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UNDERSTANDING POST-COVID-19 CONSUMER PURCHASE INTENTION FOR SUSTAINABLE CLOTHING: INSIGHTS FROM ROMANIA

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Abstract

Purpose: The past COVID-19 pandemic has improved consumer behaviors towards sustainability. Despite the situation, the textile industry's overconsumption phenomenon has increasingly reduced limited natural resources in recent years, driven by consumer purchasing behavior. This fact has raised concerns about its environmental impact, encouraging a growing interest in understanding consumer behaviors toward sustainable clothing purchases after going through a health crisis. This paper addresses the remaining significant gap in the literature regarding the determinants triggering this behavior in the post-COVID-19 context.

Approach: To address this issue, our study proposes a comprehensive framework that extends the Theory of Planned Behavior to integrate pro-environmental constructs and social value orientations. Conducted in Romania, our empirical study investigated a sample of 1,250 respondents. We applied the Partial Least Squares—Path Modeling procedure to analyze the collected data and identify relationships among variables.

Findings: This study's results illustrate the significant role of attitude, environmental concern, and altruistic orientation in shaping Romanian consumers' purchase intentions toward sustainable clothes after the COVID-19 pandemic. Moreover, we discovered a strong mediation effect on the attitude formation process.

Originality: The study provides valuable insights into Romanian consumer behavior after the COVID-19 health crisis and emphasizes the urgency of addressing overconsumption in the textile industry and promoting sustainable consumption practices. Hence, with

the found determinants, this study offers significant observations for policymakers and industry stakeholders wishing to encourage more sustainable consumer attitudes and behaviors, and eventually promote environmental sustainability within the textile industry.

Keywords:
Sustainable clothing consumption, Consumer purchase intention, Overconsumption, Theory of Planned Behavior, Post-COVID-19

JEL codes: L67; D12; Q56;

1. Introduction

The advent of fast fashion has popularized the concept of 'disposable fashion', which, in turn, has spurred overconsumption. This leads to heightened production and disposal of clothing, consequently hastening the depletion of natural resources and exacerbating climate change (Armstrong et al., 2016).

In 2022, Romania witnessed the conclusion of the COVID-19 public health emergency state alert and the onset of a neighboring conflict. The COVID-19 pandemic, coupled with its aftermath of economic recession and the energy crisis triggered by the Russo-Ukrainian war, has underscored the vulnerability of global industries and supply chains, contributing to a sluggish increase in the volume of world trade. The dollar value of trade in the textile sector experienced declines of 1% and 2% in 2022 and 2021, respectively. Global textile exports fell by 4.2% in 2022, trailing behind most industrial sectors. In contrast, world clothing exports increased by 5% in the same year, a significantly slower growth compared to the notable 20% surge in 2021. These trends can be attributed to decreasing demand for specific raw textiles due to the pandemic nearing its end, slow economic growth, and unprecedented inflation in major clothing and textile import markets, which collectively impacted consumer discretionary spending, including clothing purchases (World Trade, 2024, 2023).

Romania actively participated in the textile trade, importing approximately 176,464.9 tons of textiles in 2022, marking a 6.28% decrease from 2021's import volume of 188,297.5 tons. The steepest decline was recorded in 2023, with only 172,988.2 tons imported, representing an 8.13% reduction from 2021 (Eurostat, 2024). Moreover, Romania disposed of more than ten thousand tons of garments in 2020 (Eurostat, 2020). The increasing volume of clothing purchased per person contributes to the growing trend of overconsumption, resulting in impulsive buying behaviors, hazardous rates of clothing disposal, and the diminishing of valuable resources. (Achabou & Dekhili, 2013; Nayak & Patnaik, 2021).

Although the COVID-19 pandemic temporarily slowed down the fast fashion phenomenon, little research exists exploring the determinants of sustainable clothing consumption

in a post-pandemic context, particularly in Romania.

Sustainable consumption is defined by Geiger et al. as "individual acts of satisfying needs in different areas of life by acquiring, using and disposing of goods and services that do not compromise the ecological and socioeconomic conditions of all people (currently living or in the future) to satisfy their own needs" (Geiger et al., 2018, p. 5). Rausch and Kopplin provide a different view on this concept and describe sustainable clothing consumption as "*pro-environmental actions at every stage of the garment's life cycle from pre-purchase to post-purchase comprising its acquisition, storage, usage, and care, as well as discard*" (Rausch & Kopplin, 2021, p.2). On this note, the literature suggests that sustainable clothing consumption practices include buying less, prioritizing quality over quantity, purchasing second-hand items, and engaging in rental or swapping schemes (Armstrong et al., 2016; Dao & Martinez, 2024; Rausch & Kopplin, 2021). While existing literature predominantly examines drivers and inhibitors of sustainable clothing consumption pre-COVID-19 or during COVID-19 (Armstrong et al., 2016; Brydges et al., 2020, 2020; Goworek et al., 2020; Rausch & Kopplin, 2021), there is a lack of exhaustive research framework combining the influence of social value orientations (altruistic, biospheric, and egoistic) on sustainable clothing consumption in the post-COVID-19 era (Armstrong et al., 2016; Goworek et al., 2020).

Hence, framed within the Theory of Planned Behavior (TPB) (Ajzen, 1991), this study aims to 1) examine previously identified predictors, including subjective norms, greenwashing concerns, and sustainable attitudes toward sustainable clothing consumption in a post-COVID-19 Romania; 2) investigate the impact of consumers' value orientations on their intention to purchase sustainable clothing; and 3) elucidate the process of forming sustainable attitudes among post-COVID-19 Romanian consumers. Precisely, we present the following questions:

(1) To what extent do external factors, such as subjective norms and greenwashing concerns, influence the intention of purchasing sustainable clothing among Romanian consumers in a post-COVID-19 context?
(2) What impact do the social value orientations of Romanian consumers, including altruistic, biospheric, and egoistic value orientations, have on their intention to purchase sustainable clothing in a post-COVID-19 context?
(3) What factors contribute to the formation of sustainable attitudes among Romanian consumers, and to what extent do these attitudes influence their intention to purchase sustainable clothing in a post-COVID-19 context?

We employ measurement scales derived from Rausch & Kopplin (2021) and de Groot & Steg (2008), applying the Partial Least Squares path modeling (PLS-PM) approach to analyze data collected from 1,250 respondents in Romania.

Our results enrich the literature on sustainable clothing consumption by highlighting its drivers and emphasizing the significance of both sustainable attitudes and social value orientations in predicting the intention to purchase sustainable clothing in post-COVID-19 Romania. Moreover, we underscore the process involved in forming sustainable

attitudes in Romania in a post-pandemic context and provide practical implications for promoting sustainable clothing purchases and reducing overconsumption.

The paper is structured as follows: the second section briefly reviews the literature on sustainable clothing consumption and underlines the research gaps. We also establish our hypothesis based on TPB and other findings and introduce our comprehensive research framework. The following sections detail the methodology employed and, discuss the main results. The final section concludes the study and provides theoretical and practical implications, along with recommendations for future research areas of more in-depth exploration.

2. Literature review

2.1 Sustainable clothing consumption in a post-COVID-19 context

The concept of sustainable clothing consumption predates the COVID-19 pandemic (Iran et al., 2022; Rausch & Kopplin, 2021). It entails the production, acquisition, use, reuse, and disposal of clothing and other fashion apparel in a manner that aligns with environmentally friendly principles, aiming to mitigate negative impacts on the environment, economy, and society. Sustainable clothing consumption integrates various ecological practices and materials to reduce the ecological footprint within the fashion industry, encompassing the utilization of clothing that minimizes the waste of natural resources, avoids toxic materials, and mitigates environmental pollution. Gwilt (2020) proposes five stages for the lifecycle of a garment; that is design, production, distribution, use, and end-of-life. In this proposition, the consumer interacts with the apparel in the distribution, use, and end-of-life phases with consumers interacting predominantly during the distribution, use, and end-of-life phases. Therefore, sustainable clothing consumption can be delineated into three primary stages (Dao & Martinez, 2024; Gwilt, 2020; Kovacs, 2021).

Numerous studies on sustainable clothing consumption have looked mainly into post-consumption behaviors, such as the reuse, recycling, and donation of clothing. (Armstrong et al., 2016; Goworek et al., 2020). Others have explored potential solutions, such as secondhand purchases and wardrobe rental or exchange, as alternatives to conventional shopping practices. (Armstrong et al., 2016; Lundblad & Davies, 2016; Rausch & Kopplin, 2021). As Armstrong et al. (2016) discovered, clothing rental and swapping services can be appealing to consumers, especially the younger generations. These services offer a convenient and cost-effective way to explore different styles without accumulating unwanted items. However, when it comes to clothing consumption, Goworek et al. (2012) found that many consumers choose to purchase inexpensive clothing, even though they understand the environmental consequences. Some consumers believe that sustainable clothes are too costly, while others associate durability with traditional, non-sustainable clothing. The study, emphasizes the need for greater consumer education by providing them with

transparent information about the production process and disposal methods of clothing.

The context of the COVID-19 pandemic has significantly reshaped the textile industry landscape worldwide, prompting scholars to investigate shifts in clothing consumer behavior resulting from the global health crisis. (Iran et al., 2022; Loranger & Roeraas, 2023; Strübel et al., 2023). While some research found evidence regarding changes in consumers attitudes toward clothing consumption as a consequence of the pandemic (Iran et al., 2022), other studies found no significant differences in attitudes regarding the consumption of sustainable clothing consumption (Strübel et al., 2023).

While research has focused on post-pandemic shifts in sustainable clothing consumption, there is a dearth of studies exploring its pre-consumption stage, especially after the COVID-19 pandemic. This pre-consumption phase is significantly influenced by external factors such as consumption norms, industrial practices, existing knowledge, environmental concerns, and social value orientations. Moreover, before the COVID-19 crisis, Rausch & Kopplin (2021) suggest that attitudes favoring sustainable clothing significantly impact purchase intentions, with environmental knowledge and concerns playing crucial roles in attitude formation. However, existing findings primarily stem from pre- or during-COVID-19 contexts and lack empirical support from a post-pandemic perspective, particularly in Romania. Additionally, the literature often overlooks the integration of social value orientations into sustainable clothing consumption discussions. While Iran et al. (2022) discuss minimalist style preferences, this study's perspective does not delve into these orientations.

Therefore, beyond validating the existing behavioral constructs under the novel context of post-COVID-19 Romania, our study investigates the roles of social value orientation in driving the purchase intention of sustainable clothing products. We present our research model and hypothesis development within this context as follows.

2.2 Theory of Planned Behavior

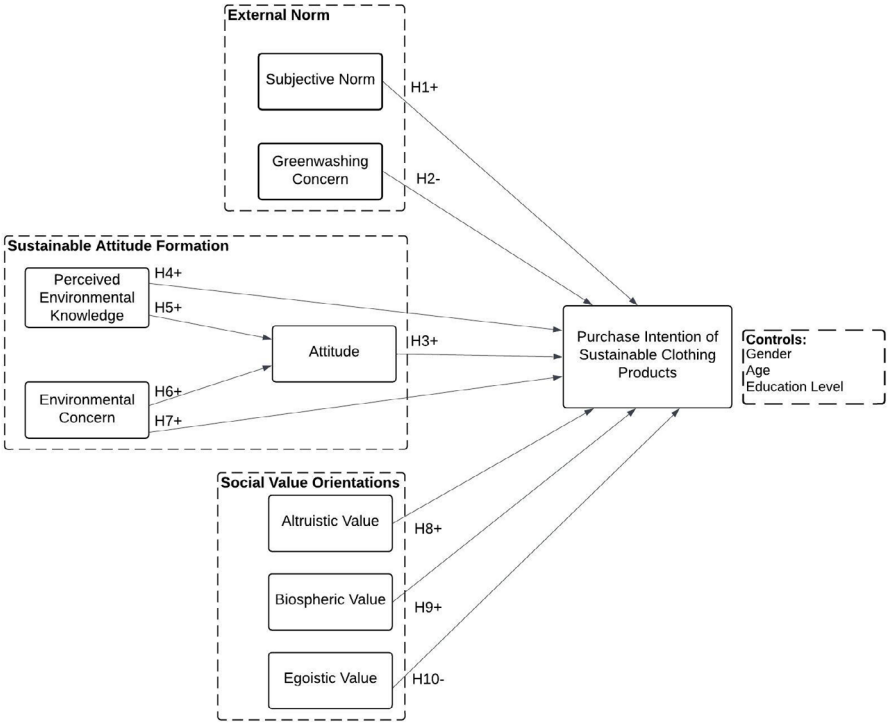
The Theory of Planned Behavior (TPB) stands out as one of the most comprehensive and empirically supported models for understanding consumer behaviors. (Ajzen, 1991). According to TPB, behaviors are influenced by intentions, which, in turn, are shaped by beliefs about the behavior (attitudes), expectations of others (subjective norms), and perceived control over the behavior (perceived behavioral control). TPB, whether in its standard form or through various extensions, has been widely applied to elucidate intentions related to purchasing green products (Choi & Johnson, 2019), as well as engaging in pro-environmental behaviors (Botetzagias et al., 2015; Li et al., 2018). Moreover, TPB has been instrumental in understanding sustainable consumption. (Rausch & Kopplin, 2021) and collaborative consumption (Ianole-Călin et al., 2020; Roos & Hahn, 2019).

In the context of our study, an individual's purchase intention of sustainable clothes may be influenced by external consumption norms and the views of others, known as subjective norms. Additionally, the prevalence of the greenwashing practice in the textile industry

may weaken trust, resulting in negative word-of-mouth (WOM) and fostering a culture of distrust among consumers, thereby discouraging their purchasing intention externally. (Rausch & Kopplin, 2021; L. Zhang et al., 2020). Furthermore, attitudes towards purchasing sustainable clothes may be shaped by individuals' existing environmental knowledge and concerns. Also, various social value orientations, including altruistic, biospheric, and egoistic orientations (Schultz, 2000; Stern, 2000), may influence purchase intentions for sustainable clothes by triggering different perceptions of associated costs, such as potential exclusion from fashion trends or perceived lower-quality (Lundblad & Davies, 2016).

Based on the theoretical framework of TPB, we present our research framework in Figure 1 and formulate our hypotheses in the subsequent sections.

Figure 1. The research model.



Source: Author's research.

2.3 The Effects of External Norms

Norms are external guidelines and phenomena that direct individuals towards behaviors deemed appropriate or prevent them from engaging in socially unacceptable actions.

External norms influencing consumers' decisions to buy sustainable clothing products encompass subjective norms derived from the consumption behaviors of socially significant others, as well as industrial norms established through consistent production or marketing practices.

2.3.1 Subjective norm

Subjective norm (SN) is known to be a social predictor mainly influenced by perceived social pressure on whether to engage in a behavior (Ajzen, 1991). In this regard, WOM plays a significant role in tailoring one's view, particularly among friends. This phenomenon was primarily present during the pandemic crisis when there was a decrease in WOM (Byun et al., 2023). However, environmentally conscious consumers are inclined to share their perspectives and encourage peers to adopt eco-friendly behaviors. Recommendations from close friends foster trust and reduce uncertainty, highlighting social pressure (Salem & Alanadoly, 2020). At the core of this norm lies behavioral contagion or herding, which prompts individuals to emulate others' consumption patterns as social groups wield significant influence in determining an individual's preference for environmentally friendly products (Salazar et al., 2013). Thus, we propose:

H1: Subjective norms towards sustainable clothing products positively influence consumers' intention to purchase them.

2.3.2 Greenwashing concern

Greenwashing concern (GC) refers to the deceptive use of eco-friendly marketing to cultivate a positive public image, with some scholars characterizing it as organizations misleadingly portraying environmentally friendly outcomes (Lyon & Maxwell, 2011; Lyon & Montgomery, 2015; Marquis et al., 2016; Rausch & Kopplin, 2021). Greenwashers may conceal or selectively disclose negative environmental information, risking damage to reputation and finances, influencing customer sentiment, and potentially harming relationships with stakeholders. Despite conflicting findings within the TPB framework regarding whether greenwashing concerns significantly influence consumers' intentions to purchase sustainable clothing (Goh & Balaji, 2016; Mostafa, 2006; Rausch & Kopplin, 2021; Zhang et al., 2020). Thus, we advocate for further exploration of consumer distrust and its ramifications on green purchasing intentions:

H2: Greenwashing concern toward sustainable clothing products negatively influences consumers' intention to purchase them.

2.4 Formation of Sustainable Attitude

Attitude (ATT) towards purchasing sustainable clothes is influenced by the significance of consumption and possession in an individual's life. Research has found attitudes

to have a positive influence on consumers' purchase intentions regarding sustainable clothing. (Rausch & Kopplin, 2021). This predictor is recognized as an important predictor of behavioral intentions and is internally formed based on one's knowledge and perceived sentiments.

H3: Attitudes towards sustainable clothing products positively influence consumers' intention to purchase them.

2.4.1 Perceived environmental knowledge

Perceived environmental knowledge (PEK) is believed to be a significant determinant of behavioral intention, particularly concerning the purchase of sustainable products. (Goh & Balaji, 2016; Rausch & Kopplin, 2021; Kot, 2023). Described as a comprehension of facts, concepts, and relationships with the environment and its ecosystems, it reflects one's awareness of environmental issues and the impact of human actions on the environment. (Fryxell & Lo, 2003; Goh & Balaji, 2016). Previous research has linked higher environmental knowledge to increased engagement in eco-conscious clothing consumption. (Harris et al., 2016). Furthermore, scholars have highlighted the significance of PEK as a cognitive factor in shaping a favorable attitude toward sustainable clothing. (Goh & Balaji, 2016; Rausch & Kopplin, 2021). It is reasonable to expect PEK to influence both attitude and intention toward the purchase of sustainable clothing, with attitude serving as a mediator in this relationship. Thus, we propose:

H4: Perceived environmental knowledge towards sustainable clothing products positively influences consumers' attitudes to purchasing them.

H5: Perceived environmental knowledge towards sustainable clothing products positively influences consumers' intention to purchase them.

2.4.2 Environmental concern

Environmental concern (EC) is defined in the literature as the degree of concern individuals have regarding green issues, which is reflected in their commitment to environmental protection (Dagher & Itani, 2014; Rausch & Kopplin, 2021). Research has consistently demonstrated a strong association between a higher level of environmental concern and green purchasing behavior (Goh & Balaji, 2016; Rausch & Kopplin, 2021). Furthermore, studies have highlighted its mediating role in shaping green purchasing intentions and have identified it as a significant determinant of individuals' attitudes towards sustainable products, alongside environmental knowledge (Jaiswal & Kant, 2018; Rausch & Kopplin, 2021). Therefore, we suggest:

H6: Environmental concern towards sustainable clothing products positively influences consumers' attitudes to purchasing them.

H7: Environmental concern towards sustainable clothing products positively influences consumers' intention to purchase them.

2.5 Influences of Social Value Orientations

The environmental behavior literature identifies three key social value orientations crucial for understanding environmental beliefs and intentions: altruistic, biospheric, and egoistic (de Groot & Steg, 2008; Schultz, 2000; Stern, 2000). Altruistic values (ALT) pertain to considerations of the costs and benefits for the well-being of others. Biospheric values (BIO) focus on the intrinsic value of ecosystems and the care for natural environments and other species (Han & Lee, 2016). Egoistic values (EGO) consider personal costs and benefits when contemplating environmentally friendly actions. Scholars have demonstrated a strong positive influence of both altruistic and biospheric values on engagement in pro-environmental behavior and green purchasing, while egoistic values have been associated with a negative impact on environmental behavior (Schwartz, 1992; Stern et al., 1995; Straughan & Roberts, 1999).

However, there is a dearth of evidence in the literature regarding the roles of these three value orientations in influencing consumers' intentions to purchase sustainable clothing, especially in post-pandemic Romania. Therefore, we propose a further investigation into consumers' social value orientations and their influence on green purchasing intentions:

H8: Altruistic values towards sustainable clothing products positively influence consumers' intention to purchase them.

H9: Biospheric values towards sustainable clothing products positively influence consumers' intention to purchase them.

H10: Egoistic values towards sustainable clothing products positively influence consumers' intention to purchase them.

3. Methodology

The data collection process took place in Romania from November to December 2023. The action involved disseminating an online, self-administrated questionnaire via multiple social media platforms, with each participant encouraged to share the questionnaire within their network. Thus, it employs both convenience sampling (Baltar & Brunet, 2012) and snowball sampling (Browne, 2005; Heckathorn, 2011) methods. The sample consists of 1,250 respondents who have given their consent to voluntarily participate in the study. Before completing the questionnaire, participants were assured of the anonymity of their responses and informed of its research purpose.

Our conceptual questionnaire was first crafted upon Rausch and Kopplin's (2021) conceptual framework that includes the TPB predictor, such as ATT, SN, and PEK, the environmental dimensions EC and GC, and the social values orientations ALT, BIO, and EGO. The conceptual framework was validated in a prior work of the author; thus, no improvements were brought. All items were translated from English to Romania and measured on a Likert seven-point response scale.

We used a partial least square-path modeling (PLS-PM) analysis to examine contemporary relations between variables, employing a structural equation model (SEM) (Joreskog, 1982). The following section reports two components of the PLS-SEM model: the measurement (or outer) model, which evaluates the connection between the measurement items and their associated latent constructs, and a structural (or inner) model, which estimates the genuine relationships among the latent variables incorporated in the model (Haenlein & Kaplan, 2004; Hair et al., 2011). Our analysis was conducted utilizing WarpPLS 8.0 software (WarpPLS, 2022).

4. Results and discussion

Our sample comprises 1,250 respondents (77.2% female and 22.8% male) with an average age of 35.73 years (median = 35, sd = 12.44). Most respondents have declared having a monthly income higher than 5000 RON (35.6%), while 77.4% of them have declared to have higher studies.

The results are structured in three parts: first, the outer model will be presented, then the inner model, and finally we will discuss the implications. This method has been chosen for greater data summarization.

4.1 The Outer (Measurement) Model

The first table, Table 1, presents an overview of the reliability of the measurement for each latent construct. The composite reliability values exhibit high levels, surpassing the recommended threshold of 0.70 (C.Nunnally & H.Bernstein, 1994), with values ranging from a minimum of 0.861 for attitudes to a maximum of 0.967 for subjective norms. Additionally, the Cronbach's alpha values exceed 0.70, indicating strong internal consistency (Cortina, 1993), subjective norms having the highest Cronbach's alpha of 0.949. Moreover, the average variance extracted (AVE) for each composite variable exceeds the recommended threshold of 0.50 (Fornell & Larcker, 1981). Based on these findings, the reliability of the measurement is affirmed.

Table 1. Composite reliability of measurement model.

Dimension	Abbreviation	Composite reliability index (* > 0.7)	Cronbach's Alpha (* > 0.7)	Average of variance extracted (* > 0.5)
Dependent variables				
Purchase intention	PI	0.918	0.880	0.737
TPB independent variables				
Attitudes	ATT	0.861	0.757	0.676
Subjective norms	SN	0.967	0.949	0.907
Perceived Environmental knowledge	PEK	0.944	0.921	0.809
Additional predictors				
Environmental concern	EC	0.945	0.923	0.812
Greenwash concern	GC	0.920	0.869	0.794
Altruistic Value Orientations	ALT	0.863	0.761	0.677
Biospheric Value Orientations	BIO	0.915	0.873	0.730
Egoistic Value Orientations	EGO	0.874	0.783	0.699

Source: Author's research results.

Table 2 shows that all off-diagonal correlations between the latent constructs are below the 0.8 threshold (Kennedy, 2008). Moreover, all block diagonal values associated with each latent construct are higher than the corresponding off-diagonal values. Thus, both convergent and discriminant validity hold.

Table 2. Correlations among latent constructs with square roots of AVE.

Dimension	PI	ATT	SN	PEK	EC	GC	ALT	BIO	EGO
PI	**0.859**	0.669	0.468	0.47	0.522	0.540	0.386	0.358	0.072
ATT	0.669	**0.822**	0.576	0.514	0.539	0.511	0.355	0.384	0.035
SN	0.468	0.576	**0.953**	0.505	0.465	0.469	0.225	0.265	0.079
PEK	0.470	0.514	0.505	**0.900**	0.597	0.526	0.282	0.376	0.163
EC	0.522	0.539	0.465	0.597	**0.901**	0.687	0.366	0.530	0.132
GC	0.540	0.511	0.469	0.526	0.687	**0.891**	0.294	0.408	0.074
ALT	0.386	0.355	0.225	0.282	0.366	0.294	**0.823**	0.563	0.237
BIO	0.358	0.384	0.265	0.376	0.530	0.408	0.563	**0.854**	0.261
EGO	0.072	0.035	0.079	0.163	0.132	0.074	0.237	0.261	**0.836**

Source: Author's research results

Furthermore, Table 3 contains the combined loadings and cross-loadings of all measured items employed in the reflective measurement of the latent constructs. All loadings are above the literature's threshold of 0.7, with values ranging from a minimum of 0.718 to a maximum of 0.956. Additionally, all off-diagonal values are below the diagonal value for each block of measurement items.

Table 3. Combined loadings and cross-loadings.

Dimension	PI	ATT	SN	PEK	EC	GC	ALT	BIO	EGO
PI1	**0.783**	-0.185	-0.029	0.024	-0.072	-0.016	0.044	0.026	-0.021
PI2	**0.873**	0.064	0.153	-0.015	0.065	0.051	-0.088	0.013	0.021
PI3	**0.918**	0.041	-0.011	-0.006	0.037	-0.037	-0.015	-0.025	-0.011
PI4	**0.856**	0.059	-0.118	-0.000	-0.04	0.003	0.065	-0.010	0.010
ATT1	0.068	**0.858**	-0.119	0.106	-0.048	0.027	-0.023	0.084	-0.010
ATT2	-0.233	**0.718**	-0.028	-0.092	-0.029	-0.034	0.087	-0.146	0.008
ATT3	0.124	**0.881**	0.139	-0.028	0.07	0.001	-0.048	0.037	0.003
SN1	-0.011	-0.027	**0.940**	-0.007	-0.002	0.018	0.006	0.021	0.003
SN2	-0.005	0.017	**0.956**	0.006	-0.006	-0.02	-0.009	-0.013	-0.001
SN3	0.016	0.010	**0.961**	0.000	0.008	0.002	0.003	-0.007	-0.002
PEK1	0.009	0.131	0.053	**0.863**	-0.057	0.046	0.011	-0.043	0.019
PEK2	0.018	-0.03	-0.002	**0.926**	-0.021	-0.04	0.015	0.026	-0.059

PEK3	0.013	-0.017	-0.031	**0.921**	0.003	-0.016	-0.003	0.03	0.014
PEK4	-0.041	-0.078	-0.018	**0.887**	0.075	0.013	-0.023	-0.017	0.028
EC1	0.028	-0.044	-0.024	0.073	**0.891**	-0.075	0.003	0.027	-0.003
EC2	0.02	0.056	-0.017	0.080	**0.900**	0.017	-0.022	-0.014	-0.021
EC3	-0.013	-0.034	0.052	-0.055	**0.908**	0.000	0.035	-0.073	0.018
EC4	-0.034	0.022	-0.011	-0.096	**0.905**	0.057	-0.016	0.06	0.005
GC1	-0.007	0.01	0.098	-0.006	-0.008	**0.904**	-0.058	0.028	0.03
GC2	0.026	0.001	0.024	-0.007	-0.032	**0.934**	-0.049	0.007	0.019
GC3	-0.022	-0.013	-0.133	0.015	0.045	**0.831**	0.117	-0.038	-0.054
ALT1	0.059	-0.028	0.028	-0.043	0.101	-0.048	**0.827**	-0.080	0.051
ALT2	-0.030	0.020	-0.018	0.085	-0.124	0.048	**0.818**	0.053	-0.140
ALT3	-0.030	0.008	-0.010	-0.041	0.022	0.001	**0.823**	0.028	0.088
BIOS1	0.052	-0.071	-0.007	-0.011	-0.215	0.005	0.169	0.715	-0.013
BIOS2	-0.012	0.024	0.013	0.039	-0.050	0.045	-0.058	**0.893**	0.007
BIOS3	-0.005	-0.008	-0.014	0.000	0.126	-0.013	-0.041	**0.910**	-0.014
BIOS4	-0.025	0.042	0.007	-0.031	0.095	-0.036	-0.036	**0.884**	0.017
EGO1	0.076	-0.058	-0.042	0.095	-0.023	-0.041	0.083	0.199	**0.783**
EGO2	0.009	-0.007	0.004	-0.082	-0.009	0.026	-0.015	-0.014	**0.893**
EGO3	-0.081	0.062	0.035	-0.001	0.032	0.011	-0.062	-0.173	**0.828**

Source: Author's research results.

4.2 The Inner (Structural) Model

Table 4 summarizes the estimated coefficients of the research model alongside their corresponding effect sizes. The explained variance (R^2) for the behavioral intention to purchase sustainable clothes is reported as 56.7%, with an adjusted R^2 of 56.3%. Similarly, for attitudes towards sustainable clothing, the explained variance is 35.7%, with an adjusted value of 35.6%. The standardized root mean squared residual (SRMR) alongside the standardized mean absolute residual (SMAR) have both values lower than the given threshold. The Tenehaus goodness-of-fit index is indicating a large value, 0.615. Statistical suppression or Simpson's paradox found no endogeneity, while all average block, (AVIF) is 1.654, within the threshold of 3,3.

Table 4. The results of the structural equations model.

	Direct effects		Direct effect sizes (f2)		Indirect effects	Total effects (via PI)
Estimated coefficients	Purchase Intention	ATT	Purchase Intention	ATT		
PI	-	-	-	-	-	-
ATT	**0.450*** (<0.001)**	-	0.301	-	-	0.450*** (<0.001)
SN	**0.038. (0.087)**	-	0.018	-	-	0.038* (0.019)
PEK	**0.059* (0.018)**	**0.316*** (<0.001)**	0.028	0.166	0.142*** (<0.001)	0.201** (0.004)
EC	**0.074** (0.004)**	**0.354*** (<0.001)**	0.039	0.191	0.159*** (<0.001)	0.234*** (<0.001)
GC	**0.191*** (<0.001)**	-	0.103	-	-	0.191*** (<0.001)
ALT	**0.144*** (<0.001)**	-	0.056	-	-	0.144*** (<0.001)
BIO	**0.057* (0.021)**	-	0.021	-	-	0.057 (0.329)
EGO	- 0.010 (0.366)	-	0.001	-	-	- 0.010 (0.329)
Gender	- 0.000 (0.494)	-	0.000	-	-	- 0.000 (0.170)
Age	- 0.003 (0.454)	-	0.000	-	-	- 0.003 (0.429)
Education	0.029 (0.150)	-	0.001	-	-	0.039 (0.094).
The goodness of fit measures						
R2 / R2 Adjusted	56.7% / 56.3%	35.7% / 35.6%	-	-	-	-
Tenehaus GoF	0.615 (large)	-	-	-	-	-
SRMR	0.063	-	-	-	-	-
SMAR	0.047	-	-	-	-	-

Source: Authors' research results.
*Note: ***-p value <0.001; **-p value <0.01; *-p value <0.05; -p value <0.10;*
Note: Teenehaus GoF: small >= 0.1, medium >= 0.25, large >= 0.36;

Among the TPB constructs, only ATT ($\beta = 0.450$, $p < 0.001$) is positively correlated with consumers' intention to purchase sustainable clothes, while SN ($\beta = 0.038$, $p = 0.087$) is above the threshold of 0.05, but below 0.1. However, we fail to accept H1 and confirm H3. Moreover, the effect size of ATT (0.301) is deemed moderate when predicting behavioral intention. Scholars suggest that effect sizes exceeding the threshold of 0.02 could be pertinent for practical interventions and policy formula (Cohen, 2013). Despite the anticipation of a negative influence of GC ($\beta = 0.191$, $p < 0.001$) on the dependent variable, we fail to accept H2.

In regards to sustainable attitude formation, we accept both H4 and H7, since the two predictors PEK ($\beta = 0.059$, $p = 0.018$) and EC ($\beta = 0.074$, $p = 0.004$) positively influence PI. Additionally, hypotheses H5 and H6 are confirmed as well, since both PEK ($\beta = 0.316$, $p < 0.001$) and EC ($\beta = 0.354$, $p < 0.001$) have a positive impact on attitude formation. Supported by the indirect effect of the relationship, PEK (0.166) and EC (0.191) play significant roles in controlling for the mediator.

For the social value orientations category, EGO ($\beta = - 0.010$, $p = 0.366$) does not exhibit statistical significance in the formation of sustainable purchase intention. Therefore, we fail to accept H10. In contrast, ALT ($\beta = 0.144$, $p < 0.001$) and BIO ($\beta = 0.057$, $p = 0.021$) positively impact the purchase intention variable, confirming H8 and H9. Despite their small effect sizes, ALT (0.056), and BIO (0.021), they remain valid for intervention in these directions.

In our analysis, Gender ($\beta = - 0.000$, $p = 0.494$), Age ($\beta = - 0.003$, $p = 0.454$), and Education ($\beta = 0.029$, $p = 0.150$) were found not to have any statistical significance in impacting the intention to purchase sustainable products.

4.3 Discussion and Implications

The COVID-19 pandemic had a great impact on the daily lives of many consumers, in the sense that these disruptions such as lockdowns and social distancing induced alterations in clothing consumption habits (Iran et al., 2022; Liu et al., 2021). The current study adds to the theory of sustainable clothing consumption. It addresses the gap in quantitative research concerning the consumption of sustainable clothes after the end of the COVID-19 health crisis, which is particularly more pronounced in Romania.

In this context, we contributed to the green literature by introducing an extended Theory of Planned Behavior (TPB) framework that manages to incorporate novel predictors. Our primary findings validate the efficacy of the TPB in understanding green consumer behavior within the Romanian population and in assessing changes in behavior as an after-effect of the pandemic, thus representing a noteworthy implication of this study. The study stands with Rausch and Kopplin's (2021) notes on the advantages of this particular framework when considering explaining the behavioral determinants of intention.

Our quantitative findings are consistent with prior research on green consumer behavior. We found subjective norms to have no significant impact, thus adhering to Rausch

& Kopplin's (2021) findings. This goes against our expectations regarding the pandemic context since Byun et al. (2023) identified word-of-mouth to decrease during the health crisis, shifting the social pressure focal point on social media advertising. Although social pressure was present, it did not alter consumers' clothing consumption patterns. Furthermore, our observation of greenwashing concern exerting a positive influence on purchase intention contrasts with the existing literature (Goh & Balaji, 2016; L. Zhang et al., 2020), providing valuable insights and addressing our initial research question. Specifically, we find that external factors such as greenwashing concerns positively affect the intention to purchase sustainable clothing. Without a doubt greenwashing may influence consumer behavior, both in terms of word-of-mouth practice and purchasing again. (H. Zhang et al., 2022)

Among social values, we observe that altruistic and biospheric values play a role in the purchasing of sustainable clothes, in line with previous research findings (Schwartz, 1992; Stern et al., 1995; Straughan & Roberts, 1999). There is limited literature exploring the impact of social values on sustainable clothing consumption, especially regarding sustainable clothing consumption after surviving an epidemic crisis. Hence our study sheds light on the significant relationship between altruistic and biospheric values and the intention to purchase sustainable clothes in a post-COVID-19 world.

Attitudes towards the intention of purchasing sustainable clothing emerge as crucial in this relationship. In a post-COVID-19 context, this goes in line with previous findings (Iran et al., 2022). Additionally, we find that environmental concerns and perceived environmental knowledge significantly influence attitude formation towards intention (Jaiswal & Kant, 2018; Kumar & Smith, 2018; Rausch & Kopplin, 2021). While both environmental concerns and perceived environmental knowledge align with existing literature in showing a significant relationship with purchase intention, they also exhibit a mediation effect on attitude formation. Thus, our study introduces a novel approach to understanding the attitude formation process concerning the intention to purchase sustainable clothes. Although there is a scarcity in approaching these particular predictors, concerning this study's discoveries, consumers perceived the environment differently after the well-known disruptions like lockdowns and social distancing, especially when choosing to purchase sustainable clothes.

This study provides insightful recommendations for shaping consumers' decisions on purchasing sustainable clothes. The findings of this study serve as a foundation for implementing various policies benefiting consumers, producers, and stakeholders, including governmental bodies. One approach to promoting the intention to purchase sustainable clothes involves utilizing nudges or informational campaigns focusing on dimensions that exhibit an effect size exceeding the 0.02 threshold.

Practitioners could consider shifting attitudes toward purchasing sustainable clothing consumption through different social media campaigns that reflect the impact sustainable buying decisions have globally on our daily lives, after surviving the pandemic. This particular example might also combat the greenwashing phenomenon and demasking

deceptive marketing practices like claiming to have an environmentally friendly approach but failing to demonstrate that. Perceived environmental concern and environmental knowledge are two dimensions where the effect size points out the need for practical interventions promoting to post-COVID-19-era consumers the benefits of sustainable clothing consumption in this new context. The same goes for the social value orientations, namely altruistic and biospheric values. Their effect sizes indicate an opportunity for stakeholders to intervene with nudges and public policies that will encourage post-COVID-19 consumers to consider the well-being of others and the intrinsic ecosystem value when choosing to adhere to the fast-fashion or sustainable clothing category.

The current study holds implications for understanding the purchase intention of sustainable clothing consumption in the post-COVID-19 pandemic era. As the world emerges from the pandemic, there is a growing recognition of the importance of sustainability and environmental responsibility in various aspects of life, including consumer behavior. The findings of our study provide valuable insights into the factors influencing consumers' intention to purchase sustainable clothing, which can inform strategies for promoting sustainable consumption practices in the post-pandemic world. However, to attain sustainability, policymakers and stakeholders should consider the following strategies proposed in the green literature, that is enacting proactive planning, fostering social development, diminishing societal inequalities, promoting inter-organizational cooperation, providing positive case studies, and mitigating systemic risks via eco-innovation, digital transformation, and smart technologies (Khan et al., 2023; Koval et al., 2023). Nonetheless, it is important to understand that life after the COVID-19 health crisis is valued differently in the eyes of consumers, thus it is important to highlight the benefits that come when deciding to purchase sustainable clothing consumption.

5. Conclussion

The rise of fast fashion has entrenched the notion of 'disposable fashion', fueling a culture of overconsumption and hastening the depletion of natural resources, exacerbating climate change (Armstrong et al., 2016). The conclusion of the COVID-19 emergency in Romania and the onset of conflict in neighboring regions have highlighted the fragility of global industries and supply chains. Despite a slight recovery in world trade, the textile sector faced declines, with Romania experiencing fluctuations in textile imports and a surge in clothing purchases per capita (World Trade, 2024).

While the COVID-19 pandemic briefly disrupted the fast fashion cycle, research on sustainable clothing consumption in post-pandemic Romania remains scarce. Sustainable consumption practices, characterized by buying less, prioritizing quality over quantity, and embracing second-hand options, hold promise in mitigating overconsumption. However, existing literature primarily addresses pre or post-COVID-19 drivers of sustainable clothing consumption, overlooking the post-pandemic landscape.

Framed within the Theory of Planned Behavior (TPB), our study endeavors to fill this gap by exploring predictors of sustainable clothing consumption in post-pandemic Romania. By examining subjective norms, greenwashing concerns, sustainable attitudes, perceived environmental knowledge, environmental concern, and social value orientations, we aim to understand consumer intentions in this evolving context. Through robust methodology and a sizable sample, our research seeks to unravel the complexities of sustainable clothing consumption behavior.

Our findings underscore the pivotal role of attitudes in driving the intention to purchase sustainable clothes, with perceived environmental knowledge and environmental concern acting as crucial mediators. Furthermore, altruistic and biospheric value orientation emerge as significant predictors, emphasizing the importance of social and environmental responsibility in shaping consumer behavior. While the influence of subjective norms and egoistic values warrants further investigation, social value orientations, particularly altruistic and biospheric values, wield considerable influence over purchase intentions.

The implications of our study extend beyond theoretical insights to practical interventions aimed at promoting sustainable clothing consumption. By elucidating the drivers of consumer behavior in a post-pandemic Romania, policymakers, businesses, and other stakeholders can devise targeted strategies to foster sustainable consumption practices. From nudges and informational campaigns to policy initiatives promoting eco-friendly alternatives, our findings offer actionable pathways toward a more sustainable future.

Despite the rigor of our study, several limitations should be acknowledged. Firstly, our focus on post-pandemic Romania may limit the generalizability of our findings to other contexts. Additionally, the reliance on self-reported data introduces the possibility of response bias. Furthermore, the cross-sectional nature of our study precludes causal inferences, necessitating longitudinal research to ascertain the temporal relationships between variables. Moreover, the study has been conducted from November to December, a time frame that is subject to different biases. It is known that during these two months consumers are more eager to shop since several cultural aspects could influence them in this process. There are the most awaited Black Friday campaigns, when people tend to buy more, thanks to the great discounts sellers are offering. Also, we cannot disregard the holiday season in December, for which consumers start preparing early in the month. Thus, we are considering the data collection time frame to be a limitation for this study.

Future research should employ more practical sampling techniques and account for cultural differences in environmental concerns and value orientations. Despite these limitations, this study provides valuable insights into behavioral approaches for promoting sustainable clothing consumption, laying the groundwork for further exploration of sustainable consumer behaviors.

In conclusion, our study contributes to the discourse on sustainable consumption by addressing critical research gaps and offering actionable insights for policymakers and businesses. By staying true to our core ideas, we provide a nuanced understanding of consumer behavior in post-pandemic Romania, guiding efforts toward a more sustainable and resilient future.

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