publications. The SCB scale is a multi-dimensional second-order construct, which incorporates three dimensions, i.e., "Quality of Life (QL)", "Care for the Future Generation (CEW), and "Care for the Environmental Well-being (CFG)". Twenty-four items were used to measure QL, CEW, and CFG on the scale developed by [Quoquab et al. \(2019\)](#). The measurement of the constructs of environmental knowledge and sustainable consumption behaviour intention was based on the research conducted by [Saari et al. \(2021\)](#). Both constructs included three items each. The environmental influences construct included three items based on the operationalisation applied and validated by [Figuroa-García et al. \(2018\)](#). Nine items for measuring materialism were adopted from the scale of [Lindblom et al. \(2018\)](#) and [Ponchio and Aranha \(2008\)](#). Sustainable consumption promotion involves information about environmental issues, green product promotion, the promotion of recycling, and other external initiatives. To measure PSC, four items from the scale provided by [Piligrimiené et al. \(2020\)](#) were used. All items were measured on a seven-point Likert scale [where 7 specifies a positive opinion (Strongly Agree/Always) and 1 denotes a negative opinion (Strongly Disagree/Never)]. The measurement items have been listed in Appendix B (Table A2).

The questionnaire was professionally translated into Bulgarian by two bilingual experts from the Department of Language and Specialised Training of Foreign Students at one of the largest Bulgarian universities, and then a standard back translation procedure was used to ensure that the translated content conformed with the original English meaning.

3.2. Sample and Data Collection

The survey design followed a sequence of steps, including a pilot test with 50 respondents aimed to identify problematic items and further improve the survey ([Fink 2016](#)). The data were collected with the help of a certified sociological agency operating in Bulgaria. A quota sample was formed for the study of three defined characteristics (gender, age groups, and place of living in administrative-territorial regions in the country). It reproduced the structure of the population in Bulgaria as of 31 December 2021 (in conformity with the data published by the National Statistical Institute in the Republic of Bulgaria). A total of 522 respondents were approached for the questionnaire-based online survey. Observations with missing values and straight lining were deleted, leaving a total sample size of 489. This sample size highly exceeded the recommended minimum sample sizes of 160 and 146 as indicated by the inverse square root and gamma-exponential methods, respectively ([Kock and Hadaya 2018](#)).

The respondents' age ranged between 16 and 64 years, with an average age of 40. The age group (based on the age groups formulated by the National Statistical Institute in the Republic of Bulgaria) and the other sample characteristics have been presented in Table 1.

Table 1. Socio-demographic profile of the sample.

Variable	Categories	Percentage
Gender	Male	48%
	Female	52%
Age group	16–24 years	14%
	25–39 years	33%
	40–54 years	38%
	55–64 years	15%
Educational level	Higher	69%
	Secondary	30%
	Primary	1%
Personal income	Under 650 BGN	8%
	650–1235 BGN	36%
	1236–1820 BGN	26%
	1821–2410 BGN	11%
	2411–2999 BGN	8%
	3000 and more BGN	7%
Place of living	Without personal income	4%
	Capital city	28%
	City above 100 thousand	42%
	Town from 50 thousand to 100 thousand	15%
	Town from 25 thousand to 50 thousand	12%
	Town up to 25 thousand	3%

4. Discussion and Results

This study employed partial least squares structural equation modelling (PLS-SEM) and the latest software version of SmartPLS—SmartPLS 4 (Ringle et al. 2022) to test the hypothesized relationships. SmartPLS software is widely used in many social science disciplines because of its variety of capabilities and user-friendly features. It can estimate very complex and higher-order models, with a considerably smaller sample size at the same time (Sarstedt et al. 2021).

The analysis pursued the guidelines, procedures, and cut-off values as suggested by Hair et al. (2021). The skewness and kurtosis tests were assessed. The findings indicated that the assumption of normality was violated for some items since the threshold of the absolute skewness value and the absolute kurtosis value exceeded 1.

A two-step process was followed, where the measurement model (outer model) was analysed first, followed by the structural model (inner model). To assess the significance of the path coefficients and the loadings, a bootstrapping method with 5000 resamples was used.

Harman's single-factor test was performed to detect common method bias (CMB) before proceeding to measuring the structural model and the measurement model. The result based on the unrotated principal axis factoring revealed that the first factor explained 34.7% of the total variance, which was less than the critical value of 50% (Fuller et al. 2016). Henceforth, CMB was not at all a concern in the present study.

The model in the present study contained eight first-order reflective constructs and a second-order reflective-reflective construct. The PLS-SEM literature outlines several approaches to the estimation of models containing higher-order constructs, such as the repeated indicators approach and the two-stage approach (embedded and disjoint) (Sarstedt et al. 2019). Since these approaches provide highly similar results when sample sizes are sufficiently large, the disjoint two-stage approach was chosen for the current research. In the first stage of the approach, the model was estimated for reliability and validity with only first-order constructs. After the evaluation of the model, the construct scores for the SCB subconstructs QL, CEW, and CFG were obtained and named QL_LV, CEW_LV, and CFG_LV, respectively. In the second stage, variables QL_LV, CEW_LV, and CFG_LV were used as SCB indicators for the purpose of assessing the hierarchical model. The structural model assessment was created on the grounds of the stage two results.

4.1. Assessment of the Measurement Model

Multiple approaches were used to assess the reliability and validity of the measurement model. The reliability was measured through Cronbach's alpha and composite reliability (CR). The average variance extracted (AVE) was applied to assess the convergent validity. The Fornell–Larcker criterion and Heterotrait–Monotrait Ratio (HTMT) were applied to evaluate the discriminant validity (DV). For all the constructs, the CR and Cronbach's alpha exceeded the 0.7 threshold, and the AVE values surpassed the advised value of 0.50 (Table 2). All HTMT values were consistently smaller than the benchmark of 0.85 (Table 3), and the square root of AVE for every construct was greater than its correlation with all other constructs (Table 4). Hence, reliability and validity were established.

Table 2. Measurement model of the first- and second-order constructs.

Constructs and Items	Loadings
Environmental influences (Cronbach's alpha = 0.886, CR = 0.921, AVE = 0.746)	
EI 1. Someone from my family or my friends motivates me to follow in their footsteps in environmental care.	0.834
EI 2. I have participated as a volunteer in social work or environmental organisations.	0.870
EI 3. I take advantage of the fact that now there are organic or ecological products in the supermarket to buy them.	0.878
EI 4. Caring for the environment is a tradition in my family.	0.871
Environmental knowledge (Cronbach's alpha = 0.918, CR = 0.922, AVE = 0.859)	
EK 1. How much do you feel you know about the causes of these sorts of environmental problems?	0.928
EK 2. How much do you feel you know about solutions to these sorts of environmental problems?	0.919
EK 3. How much do you agree or disagree with . . . : I find it hard to know whether the way I live is helpful or harmful to the environment.	0.934
Materialism (Cronbach's alpha = 0.836, CR = 0.884, AVE = 0.605)	
Mat 1. I admire people who own expensive homes, cars, and clothes.	0.762
Mat 5. I would be much happier if I could afford to buy more things.	0.796
Mat 6. I like to own things that impress people.	0.848
Mat 7. I like a lot of luxury in my life.	0.743
Mat 8. It bothers me that I cannot afford to buy all the things I like.	0.734
Promotion of sustainable consumption (Cronbach's alpha = 0.865, CR = 0.917, AVE = 0.787)	
PSC 1. Initiatives of socially responsible organisations to inform society about the damage consumption does to the environment and promotion of sustainable behaviour have an impact on my consumption patterns.	0.887
PSC 2. I am willing to buy green products instead of regular products if there is a price promotion.	0.897
PSC 3. If there are some incentive mechanisms, I could change some consumption modes.	0.877
Sustainable consumption behaviour intention (Cronbach's alpha = 0.918, CR = 0.948, AVE = 0.859)	
How willing would you be to . . . to protect the environment?	
SCBI 1. Pay much higher prices.	0.930
SCBI 2. Pay much higher taxes.	0.934
SCBI 3. Accept cuts in your standard of living.	0.916
Quality of life well-being (Cronbach's alpha = 0.844, CR = 0.895, AVE = 0.680)	
QL 1. I always try hard to reduce misuse of goods and services (e.g., I switch off the light and fan when I am not in the room)	0.839
QL 3. I avoid being extravagant in my purchases	0.852
QL 4. While dining in a restaurant, I order food(s) of only the amount that I can eat in order to avoid wasting food	0.844
QL 8. I plan carefully before I purchase a product or service	0.762
Care for the environmental well-being (Cronbach's alpha = 0.881, CR = 0.913, AVE = 0.678)	
CEW 1. I do care for the natural environment	0.818
CEW 2. I use eco-friendly products and services	0.835
CEW 3. I purchase and use products which are environmentally friendly	0.869
CEW 4. I often pay extra money to purchase environmentally friendly products (e.g., organic food)	0.793
CEW 6. I prefer to use a paper bag since it is biodegradable	0.799
Care for the future generation (Cronbach's alpha = 0.911, CR = 0.937, AVE = 0.789)	
CFG 1. I always remember that my excess consumption can create hindrances for the future generation to meet their basic needs	0.870
CFG 4. I try to control my desire for excessive purchases for the sake of future generations	0.897

Table 2. Cont.

Constructs and Items	Loadings
CFG 5. I am concerned about future generations	0.870
CFG 6. I try to minimise the excess consumption for the sake of preserving environmental resources for future generations	0.914
Sustainable consumption behaviour (Cronbach's alpha = 0.832, CR = 0.899, AVE = 0.748)	
QL_LV	0.808
CEW_LV	0.888
CFG_LV	0.897

Notes: QL_LV—latent variable scores for the construct “Quality of life well-being”, CEW_LV—latent variable scores for the construct “Care for the environmental well-being”, CFG_LV—latent variable scores for the construct “Care for the future generation”.

Table 3. Discriminant validity with HTMT.

Construct	EI	EK	MAT	PSC	SCBI	QL	CEW	CFG
EI	-							
EK	0.429	-						
MAT	0.507	0.344	-					
PSC	0.229	0.208	0.153	-				
SCBI	0.228	0.314	0.365	0.083	-			
QL	0.287	0.309	0.345	0.234	0.345	-		
CEW	0.468	0.407	0.429	0.293	0.312	0.666	-	
CFG	0.411	0.455	0.373	0.367	0.246	0.68	0.774	-
SCB	0.467	0.467	0.457	0.357	0.358	-	-	-

Table 4. Fornell–Larcker criterion.

Construct	EI	EK	MAT	PSC	SCBI	QL	CEW	CFG
EI	0.864							
EK	0.387	0.927						
MAT	−0.438	−0.303	0.778					
PSC	0.203	0.188	−0.131	0.887				
SCBI	0.207	0.29	−0.322	0.074	0.927			
QL	0.257	0.275	−0.297	0.203	0.306	0.825		
CEW	0.415	0.369	−0.37	0.259	0.283	0.578	0.823	
CFG	0.373	0.419	−0.33	0.331	0.225	0.598	0.696	0.888
SCB	0.408	0.415	−0.385	0.309	0.309	0.865	-	-

The square root of AVE values are marked in bold.

4.2. Assessment of the Structural Model

Once the validity and reliability of the measurement model were assured, the structural model was assessed. Possible collinearity problems between variables were checked through the VIF. Additionally, the coefficient of determination (R^2) and the predictive relevance (Q^2) of the model were evaluated. The constructs did not have collinearity problems as all VIF values were below the acceptable threshold of 5. The R^2 value results indicated that 35% of the variance in SCB was explained by EK, MAT, EI, PSC, and SCBI, and 15% of the variance in SCBI was explained by EK, MAT, EI, and PSC. The predictive relevance of the structural model was established since the Q^2 values of SCB and SCBI were greater than zero.

The results revealed that ten of the formulated hypotheses were supported, whereas twelve were not supported (Table 5 and Figure 2). EK ($\beta = 0.214$, $p = 0.000$) was positively related to SCBI, while MAT ($\beta = -0.250$, $p = 0.000$) was negatively related to SCBI. Thus, H1 and H2 were supported. EI ($\beta = 0.014$, $p = 0.774$) and PSC ($\beta = 0.004$, $p = 0.925$)

had no significant effect on SCBI. Hence, H3 and H4 were not supported. The H5a–H5e hypotheses were accepted, as EK ($\beta = 0.186, p = 0.000$), EI ($\beta = 0.182, p = 0.000$), PSC ($\beta = 0.196, p = 0.000$), and SCBI ($\beta = 0.160, p = 0.000$) were positively related to SCB, and MAT ($\beta = -0.171, p = 0.001$) was negatively related to SCB. The mediating hypotheses were tested using the indirect effect approach. The results showed that SCBI significantly mediated the relationship between EK and SCB ($\beta = 0.034, p = 0.004$) and between MAT and SCB ($\beta = -0.040, p = 0.001$). Therefore, H6a and H6b were supported. Hypotheses H6c and H6d were not supported since the indirect effects between EI and SCB ($\beta = 0.002, p = 0.780$) and between PSC and SCB ($\beta = 0.001, p = 0.927$) were insignificant.

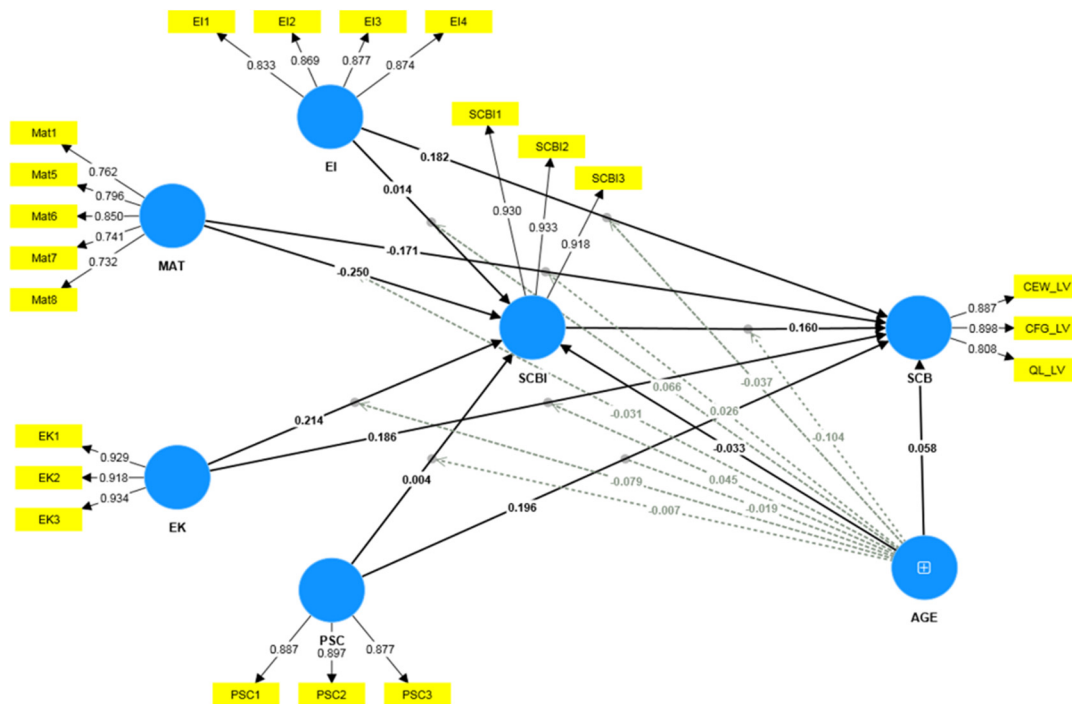


Figure 2. Structural model.

The moderation outcomes revealed that age moderated only the relationship between SCBI and SCB ($\beta = -0.104, p = 0.008$). A positive relationship was found between SCB and SCBI for younger respondents (Figure 3). Thus, H8e was supported. Other moderating effects (H7a–H7d, H8a–H8d) were not supported (Table 5).

With respect to the influence of environmental knowledge on sustainable consumption behavioural intention (H1), our findings align with prior studies (Lin et al. 2022; Wang et al. 2014). The indirect effect of EK on SC-related behaviour was also supported, in consonance with past literature (Dhir et al. 2021; Kollmuss and Agyeman 2002; Saari et al. 2021). The negative association of materialism with consumption behavioural intention (H2) confirmed by us is in concurrence with previous studies (Alzubaidi et al. 2021). That is, materialists are not willing to make certain compromises and adopt SCB. However, to form more conclusive comments, this relationship needs to be tested further since significant differences will probably be observed in the willingness for sustainable consumption among highly materialistic consumers and among consumers with low materialism. Besides, differences may also occur regarding consumers’ intentions for SC depending on the gender, age, and other demographic variables of the respondents. Thus, Alzubaidi et al. (2021) made an interesting discovery in their study; namely, that younger consumers’ materialism did not have a significant effect on behavioural intention, whereas, for older consumers, materialism had a strong negative effect on behavioural intention.

Table 5. Structural model estimates.

Hypotheses	Path Coeffects (β)	Standard Error	t-Statistics	p-Value	Decision
H1: EK -> SCBI	0.214	0.047	4.527	0.000	Supported
H2: MAT -> SCBI	-0.250	0.045	5.614	0.000	Supported
H3: EI -> SCBI	0.014	0.049	0.287	0.774	Not Supported
H4: PSC -> SCBI	0.004	0.045	0.094	0.925	Not Supported
H5a: EK -> SCB	0.186	0.042	4.380	0.000	Supported
H5b: MAT -> SCB	-0.171	0.050	3.408	0.001	Supported
H5c: EI -> SCB	0.182	0.045	4.053	0.000	Supported
H5d: PSC -> SCB	0.196	0.037	5.247	0.000	Supported
H5e: SCBI -> SCB	0.160	0.039	4.107	0.000	Supported
H6a: EK -> SCBI-> SCB	0.034	0.012	2.903	0.004	Supported
H6b: MAT -> SCBI-> SCB	-0.040	0.012	3.331	0.001	Supported
H6c: EI -> SCBI-> SCB	0.002	0.008	0.279	0.780	Not Supported
H6d: PSC -> SCBI-> SCB	0.001	0.007	0.092	0.927	Not Supported
H7a: Age*EK -> SCBI	-0.079	0.042	1.864	0.062	Not Supported
H7b: Age*MAT -> SCBI	-0.031	0.044	0.706	0.480	Not Supported
H7c: Age*EI -> SCBI	0.066	0.045	1.478	0.139	Not Supported
H7d: Age*x PSC -> SCBI	-0.007	0.043	0.164	0.870	Not Supported
H8a: Age*EK -> SCB	0.045	0.039	1.153	0.249	Not Supported
H8b: Age*MAT -> SCB	0.026	0.044	0.593	0.553	Not Supported
H8c: Age*EI -> SCB	-0.037	0.041	0.905	0.366	Not Supported
H8d: Age*PSC -> SCB	-0.019	0.035	0.527	0.598	Not Supported
H8e: Age*SCBI -> SCB	-0.104	0.039	2.647	0.008	Supported

$$R^2_{SCB} = 0.352, R^2_{SCBI} = 0.154, Q^2_{SCB} = 0.291, Q^2_{SCBI} = 0.120.$$

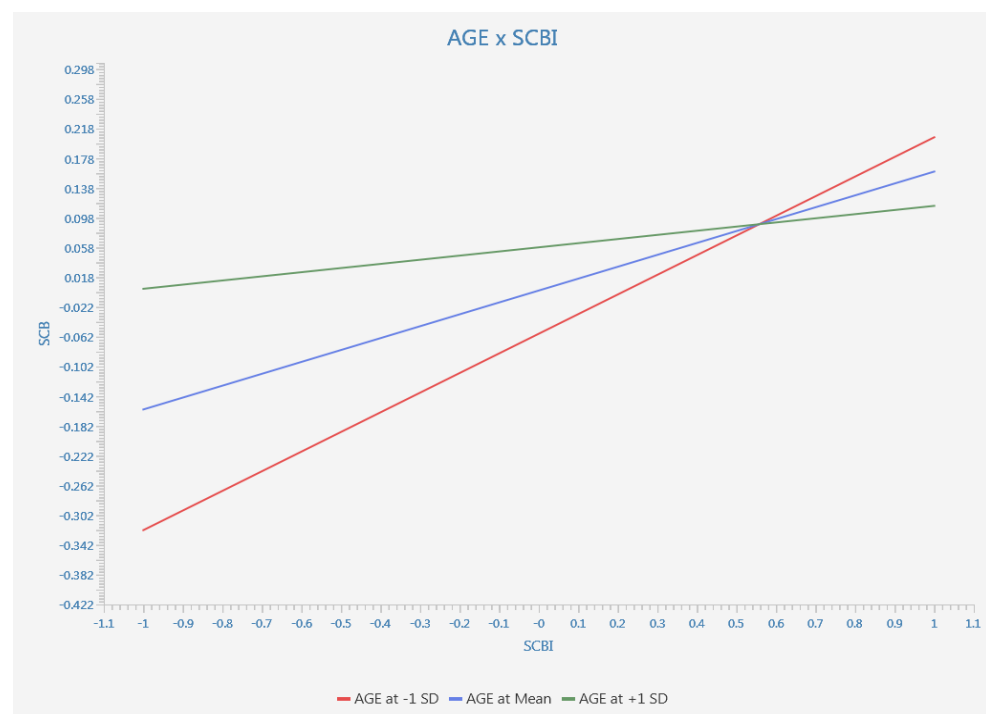


Figure 3. Simple slope analysis for the interaction effect of age and SCBI on SCB.

The findings related to H3 contradicted those of past studies (e.g., Bruno et al. 2022). Practically, our results did not confirm the positive effect of environmental influences on the intention for individual sustainable behaviour. That was a surprising discovery for us but still, there could also be other influences that might cause consumers to refrain from motivating people's desire for making sacrifices or paying more to consume sustainably. For instance, the different aspects of culture, such as "individualism" and "collectivism", which

reflect the differences in the cultural values of western and eastern countries (Hofstede 2001), could play a determining role in this result.

Our study did not confirm the assumption of the existence of a link between sustainable consumption promotion and sustainable consumption behavioural intention (H4). This result contradicted prior studies that reported an indirect effect of PSC on green product buying (Pilgrimienė et al. 2020). A plausible explanation for our findings may be that the public institutions, non-governmental organisations, retailers, and other stakeholders in Bulgaria still fail to fully utilise the promotion possibilities for the purpose of raising consumers' awareness regarding various SCB-related issues. As has already been stressed, the present study is among the few that present empirical evidence of the effect of the SC construct on SCB. Therefore, there is a great need for further research that would enhance the current understanding of this issue.

On the other hand, the tested direct effect of the five factors identified (EK, MAT, EI, PSC, and SCBI) on sustainable consumption behaviour was confirmed. Therefore, the data found support for Hypotheses 5a, 5b, 5c, 5d, and H5e. These findings were also in agreement with past research (Figueroa-García et al. 2018; Wang et al. 2014).

H6a, H6b, H6c, and H6d assumed that SCBI mediated the relationship between EK, MAT, EI, PSC, and SCB. The data supported the SCBI mediating effect between environmental knowledge, materialism, and SCB but not between environmental influences, sustainable consumption promotion, and SCB. Past studies also found support for the mediating effect of behavioural intention in the link between environmental value, environmental knowledge, environmental responsibility, and sustainable consumption behaviour (Sheoran and Kumar 2020), environmental concern and sustainable consumption (Saari et al. 2021), and between consumer attitude, subjective norm, perceived behavioural control, and sustainable consumption behaviour (Matharu et al. 2021). The unsupported mediating role of SCBI in the relationship between EI, PSC, and SCB leads to the conclusion that EI and PSC only affect SCB directly, not indirectly.

In nine hypotheses (H7a, H7b, H7c, H7d, H8a, H8b, H8c, H8d, and H8e), it was assumed that age would moderate the relationships of the influencing factors with sustainable consumption behaviour. The results showed that age moderated only the effect of SCBI on SCB (H8e), which is positive for younger respondents. Our study indicated that younger respondents were more motivated to make certain sacrifices to demonstrate sustainable consumption behaviour. This finding is in contrast with previous literature, which contended that older consumers were more environmentally friendly and aware of environmental issues than young consumers (Witek and Kuźniar 2021; Dhir et al. 2021). A partial explanation of the result we obtained could be sought in the increasing knowledge levels of young people having public consciousness, who obtain and distribute information using different modern communication channels. As a recommendation in this respect, a proposal could be addressed to the policymakers that would include, for instance, the targeted distribution of information using social networks aimed at promoting the benefits of the transition towards more sustainable consumption models among these individuals.

5. Conclusions

This study aimed to investigate the factors determining the sustainable consumption behaviour of consumers in Bulgaria. To address this issue, a conceptual model was created to provide a thorough understanding of the study. The model involved possible connections between environmental knowledge, materialism, environmental influences, the promotion of sustainable consumption, and sustainable consumption behavioural intention, which may influence and lead to SCB. Moreover, it was assumed that age played a moderating role in associations of influencing factors with SCB. The literature review revealed that these links had not been extensively studied; however, they could be important in a deeper study of the SCB. In this sense, this study contributes to the literature on sustainable consumption behaviour by investigating a few relatively new linkages, i.e., the effect of MAT and PSC

on SCB. Furthermore, the mediating effect of SCBI in such a conceptual framework has not been examined yet.

Some limitations of this study should be noted. Firstly, our research is limited geographically to the population of one European country, i.e., Bulgaria; the results might differ if other cultural contexts are considered. Secondly, the respondents were approached through a non-probability-based sampling method, which has issues of respondent selection bias and may therefore restrict again the generalisability of the findings.

The current study enriches the literature on sustainable consumption behaviour by explaining the links between insufficiently studied internal and external factors influencing SCB. Future research should attempt to expand the range of the factors that may be considered SCB determining factors. The design of our study excluded detailing the context. It would be useful to carry out research on factors significant for SCB in specific areas of occurrence, such as the food sector, the fast fashion industry, the hospitality industry, etc. Our conceptual framework emphasised the moderating role of age. Future studies could also test the moderating effect of other demographic variables, such as gender, income, education level, residence, etc., on the relationships between SCB and its antecedents. Moreover, this study used a quantitative approach to test the study hypotheses, whereas it may be recommended that future studies use mixed methods to gain an in-depth understanding of the SCB phenomenon.

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Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of the certified sociological agency BluePoint Ltd. The respondents confirmed their participation using a Consent Form.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Previous studies examining the influencing factors of sustainable consumption behaviour.

Year	Study	Influencing Factors (Role)	Valid Sample and Area	Factors with sig. Effect (Direct and Indirect)	Factor(s) with No sig. Effect
2012	Luchs and Mooradian	Sex (antecedent), personality traits (antecedent and mediator), sustainable importance (mediator)	9,092 German households and 147 undergraduate students at a major university in the eastern USA participated	Sex, personality traits, sustainable importance	-

Table A1. Cont.

Year	Study	Influencing Factors (Role)	Valid Sample and Area	Factors with sig. Effect (Direct and Indirect)	Factor(s) with No sig. Effect
2014	Wang	Environmental value (antecedent), environmental knowledge (antecedent), environmental responsibility (antecedent), environmental sensitivity (antecedent), response efficacy (antecedent), perceived behavioural control (antecedent), perception of consequence (antecedent), behavioural intention (mediator)	1.403; rural residents in China	Environmental value, environmental knowledge, environmental responsibility, environmental sensitivity, response efficacy, perceived behavioural control, behavioural intention	Perception of consequence
2015	Lee, Levy, and Yap	Consumption values (antecedents): functional values (quality, price, physical environment), social value, emotional value, epistemic value; place identity (mediator), environmental attitude (mediator)	561; two inner city suburbs in Auckland, New Zealand	Consumption values: functional values (physical environment), social value, emotional value, epistemic value; place identity (PI), environmental attitude	Quality has a significant effect on PI, but it does not indirectly affect SCB. Price does not affect SCB.
2017	Sharma and Jha	Holistic values (antecedents): internally oriented values and externally oriented values; environmental attitude (moderator), perceived consumer effectiveness (antecedent and moderator)	526; online and offline (during two train journeys between Delhi and Bangalore)	Some holistic values (HV) have a sig. effect: compassion, benevolence, acceptance, universalism, tradition; environmental attitude (EA) has a moderating effect on the relationship between some HV and SCB: universalism, acceptance, self-enrichment, etc.; the perceived consumer effectiveness (PCE) has a moderating effect on the relationship between EA and high SCB; the relationship between PCE and SCB is sig.	Some HVs do not have a sig. effect: accomplishment, conformity, courtesy, hedonism, etc.; EA does not have a moderating effect on the relationship between some HV and SCB: conformity, security, tradition, etc.
2017	Ab. Wahab	Islamic work values (antecedents): piety, benevolence, justice, responsibility, trustworthiness, patience, consultation, cooperation, self-reflection	264; private and public organisations in Malaysia	Islamic work values	-
2018	Dong, Li, Liu, Cai, and Fa	Need for autonomy (antecedent), need for affiliation (antecedent), need for control (antecedent), material possession love (mediator), materialism (moderator)	824; urban areas, such as Shanghai, Hangzhou, and Nanjing in eastern China; Wuhan, Changsha, and Hefei in central China; and Nanning and Xian in western China	Need for autonomy (NAU), need for affiliation (NAF), need for control (NC), material possession love (MPL), materialism positively moderates the relationship between (a) NAU and MPL, (b) NC and MPL	Materialism does not have a significant moderating effect of NAF on MPL.
2018	Vantamay	Attitude toward the behaviour (antecedent), subjective norm from friends (antecedent), perceived behavioural control (antecedent)	1.000; Thailand	Attitude toward the behaviour, subjective norm from friends, perceived behavioural control	-

Table A1. Cont.

Year	Study	Influencing Factors (Role)	Valid Sample and Area	Factors with sig. Effect (Direct and Indirect)	Factor(s) with No sig. Effect
2018	Figuroa-García, García-Machado, and Pérez-Bustamante Yábar	Environmental influences (antecedent), education and information (mediator and antecedent), social pressure (antecedent), market conditions (mediator), government actions (antecedent), demographic values (antecedent)	139; Community of Madrid	Environmental influences (antecedent), education and information (mediator), social pressure (antecedent), market conditions (mediator), government actions (antecedent), demographic values (antecedent)	Government actions, demographic values, social pressure
2019	Kadic-Magljalic, Arslanagic-Kalajdzic, Micevski, Dlacic, and Zabkar	Self-identity (antecedent), consumer values (antecedent), pro-environmental and pro-social consumer engagement (mediator), emotional intelligence (moderator)	407; Croatia and Slovenia	Self-identity, consumer values, pro-environmental and pro-social consumer engagement, emotional intelligence	-
[6] 2020	Roy	Altruistic value (antecedent), biospheric value (antecedent), egoistic value (antecedent), hedonic value (antecedent), normative goal (mediator)	It Is stated that KMO value of sampling is acceptable (0.798); several big bazaars and junction malls in India	Altruistic value, biospheric value, egoistic value, normative goal	Hedonic value
2020	Pimdee	Psychological traits (antecedent), situation (antecedent), psychological state (mediator), environmental education (mediator)	800; ten state universities located across 5 Thai regions	Situation, psychological state, environmental education	Psychological traits
2020	Dong, Liu Li, Yang, Liang, and Deng	Connectedness to nature (antecedent); love of nature (mediator): passion for nature, intimacy with nature, commitment to nature	888; urban areas such as Shanghai, Hangzhou, and Nanjing in eastern China; Wuhan, Changsha, and Hefei in central China; and Nanning and Xian in western China	Connectedness to nature is an antecedent of (a) green purchasing and (b) recycling; love of nature	Connectedness to nature does not predict reusability.
2021	Saari, Damberg, Frömbling, and Ringle	Environmental knowledge (antecedent), environmental risk perception (antecedent), environmental concern (mediator and antecedent), behavioural intention (mediator)	11.675; European Union	Environmental knowledge, risk perception, environmental concern, behavioural intention	-
2021	Matharu, Jain, and Kamboj	LOHAS lifestyle, consumer attitude (antecedent and mediator), subjective norm (antecedent), perceived behavioural control (antecedent), intention for sustainable consumption (mediator)	627; shopping and departmental stores of Delhi NCR	LOHAS lifestyle, consumer attitude, subjective norm, perceived behavioural control, intention for sustainable consumption	-

Appendix B

Table A2. Measurement items for the constructs in the research model.

Constructs and Items	Sources
Environmental influences EI 1. Someone from my family or my friends motivates me to follow in their footsteps in environmental care. EI 2. I have participated as a volunteer in social work or environmental organisations. EI 3. I take advantage of the fact that now there are organic or ecological products in the supermarket to buy them. EI 4. Caring for the environment is a tradition in my family. EI 5. Where I live, it is normal to separate waste for recycling. EI 6. My home has enough space for a garden.	(Figueroa-García et al. 2018)
Environmental knowledge EK 1. How much do you feel you know about the causes of these sorts of environmental problems? EK 2. How much do you feel you know about solutions to these sorts of environmental problems? EK 3. How much do you agree or disagree with . . . : I find it hard to know whether the way I live is helpful or harmful to the environment.	(Saari et al. 2021)
Materialism Mat 1. I admire people who own expensive homes, cars and clothes. Mat 2. I like spending money on many different things. Mat 3. My life would be better if I owned many of the things I do not have. Mat 4. Buying things gives me a lot of pleasure. Mat 5. I would be much happier if I could afford to buy more things. Mat 6. I like to own things that impress people. Mat 7. I like a lot of luxury in my life. Mat 8. It bothers me that I cannot afford to buy all the things I like. Mat 9. Some of the most important achievements in life include acquiring material possessions.	(Lindblom et al. 2018; Ponchio and Aranha 2008)
Promotion of sustainable consumption PSC 1. Initiatives of socially responsible organisations to inform society about the damage consumption does to the environment and promotion of sustainable behaviour have an impact on my consumption patterns. PSC 2. I am willing to buy green products instead of regular products if there is a price promotion. PSC 3. If there are some incentive mechanisms, I could change some consumption modes. PSC 4. I am willing to do waste recycling because it can save the living cost.	(Pilgrimienė et al. 2020)
Sustainable consumption behaviour intention How willing would you be to . . . to protect the environment? SCBI 1. Pay much higher prices. SCBI 2. Pay much higher taxes. SCBI 3. Accept cuts in your standard of living.	(Saari et al. 2021)
Sustainable consumption behaviour Quality of life well-being QL 1. I always try hard to reduce misuse of goods and services (e.g., I switch off the light and fan when I am not in the room). QL 2. I recycle daily newspaper (e.g., use as pet's litter box, etc.). QL 3. I avoid being extravagant in my purchases. QL 4. While dining in a restaurant, I order food(s) of only the amount that I can eat to avoid wasting food. QL 5. I avoid overuse/consumption of goods and services (e.g., take print only when needed). QL 6. I reuse paper to write on the other side. QL 7. I choose to buy product(s) with biodegradable containers or packaging. QL 8. I plan carefully before I purchase a product or service. QL 9. I do not like to waste food or beverage. QL 10. I recycle my old stuff in every possible way (e.g., distribute old clothes among needy people). QL 11. I reuse shopping bag(s) every time go shopping.	(Quoquab et al. 2019)
Care for the environmental well-being CEW 1. I do care for the natural environment. CEW 2. I use eco-friendly products and services. CEW 3. I purchase and use products which are environmentally friendly. CEW 4. I often pay extra money to purchase environmentally friendly products (e.g., organic food). CEW 5. I am concerned about the shortage of natural resources. CEW 6. I prefer to use a paper bag since it is biodegradable. CEW 7. I love our planet.	

Table A2. Cont.

Constructs and Items	Sources
Care for the future generation	
CFG 1. I always remember that my excess consumption can create hindrances for the future generation to meet their basic needs.	
CFG 2. I care for the need fulfilment of the next generation.	
CFG 3. I often think about future generations' quality of life.	
CFG 4. I try to control my desire for excessive purchases for the sake of future generations.	
CFG 5. I am concerned about future generations.	
CFG 6. I try to minimise excess consumption for the sake of preserving environmental resources for future generations.	

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