



## EXPLORING SUSTAINABLE CLOTHING CONSUMPTION IN ROMANIA: THE MIDDLE-INCOME CHALLENGE

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### Abstract

Immense pressure is placed on the textile industry in middle-income countries like Romania, where natural resources are becoming increasingly scarce due to the growing demand for clothing fueled by excessive consumerism. The significant amount of clothing waste in Romania highlights the negative effects of fast fashion, despite growing public awareness of its environmental consequences. During these times it is important to advocate sustainable clothing consumption behaviors, like choosing recyclable clothes over new items or preferring sustainable clothing items over fast fashion. There is a need to shift consumers' clothing consumption towards a more sustainable one. Promoting sustainable practices and economic growth in middle-income countries like Romania can reduce the negative impacts of excessive clothing consumption and decrease the burden on the textile industry. To enhance sustainable clothing consumption, it is important to apprehend the factors that predict consumers' intentions to purchase sustainable clothing consumption. However, the literature provides limited research exploring the underlying factors that determine consumers' intention to purchase sustainable clothing in middle-income countries. Moreover, the impact of consumers' environmental awareness on their sustainable clothing purchase motivation is underexplored. To fill the research gap, this study intends to analyze the problem by providing an exploration of the sustainable consumption field through the development of a comprehensive framework that examines the behavioral factors influencing consumers in Romania to buy sustainable clothing. This study's novelty integrates social value orientations with the theory of planned behavior and analyzes data from 1,018 Romanian respondents using statistical methods like partial least squares path modeling. The findings of the study reveal that altruistic values, social norms, and positive attitudes significantly impact Romanian consumers' intentions to purchase sustainable clothing. These discoveries grant significant guidance for promoting sustainable clothing consumption and provide practical implications for the textile industry in middle-income countries like Romania when addressing clothing overconsumption.

KEY WORDS: Sustainability, Sustainable clothing consumption, Theory of planned behavior, Social value orientation, Overconsumption

JEL classification: L67, D12, Q56

### Introduction

The accelerated growth of fast fashion in the textile industry within middle-income countries (MICs), has favored increased consumerism, resulting in overproduction and waste of clothing. This unsustainable cycle weakens natural resources and advances the ongoing climate change phenomenon. (Apaolaza et al., 2023; Armstrong et al., 2016; Manley et al., 2023) When defining middle-income countries (MICs), the World Bank officially classifies them as countries with a gross national income (GNI) between \$1,026 and \$12,475. This category includes influential players like China and European nations like Romania, Bulgaria, and Hungary.

The volume of textile exports has consistently grown over the years, representing 16% of all manufactured goods exported globally in 2020 and reaching a 7.3% figure in 2021, even with the challenges posed by the COVID-19 pandemic. (World Trade, 2021, 2023) In this context, China and several European MICs, like Romania and Bulgaria, accounted for at least 5% of global textile imports in 2021. Romania imported approximately 188,104.2 tons, representing a 6.5% increase from the previous year. (Eurostat, 2021a; WITS, 2021) Moreover, the growing trend of overconsumption has driven up the demand for clothing. (Eurostat, 2021c) This has led to increased textile production, impulsive buying, excessive clothing disposal, and the diminishing of valuable resources. (Achabou & Dekhili, 2013; Bhardwaj & Fairhurst, 2010; Nayak & Patnaik, 2021)

The disposal of over ten thousand tons of clothing in Romania, as evidenced by landfill statistics in 2020 (Eurostat, 2021b), accentuates the consequences of fast fashion, even as awareness of its negative impact increases. Addressing the harmful effects of clothing overconsumption and reducing the pressure on the textile industry to satisfy consumer needs would foster sustainable consumption and development in MICs like Romania. Moreover, there is a lack of studies investigating the factors influencing consumers in MICs to adopt sustainable clothing practices.

According to Rausch and Kopplin's (2021) definition, sustainable clothing consumption suggests environmentally responsible practices at every stage of a garment's life, from acquisition to disposal, including pre-purchase, purchase, storage, use, care, and disposal or post-purchase (Rausch & Kopplin, 2021), in this sense business sustainability, encompassing both economic and social values, is essential (Geissdoerfer et al., 2018; Mansoor & Paul, 2022). However, the adoption of sustainable products remains low, especially in the fashion industry, despite growing awareness (Kong et al., 2016; Salem & Alanadoly, 2020). Individual values play a significant role in motivating sustainable lifestyles and influencing purchasing decisions (Heuer & Becker-Leifhold, 2018). While existing research on sustainable clothing consumption primarily focuses on drivers and inhibitors in developed countries, there is a significant need in the literature for a comprehensive framework that incorporates the influence of consumers' social value orientations (altruistic, biospheric, and egoistic) on

sustainable clothing consumption (Armstrong et al., 2016; Goworek et al., 2020). Additionally, cultural and economic variations can influence consumer attitudes in MICs and might lead to differing consumer attitudes (Stern, 2000; Stern et al., 1993, 1999).

Grounded in the Theory of Planned Behavior (TPB) (Ajzen, 1991), this study's objectives are to 1) investigate the established predictors, including subjective norms, greenwashing concern, and sustainable attitude, that impact sustainable clothing consumption in Romania; 2) explore the influence of consumers' value orientations as predictors of sustainable clothing purchases; and, 3) uncover the factors that shape Romanian consumers' attitudes towards sustainability. In addressing these objectives, we will focus on the following research questions:

- (1) To what extent do external factors, including subjective norms and greenwashing concern, influence consumers' purchase intentions for sustainable clothing in Romania?
- (2) To what extent do Romanian consumers' social value orientations, such as altruistic, biospheric, and egoistic values, influence their purchase intentions for sustainable clothing?
- (3) What are the factors that shape Romanian consumers' sustainable attitudes, and how do these attitudes impact their purchase intentions for sustainable clothing?

We employ and adaptation of the instruments from Rausch & Kopplin (2021) and Roos & Hahn (2019) and conduct a Partial Least Square (PLS) path modeling analysis using data from 1,018 Romanian respondents.

Our research findings contribute to the literature on sustainable clothing consumption by emphasizing the significance of social value orientations in determining purchase intentions in Romania. Furthermore, we highlight the distinct process involved in shaping sustainable attitudes within the MICs context, that differ from those observed in developed countries, and provide practical implications for endorsing sustainable clothing purchases and mitigating overconsumption.

The paper has the following structure we first review relevant literature on sustainable clothing consumption and identify research gaps. We then propose our hypotheses based on the TPB and prior research, after which we present our integrated research framework. Subsequently, we detail our methodology and outline the findings, along with theoretical and practical implications, as well as future research opportunities.

## Literature review

Sustainable clothing is defined as garments and other fashion apparel that are environmentally friendly, economically responsible, and socially equitable throughout their lifecycle. It incorporates environmentally friendly practices and materials to reduce the fashion industry's environmental impact. Furthermore, sustainable clothing consumption involves choosing garments that minimize the waste of natural resources, the use of toxic materials, and the generation of environmental pollution. It can be divided into three

phases: production or post-consumption, consumption, and disposal or post-consumption.

While previous studies have predominantly focused on post-consumption behaviors like reuse, recycling, and donation (Goworek et al., 2020), some have also examined consumer behavior, such as purchasing recyclable, biodegradable, or secondhand clothing. (Armstrong et al., 2016; Bahl et al., 2023) However, there has been less attention to the pre-consumption stage of sustainable clothing, where the purchasing intentions of consumers are susceptible to external factors, like consumption and industrial norms, knowledge and environmental concerns, and social value orientations. Rausch and Kopplin's 2021 findings suggest a positive attitude toward sustainable clothing is a strong predictor of purchase intentions. Moreover, environmental knowledge, particularly environmental concerns, plays a significant role in forming these attitudes. The study does not explore sustainable clothing consumption in a MIC, like Romania, but instead focuses on a high-income country with a well-developed and advanced economy. Also, it does not consider the role of social value orientations in understanding the purchasing intention of sustainable clothing.

This study aims to confirm existing behavioral constructs and investigate the role of social value orientations in influencing purchase intentions of sustainable clothing in Romania. Thus, grounded on the Theory of Planned Behavior (TPB) theoretical framework, we introduce our research model and hypotheses in this new context.

According to the Theory of Planned Behavior (TPB), an individual's intentions to engage in a behavior are determined by subjective norms associated with the behavior, their attitudes towards the behavior, and their perceived behavioral control. (Ajzen, 1991; Fishbein & Ajzen, 1975) Subjective norms reflect how an individual perceives the social pressure exerted by others, motivating or discouraging specific behavior. Conversely, individual attitudes are formed internally based on personal knowledge and perceptions, reflecting an individual's emotional state (e.g. negative or positive emotions). (Fishbein & Ajzen, 1975) Perceived behavioral control is an individual's assessment of the potential risks and benefits of engaging in a behavior, impacted by value propositions and personalities. (Cameron et al., 1998)

In this sense, a consumer's decision to purchase sustainable clothing products may be influenced by external norms, like social norms and the opinions of others. Norms are external guidelines and expectations that influence individuals to behave in ways that are considered appropriate or acceptable and discourage them from engaging in socially unacceptable behavior.

A component of external norms is subjective norm (SN) which is considered a social predictor that significantly affects an individual's perception of social pressure to engage in or avoid a particular behavior. (Ajzen, 1991) Word-of-mouth (WOM), especially among friends, is a powerful influence on shaping one's decision. Environmentally conscious consumers are likely to spread awareness of eco-friendly practices among their peers and those recommendations,

particularly from close friends, can foster trust and reduce skepticism, emphasizing the social pressure of acting sustainably. (Brandão & Costa, 2021; Salem & Alanadoly, 2020) Herding or behavioral contagion is the main trigger of social groups in convincing the consumer to purchase eco-friendly products. (Salazar et al., 2013). Thus, we formulate the following hypothesis:

**H1:** Consumers' intention to purchase sustainable clothing is positively influenced by their subjective norms towards sustainable clothing products.

Greenwashing concerns (GC) involve misleading consumers with claims of environmental friendliness to enhance a company's public image, which can lead to reputational and financial damage. (Lyon & Montgomery, 2015) Moreover, the widespread practice of greenwashing in the textile industry of MICs can undermine consumers' trust, resulting in negative WOM and a norm of distrust, potentially discouraging their purchase intentions. (Rausch & Kopplin, 2021) However, there is disagreement within the TPB regarding its impact on consumers' intentions to purchase sustainable clothing. (Goh & Balaji, 2016; Zhang et al., 2020). We suggest additional investigation into consumer distrust and its influence on green purchasing intentions:

**H2:** Consumers' intention to purchase sustainable clothing is negatively influenced by their greenwashing concerns towards sustainable clothing products.

Attitude (ATT), an important predictor of behavioral intention within the TPB framework, reflects one's positive or negative assessment of the behavior, of purchasing sustainable clothing in this given context. (Ajzen, 1991) Studies suggest a positive relationship between attitudes and the purchase intention for sustainable clothing products, thus we propose:

**H3:** Consumers' intention to purchase sustainable clothing is positively influenced by their attitudes towards sustainable clothing products.

Environmental knowledge and concerns may play a role in forming one's attitudes, as well as intentions toward purchasing sustainable clothing. Perceived environmental knowledge (PEK) plays a key role in influencing one's intention to engage in environmentally friendly behaviors, like purchasing sustainable products. (Rausch & Kopplin, 2021). Individuals with greater environmental knowledge are more likely to engage in eco-conscious clothing consumption, impacting both their attitudes and intentions toward purchasing sustainable clothing. (Harris et al., 2016) On the same note, Environmental concern (EC) is an individual's level of interest and involvement in environmental issues. (Dagher & Itani, 2014) Those who are more concerned about the environment are prone to engage in green purchasing behavior and have positive attitudes toward sustainable products. (Rausch & Kopplin, 2021) Thus, we assume the following hypotheses:

**H4:** Consumers' intention to purchase sustainable clothing is positively influenced by their perceived environmental knowledge of sustainable clothing products.

**H5:** Consumers' attitude to purchasing sustainable clothing is positively influenced by their perceived environmental knowledge of sustainable clothing products.

**H6:** Consumers' intention to purchase sustainable clothing is positively influenced by their environmental concern about sustainable clothing products.

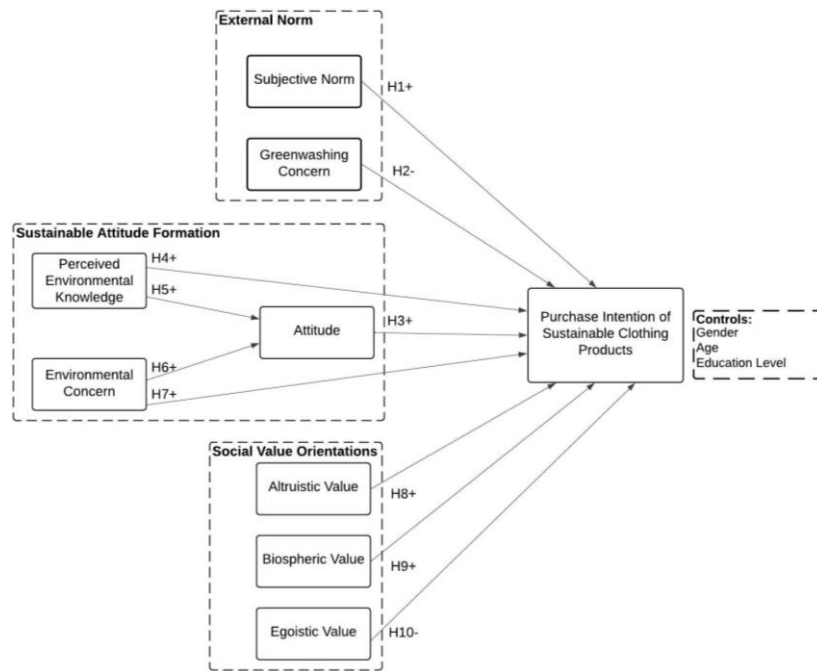
**H7:** Consumers' attitude to purchasing sustainable clothing is positively influenced by their environmental concern about sustainable clothing products.

Furthermore, individuals' different social value orientations (altruistic, biospheric, and egoistic) (Schultz, 2000; Stern, 2000; Stern et al., 1993, 1999) may influence their perceptions of the costs linked with purchasing sustainable clothing products (i.e. perceived lower quality, exclusion from fashion trends). (Amin & Tarun, 2021; Lundblad & Davies, 2016) Altruistic values (ALTR) focus on the well-being of others, while biospheric values (BIOS) emphasize the preservation of the natural environment and other species. (Han & Lee, 2016) Egoistic values (EGO) prioritize the personal advantages and disadvantages of engaging in green conduct. Although the literature does not provide sufficient evidence on the roles of these three value orientations in influencing consumers' intentions to purchase sustainable clothing, individuals with altruistic and biospheric values are more likely to engage in pro-environmental behavior and green purchasing, while egoistic values may hinder these actions. (Schwartz, 1992) Thus, we propose further research into these factors:

**H8:** Consumers' intention to purchase sustainable clothing is positively influenced by their altruistic values toward sustainable clothing products.

**H9:** Consumers' intention to purchase sustainable clothing is positively influenced by their biospheric values toward sustainable clothing products.

**H10:** Consumers' intention to purchase sustainable clothing is negatively influenced by their egoistic values toward sustainable clothing products.



**Fig. 1.** Research model for purchase intention of sustainable clothing products

**Methodology**

Data used for this study was gathered in Romania from November to December 2020, using an online, self-administered questionnaire that was distributed on various popular social media platforms (i.e. Facebook, LinkedIn, WhatsApp, etc.). The sample includes 1,087 respondents aware of the study’s purpose who gave their informed consent to participate voluntarily and anonymously. The questionnaire incorporated a combination of two sampling techniques, namely convenience sampling (Baltar & Brunet, 2012) and snowball sampling. (Browne, 2005; Heckathorn, 2011) The questionnaire is grounded in Rausch and Kopplin’s conceptual framework, incorporating the TPB predictors ATT, SN, and PEK, along with the environmental dimensions of EC and GC, (Rausch & Kopplin, 2021) and we have further enhanced it with the social value orientations: ALTR, BIOS, and EGO. (Roos & Hahn, 2019) All items were translated from English to Romanian and assessed using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). We, then, used the WarpPLS 7.0 software (WarpPLS, 2022) to conduct a partial least square-path modeling (PLS-PM) analysis of the relationships between variables, employing a structural equation model (SEM). (Joreskog, 1982) This method involves a measurement

(outer) model that assesses the relationship between measurement variables and their underlying latent constructs, and a structural (inner) model that looks at the relationships among latent variables. (Haenlein & Kaplan, 2004; Hair et al., 2011)

**Results and discussion**

The final sample included 1,018 respondents, of whom 87.3% were female, with ages ranging from 10 to 80 (mean 33.75, SD = 11.88). A significant majority, 84.2%, had a monthly income exceeding 1,000 RON. Our results are organized into three sections: firstly, we focus on the easurement model, then present the inner model, and finally, we explore the study's implications.

*Measurement model.* The first table demonstrates the reliability of the measurement model. Table 1, provides the composite reliability of each latent construct, which indicates the performance of the measurement model. All results met the recommended threshold of 0.7, (C.Nunnally & H.Bernstein, 1994) with values ranging from 0.852 (ATT) to 0.959 (SN). The model has strong internal consistency, with all of Cronbach’s Alpha values exceeding the 0.7 limit. (Cortina, 1993) The same goes for the AVE (average variance extracted) values that were higher than the required boundary of 0.5 (Fornell & Larcker, 1981), indicating adequate convergent validity.

**Table 1.** Reliability of Measurement Model

Dimension	Abbreviation	Composite reliability index (* > 0.7)	Cronbach’s Alpha (* > 0.7)	Average of variance extracted (* > 0.5)
<b>Dependent variables</b>				
Purchase intention	PI	0.916	0.876	0.731
<b>TPB independent variables</b>				
Attitudes	ATT	0.852	0.736	0.658

Subjective norms	SN	0.959	0.935	0.885
Perceived Environmental knowledge	PEK	0.943	0.919	0.805
Additional predictors				
Environmental concern	EC	0.938	0.912	0.791
Greenwashing concern	GC	0.922	0.876	0.798
Altruistic Value Orientations	ALT	0.870	0.775	0.690
Biospheric Value Orientations	BIO	0.913	0.869	0.722
Egoistic Value Orientations	EGO	0.871	0.777	0.692

Moving forward, we see that all diagonal values provided in the second table, Table 2, are higher than the corresponding off-diagonal, which also exceeded the threshold of 0.8. (Kennedy, 2008)

**Table 2.** Correlations among latent variables with square roots of AVE

Dimension	PI	ATT	SN	PEK	EC	GC	ALT	BIO	EGO
PI	<b>0.855</b>	0.650	0.421	0.412	0.529	0.490	0.341	0.356	0.068
ATT	0.659	<b>0.811</b>	0.526	0.449	0.519	0.456	0.299	0.364	0.003
SN	0.421	0.526	<b>0.941</b>	0.492	0.390	0.409	0.194	0.259	0.090
PEK	0.412	0.449	0.492	<b>0.897</b>	0.595	0.500	0.275	0.393	0.123
EC	0.529	0.519	0.390	0.595	<b>0.890</b>	0.648	0.374	0.547	0.083
GC	0.490	0.456	0.409	0.500	0.648	<b>0.893</b>	0.264	0.400	0.083
ALT	0.341	0.299	0.194	0.275	0.374	0.264	<b>0.831</b>	0.568	0.179
BIO	0.356	0.364	0.259	0.393	0.547	0.400	0.568	<b>0.849</b>	0.170
EGO	0.068	0.003	0.090	0.123	0.083	0.083	0.179	0.170	<b>0.832</b>

The third table, Table 3, shows the combined loadings and cross-loadings of our latent variables. The values of loadings exceed the 0.7 limit, ranging from 0.736 to 0.935. Considering these findings, both convergent and discriminant validity are established.

**Table 3.** Combined loadings and cross-loadings

Dimension	PI	ATT	SN	PEK	EC	GC	ALT	BIO	EGO
PI1	<b>0.791</b>	-0.078	-0.056	-0.037	0.023	-0.052	-0.023	-0.043	0.031
PI2	<b>0.874</b>	0.078	0.119	0.069	0.008	0.037	0.002	-0.011	0.020
PI3	<b>0.920</b>	0.033	-0.015	-0.021	0.012	0.009	-0.013	0.013	-0.035
PI4	<b>0.830</b>	-0.044	-0.056	-0.015	-0.043	0.000	0.034	0.037	-0.011
ATT1	0.120	<b>0.838</b>	-0.077	0.035	-0.036	0.026	0.018	0.087	0.036
ATT2	-0.256	<b>0.709</b>	0.054	0.035	-0.013	-0.030	-0.003	-0.138	-0.114
ATT3	0.093	<b>0.878</b>	0.029	-0.062	0.044	-0.001	-0.015	0.028	0.057
SN1	-0.026	0.022	<b>0.922</b>	-0.012	0.029	0.007	-0.006	-0.010	0.010
SN2	0.005	-0.020	<b>0.948</b>	-0.004	-0.014	-0.018	-0.011	0.002	0.025
SN3	0.020	-0.001	<b>0.951</b>	0.016	-0.014	0.010	0.017	0.008	-0.034
PEK1	-0.002	0.129	0.172	<b>0.846</b>	-0.027	0.003	-0.023	-0.026	0.010
PEK2	0.015	-0.004	-0.036	<b>0.916</b>	-0.010	0.007	0.020	-0.054	-0.041
PEK3	0.023	-0.039	-0.081	<b>0.933</b>	-0.016	0.008	0.024	0.016	-0.021
PEK4	-0.038	-0.079	-0.041	<b>0.890</b>	0.053	-0.018	-0.024	0.064	0.055
EC1	-0.007	0.045	-0.047	0.124	<b>0.894</b>	-0.106	0.019	0.024	0.003
EC2	0.046	0.063	-0.024	0.065	<b>0.897</b>	-0.020	0.005	-0.063	-0.028
EC3	-0.029	-0.089	0.056	-0.031	<b>0.886</b>	0.021	-0.039	0.009	0.002
EC4	-0.011	-0.020	0.016	-0.162	<b>0.881</b>	0.107	0.015	0.031	0.023
GC1	-0.043	-0.031	0.122	0.005	0.003	<b>0.890</b>	-0.013	-0.007	0.012
GC2	0.036	-0.048	0.023	0.025	-0.049	<b>0.935</b>	-0.013	-0.007	0.012
GC3	0.006	0.085	-0.152	-0.033	0.051	<b>0.852</b>	0.043	0.006	-0.004

ALT1	0.010	- 0.012	0.021	- 0.024	0.023	0.083	<b>0.837</b>	- 0.069	- 0.022
ALT2	- 0.024	0.053	0.035	0.048	- 0.020	- 0.059	<b>0.831</b>	- 0.020	- 0.025
ALT3	0.014	- 0.041	- 0.056	- 0.024	0.023	0.083	<b>0.824</b>	0.090	0.048
BIOS1	- 0.041	- 0.009	0.001	0.057	- 0.174	- 0.007	0.240	<b>0.736</b>	0.052
BIOS2	- 0.015	0.016	0.033	0.011	-0.063	0.054	- 0.053	<b>0.874</b>	- 0.022
BIOS3	- 0.038	0.078	- 0.044	- 0.030	0.133	- 0.054	- 0.030	<b>0.901</b>	- 0.008
BIOS4	0.090	- 0.088	0.011	-0.028	0.073	0.007	- 0.118	<b>0.872</b>	- 0.013
EGO1	0.021	0.016	- 0.110	0.034	- 0.065	0.017	0.177	0.114	<b>0.796</b>
EGO2	0.065	0.039	- 0.110	- 0.048	0.014	- 0.011	0.011	- 0.063	<b>0.876</b>
EGO3	- 0.089	- 0.057	0.126	0.018	0.048	-0.005	- 0.125	- 0.043	<b>0.822</b>

*Structural model.* Table 4 summarizes the results of the PLS mode. The model accounts for 50.9% of the total variation in the intention to purchase sustainable clothing (adjusted  $R^2 = 50.3\%$ ), while attitudes towards the purchase of sustainable clothing explain 30.4% (adjusted  $R^2 = 30.3\%$ ). Our analysis revealed no evidence of

endogeneity, statistical suppression, or Simpson's paradox. The average block variance inflation factor (VIF) is below the recommended threshold of 3.3, with a value of 1.624, while the Tenenhaus Goodness-of-fit result indicated a good model fit, with a value of 0.575.

**Table 4.** Results of the structural equation model

Estimated coefficients	Direct effects		Direct effect sizes (f <sup>2</sup> )		Indirect effects	Total effects (via PI)
	Purchase Intention	ATT	Purchase Intention	ATT		
PI	-	-	-	-	-	-
ATT	<b>0.453***</b> ( <b>&lt;0.001</b> )	-	0.295	-	-	0.453*** ( <b>&lt;0.001</b> )
SN	<b>0.055*</b> ( <b>0.019</b> )	-	0.023	-	-	0.055* (0.019)
PEK	- 0.000 (0.497)	<b>0.211***</b> ( <b>&lt;0.001</b> )	0.000	0.096	0.096*** ( <b>&lt;0.001</b> )	0.096** (0.004)
EC	<b>0.146***</b> ( <b>&lt;0.001</b> )	<b>0.396***</b> ( <b>&lt;0.001</b> )	0.078	0.208	0.180*** ( <b>&lt;0.001</b> )	0.326*** ( <b>&lt;0.001</b> )
GC	<b>0.139***</b> ( <b>&lt;0.001</b> )	-	0.069	-	-	0.139*** ( <b>&lt;0.001</b> )
ALT	<b>0.112***</b> ( <b>&lt;0.001</b> )	-	0.039	-	-	0.112*** ( <b>&lt;0.001</b> )
BIO	0.012 (0.329)	-	0.005	-	-	0.012 (0.329)
EGO	0.013 (0.329)	-	0.001	-	-	0.013 (0.329)
Gender	0.022 (0.170)	-	0.002	-	-	0.022 (0.170)
Age	- 0.006 (0.429)	-	0.001	-	-	- 0.006 (0.429)
Education	<b>0.039</b> ( <b>0.094</b> )	-	0.003	-	-	0.039 (0.094)
<b>The goodness of fit measures</b>						
R <sup>2</sup> / R <sup>2</sup> Adjusted	50.9% / 50.3%	30.4% / 30.3%	-	-	-	-
Tenehaus GoF	0.575 (large)	-	-	-	-	-
SRMR	0.054	-	-	-	-	-
SMAR	0.040	-	-	-	-	-

Note: \*\*\*-p value <0.001; \*\*-p value <0.01; \*-p value <0.05; -p value <0.10;

Note: Teenehaus GoF: small  $\geq 0.1$ , medium  $\geq 0.25$ , large  $\geq 0.36$ ;

In terms of the TPB constructs, both ATT ( $\beta = 0.453$ ,  $p < 0.001$ ) and SN ( $\beta = 0.055$ ,  $p = 0.019$ ) have a positive, statistically significant relationship with consumers' intention to buy sustainable clothing, supporting H1 and H3. We fail to accept H2 since GC ( $\beta = 0.139$ ,  $p < 0.001$ ) does not have a negative influence on the dependent variable. Effect sizes exceeding 0.02 may be considered meaningful for practical interventions and policy development. (Cohen, 2013) In this context, ATT (0.295) has a moderate effect size, while SN (0.023) and GC (0.069) are considered to have small effect sizes.

Concerning the formation of sustainable attitudes, our results suggest accepting H7, with EC ( $\beta = 0.146$ ,  $p < 0.001$ ) positively influencing purchasing intention, and rejecting H4 for PEK negatively impacting PI. However, PEK positively influences the sustainable attitude formation process ( $\beta = 0.211$ ,  $p < 0.001$ ), with an indirect effect size (0.096) that suggests a total mediation between the connection of ATT and PI. Moreover, EC ( $\beta = 0.180$ ,  $p < 0.001$ ) remains a significant player in controlling for the mediator, providing the needed evidence to confirm hypotheses H5 and H6.

Regarding the social value orientation constructs, we reject H9 and H10 and accept H8, with BIO ( $\beta = 0.012$ ,  $p = 0.329$ ) and EGO ( $\beta = 0.013$ ,  $p = 0.329$ ) not showing a statistically significant impact on PI, in contrast of ALT ( $\beta = 0.112$ ,  $p < 0.001$ ) that along with the strong statistical relationship, also shows a small effect size of 0.039.

Among the control variables used, only Education ( $\beta = 0.039$ ,  $p = 0.094$ ) influences the formation of sustainable purchasing intention.

The quantitative findings are consistent with previous research on green consumer behavior. Several studies have found that subjective norms have no significant influence (Rausch & Kopplin, 2021), through accepting the third hypothesis our results revealed a reasonable level of significance for this predictor. Furthermore, our findings on the positive impact of greenwashing concern on purchase intention are inconsistent with other green literature studies, since we have rejected the second hypothesis. (Goh & Balaji, 2016; Zhang et al., 2020) Altruistic values as the sole predictor representing social values in the formation of the dependent variable, adheres to other findings in the literature. (Schultz, 2000; Schwartz, 1992; Stern, 2000) Our results adhere to the literature findings, gratitude to accepting hypotheses six, seven, five, and six that show attitudes towards sustainable clothing play a crucial role in shaping consumers' decisions when purchasing sustainable clothing, with environmental concerns and perceived environmental knowledge significantly influencing the formation of attitudes toward purchase intention. (Jaiswal & Kant, 2018) Consistent with previous research, environmental concerns are significantly related to the dependent variable. However, our results for perceived environmental knowledge are distinctive, suggesting a complete mediation effect on attitude formation and no direct impact on purchase intention. Thus, we contribute to the existing literature with a new perspective on the process of forming sustainable attitudes.

The findings of this study provide a foundation for implementing policies that can benefit consumers, manufacturers, and stakeholders. To encourage the intention to purchase sustainable clothing, one strategy is to implement nudges or informational campaigns focusing on shaping consumers' attitudes and changing the subjective norms within the group. Moreover, these findings add to the green literature by expanding the TPB framework with new determinants, thereby broadening the theoretical understanding of green consumer behavior. A theoretical implication of this paper consists in validating the applicability of the TPB to explaining green consumer behavior in Romania, a MIC representative.

## Conclusions

The growing emphasis on sustainability, especially in the textile industry, highlights the crucial need to understand the factors that drive sustainable clothing consumption in middle-income countries like Romania. This study aims to address a gap in the existing green literature by exploring the connection between the TPB constructs, green predictors, and social values, focusing on purchasing intention as the outcome variable and considering attitudes towards purchasing intention. It underscores the crucial role played by a set of variables like attitude, social norms, perceived environmental knowledge, environmental concern, and greenwashing concern, along with social value orientations represented by altruistic, biospheric, and egoistic values in predicting the intention of consumers to purchase sustainable clothing.

On a sample of 1,087 respondents, the PLS-PM method is employed to evaluate the proposed framework, eventually contributing to the green literature and providing insights into the Romanian context as a representative MIC. Based on the analysis that was done, our study has tested ten hypotheses, however, we have found enough evidence to confirm six of them. Our findings go in line with the discussed literature and highlight attitudes as a key driver of the intention to purchase sustainable clothing, with perceived environmental knowledge serving as a crucial mediator in this relationship. Furthermore, altruistic values are positively associated with Romanian's intention to purchase sustainable clothing, accentuating the importance of fostering a mindset of compassion for sustainable fashion among consumers. We found the level of sustainable attitudes toward purchasing sustainable clothing along with the influence of social pressure, greenwashing concerns, and altruistic and biospheric values to shape the decision on whether or not to purchase sustainable clothing, in the context of a middle-income representative country.

Based on the discussion provided by looking through our findings, the study contributes with both theoretical and practical implications. Firstly, we participate to the green literature by offering insights into understanding consumer behavior towards sustainable clothing consumption and exploring different green predictors. Secondly, the study offers a starting point for drawing on

policies that can shape both consumers and manufacturers or stakeholders toward a more sustainable future.

Finally, despite its strengths, the study acknowledges certain limitations, such as an exclusive concentration on intention rather than behavior, possible prejudices in data collection, and biases in respondent demographics. Future research should employ more effective sampling methods and account for cultural differences in environmental concerns and value orientations. Notwithstanding its limitations, this study provides valuable insights into behavioral strategies to encourage sustainable clothing consumption, laying the foundation for future exploration of sustainable consumption behaviors.

## References

- Achabou, M. A., & Dekhili, S. (2013). Luxury and sustainable development: Is there a match? *Journal of Business Research*, 66(10), 1896–1903. <https://doi.org/10.1016/j.jbusres.2013.02.011>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Amin, S., & Tarun, M. T. (2021). Effect of consumption values on customers' green purchase intention: A mediating role of green trust. *Social Responsibility Journal*, 17(8), 1320–1336. <https://doi.org/10.1108/SRJ-05-2020-0191>
- Apaolaza, V., Policarpo, M. C., Hartmann, P., Paredes, M. R., & D'Souza, C. (2023). Sustainable clothing: Why conspicuous consumption and greenwashing matter. *Business Strategy and the Environment*, 32(6), 3766–3782. <https://doi.org/10.1002/bse.3335>
- Armstrong, C. M., Niinimäki, K., Lang, C., & Kujala, S. (2016). A Use-Oriented Clothing Economy? Preliminary Affirmation for Sustainable Clothing Consumption Alternatives. *Sustainable Development*, 24(1), 18–31. <https://doi.org/10.1002/sd.1602>
- Bahl, R., Panwar, T., Padhye, R., & Nayak, R. (2023). Are Australian Consumers Ready to Wear Recycled Clothing to Practice Sustainable Consumption? *Sustainability*, 15(21), Article 21. <https://doi.org/10.3390/su152115451>
- Baltar, F., & Brunet, I. (2012). Social research 2.0: Virtual snowball sampling method using Facebook. *Internet Research*, 22(1), 57–74. <https://doi.org/10.1108/10662241211199960>
- Bhardwaj, V., & Fairhurst, A. (2010). Fast fashion: Response to changes in the fashion industry. *The International Review of Retail, Distribution and Consumer Research*, 20(1), 165–173. <https://doi.org/10.1080/09593960903498300>
- Brandão, A., & Costa, A. G. da. (2021). Extending the theory of planned behaviour to understand the effects of barriers towards sustainable fashion consumption. *European Business Review*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/EBR-11-2020-0306>
- Browne, K. (2005). Snowball sampling: Using social networks to research non-heterosexual women. *International Journal of Social Research Methodology*, 8(1), 47–60. <https://doi.org/DOI:10.1080/1364557032000081663>
- Cameron, L. D., Brown, P. M., & Chapman, J. G. (1998). Social Value Orientations and Decisions to Take Proenvironmental Action1. *Journal of Applied Social Psychology*, 28(8), 675–697. <https://doi.org/10.1111/j.1559-1816.1998.tb01726.x>
- C. Nunnally, J., & H. Bernstein, I. (1994). Psychometric theory. <http://vlib.kmu.ac.ir/kmu/handle/kmu/84743>
- Cohen, J. (2013). *Statistical Power Analysis for the Behavioral Sciences*. Academic Press.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98–104. <https://doi.org/10.1037/0021-9010.78.1.98>
- Dagher, G. K., & Itani, O. (2014). Factors influencing green purchasing behaviour: Empirical evidence from the Lebanese consumers. *Journal of Consumer Behaviour*, 13(3), 188–195. <https://doi.org/10.1002/cb.1482>
- Eurostat. (2021a). International Trade in Goods since 2002 by CPA 2.1 (ds-059268). [https://ec.europa.eu/eurostat/databrowser/view/ds-059268\\_custom\\_9198135/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/ds-059268_custom_9198135/default/table?lang=en)
- Eurostat. (2021b). Treatment of waste by waste category, hazardousness and waste management operations (env\_wastrt). [https://ec.europa.eu/eurostat/databrowser/view/env\\_wastrt\\_custom\\_9235730/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/env_wastrt_custom_9235730/default/table?lang=en)
- Eurostat. (2021c, April 21). Where do our clothes come from? Where Do Our Clothes Come From? <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20210424-1>
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research* (Vol. 27).
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018). Sustainable business model innovation: A review. *Journal of Cleaner Production*, 198, 401–416. <https://doi.org/10.1016/j.jclepro.2018.06.240>
- Goh, S. K., & Balaji, M. S. (2016). Linking green skepticism to green purchase behavior. *Journal of Cleaner Production*, 131, 629–638. <https://doi.org/10.1016/j.jclepro.2016.04.122>
- Goworek, H., Oxborrow, L., Claxton, S., McLaren, A., Cooper, T., & Hill, H. (2020). Managing sustainability in the fashion business: Challenges in product development for clothing longevity in the UK. *Journal of Business Research*, 117, 629–641. <https://doi.org/10.1016/j.jbusres.2018.07.021>
- Haenlein, M., & Kaplan, A. M. (2004). A Beginner's Guide to Partial Least Squares Analysis. *Understanding Statistics*, 3(4), 283–297. [https://doi.org/10.1207/s15328031us0304\\_4](https://doi.org/10.1207/s15328031us0304_4)
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- Han, J. H., & Lee, E. (2016). The different roles of altruistic, biospheric, and egoistic value orientations in predicting customers' behavioral intentions toward green restaurants. *관광연구저널*, 30(10), 71–81. <https://doi.org/10.21298/IJTHR.2016.10.30.10.71>
- Harris, F., Roby, H., & Dibb, S. (2016). Sustainable clothing: Challenges, barriers and interventions for encouraging more sustainable consumer behaviour. *International Journal of Consumer Studies*, 40(3), 309–318. <https://doi.org/10.1111/ijcs.12257>
- Heckathorn, D. D. (2011). SNOWBALL VERSUS RESPONDENT-DRIVEN SAMPLING. *Sociological Methodology*, 41(1), 355–366. <https://doi.org/10.1111/j.1467-9531.2011.01244.x>
- Heuer, M., & Becker-Leifhold, C. (2018). *Eco-Friendly and Fair: Fast Fashion and Consumer Behaviour*. Routledge.
- Jaiswal, D., & Kant, R. (2018). Green purchasing behaviour: A conceptual framework and empirical investigation of Indian consumers. *Journal of Retailing and Consumer Services*, 41, 60–69. <https://doi.org/10.1016/j.jretconser.2017.11.008>
- Joreskog, K. G. (1982). The ML and PLS techniques for modeling with latent variables: Historical and comparative aspects. *Systems under Indirect Observation, Part I*, 263–270.
- Kennedy, P. (2008). *A Guide to Econometrics*. John Wiley & Sons.



- Kong, H. M., Ko, E., Chae, H., & Mattila, P. (2016). Understanding fashion consumers' attitude and behavioral intention toward sustainable fashion products: Focus on sustainable knowledge sources and knowledge types. *Journal of Global Fashion Marketing*, 7(2), 103–119. <https://doi.org/10.1080/20932685.2015.1131435>
- Lundblad, L., & Davies, I. A. (2016). The values and motivations behind sustainable fashion consumption. *Journal of Consumer Behaviour*, 15(2), 149–162. <https://doi.org/10.1002/cb.1559>
- Lyon, T. P., & Montgomery, A. W. (2015). The Means and End of Greenwash. *Organization & Environment*, 28(2), 223–249. <https://doi.org/10.1177/1086026615575332>
- Manley, A., Seock, Y.-K., & Shin, J. (2023). Exploring the perceptions and motivations of Gen Z and Millennials toward sustainable clothing. *Family and Consumer Sciences Research Journal*, 51(4), 313–327. <https://doi.org/10.1111/fcsr.12475>
- Mansoor, M., & Paul, J. (2022). Consumers' choice behavior: An interactive effect of expected eudaimonic well-being and green altruism. *Business Strategy and the Environment*, 31(1), 94–109. <https://doi.org/10.1002/bse.2876>
- Nayak, R., & Patnaik, A. (2021). *Waste Management in the Fashion and Textile Industries*. Woodhead Publishing.
- Rausch, T. M., & Kopplin, C. S. (2021). Bridge the gap: Consumers' purchase intention and behavior regarding sustainable clothing. *Journal of Cleaner Production*, 278, 123882. <https://doi.org/10.1016/j.jclepro.2020.123882>
- Roos, D., & Hahn, R. (2019). Understanding Collaborative Consumption: An Extension of the Theory of Planned Behavior with Value-Based Personal Norms. *Journal of Business Ethics*, 158. <https://doi.org/10.1007/s10551-017-3675-3>
- Salazar, H. A., Oerlemans, L., & Stroe-Biezen, S. van. (2013). Social influence on sustainable consumption: Evidence from a behavioural experiment. *International Journal of Consumer Studies*, 2(37), 172–180. <https://doi.org/10.1111/j.1470-6431.2012.01110.x>
- Salem, S., & Alanadoly, A. B. (2020). Personality traits and social media as drivers of word-of-mouth towards sustainable fashion. <https://doi.org/10.1108/jfmm-08-2019-0162>
- Schultz, P. W. (2000). New Environmental Theories: Empathizing With Nature: The Effects of Perspective Taking on Concern for Environmental Issues. *Journal of Social Issues*, 56(3), 391–406. <https://doi.org/10.1111/0022-4537.00174>
- Schwartz, S. H. (1992). Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 25, pp. 1–65). Academic Press. [https://doi.org/10.1016/S0065-2601\(08\)60281-6](https://doi.org/10.1016/S0065-2601(08)60281-6)
- Stern, P. C. (2000). New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues*, 56(3), 407–424. <https://doi.org/10.1111/0022-4537.00175>
- Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism. *Human Ecology Review*, 6(2), 81–97.
- Stern, P. C., Dietz, T., & Kalof, L. (1993). Value Orientations, Gender, and Environmental Concern. *Environment and Behavior*, 25(5), 322–348. <https://doi.org/10.1177/0013916593255002>
- WarpPLS. (2022). WarpPLS. <https://www.warppls.com/>
- WITS, D. (2021). World Integrated Trade Solution Data—Textiles and Clothing Imports. Textiles and Clothing Imports by Country in US\$ Thousand 2021. [https://wits.worldbank.org/CountryProfile/en/Country/WLD/Year/LTST/TradeFlow/Import/Partner/by-country/Product/50-63\\_TextCloth](https://wits.worldbank.org/CountryProfile/en/Country/WLD/Year/LTST/TradeFlow/Import/Partner/by-country/Product/50-63_TextCloth)
- World Trade, O. (2021). World Trade Statistical Review 2021. WTO iLibrary. <https://doi.org/10.30875/604b3e6d-en>
- World Trade, O. (2023). World Trade Statistical Review 2022. WTO iLibrary. <https://doi.org/10.30875/9789287053534>
- Zhang, L., Wu, T., Liu, S., Jiang, S., Wu, H., & Yang, J. (2020). Consumers' clothing disposal behaviors in Nanjing, China. *Journal of Cleaner Production*, 276, 123184. <https://doi.org/10.1016/j.jclepro.2020.123184>

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