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Exploring the Consumer Acceptance of Nano Clothing Using a PLS-SEM Analysis

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Abstract: We use an extended framework of the technology acceptance model (TAM) to identify the most significant drivers behind the intention to buy clothes produced with nano fabrics (nano clothing). Based on survey data, we estimate an integrated model that explains this intention as being driven by attitudes, perceived usefulness, and perceived ease of use. The influences of social innovativeness, relative advantage, compatibility, and ecologic concern on perceived usefulness are tested using perceived ease of use as a mediator. We employ a partial least squares path model in WarpPLS 7.0., a predictive technique that informs policies. The results show positive effects for all the studied relationships, with effect sizes underscoring perceived usefulness, attitude, and compatibility as the most suitable targets for practical interventions. Our study expands the TAM framework into the field of nano fashion consumption, shedding light on the potential drivers of the adoption process. Explorations of the topic hold the potential to make a substantial contribution to the promotion of sustainable fashion practices.

Keywords: nanotechnology; technology acceptance model; fashion industry; perceived usefulness; innovativeness; PLS-SEM

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1. Introduction

The textile and apparel industry is one of the most polluting industries in the world [1–3], accounting for about 20% of worldwide water pollution and 10% of global carbon emissions while experiencing extremely low recycling rates [4]. The waste of resources and energy, high carbon emissions, land, air, and ocean pollution [3], biodiversity defeat, and global warming [5] are the most common negative issues highlighted in the various debates related to this industry [6]. Consequently, numerous high-level conservations are taking place regarding the implementation of green, circular, and bio-economy principles in this sector [7–9]. These discussions aim to address the issue of resource depletion caused by excessive consumption, respectively, to mitigate the social and environmental risks associated with clothing supply chains [10,11]. The emergence of alternatives to conventional manufacturing materials and methods [12] is one such significant advancement, with options including eco-friendly materials, less polluting processes, and clothing designed with nanotechnology [13]. Nanotechnology entails enhancing the properties and functionalities of a product. Namely, embedding nanoparticles in threads results in fabrics with improved properties, without influencing the weight or thickness of the final apparel article [14]. This approach offers advantages such as cost-effectiveness, comfort, wearability, energy conversion efficiency, and eco-sustainability [15]. Although nanotechnology has been present in the textile industry for several decades (e.g., nanofibers, nanocomposite fibers, and nano-finishing), its popularity has surged in recent times [16]. This resurgence has been driven, in part, by contextual economic triggers (e.g., energy crisis and post-pandemic challenges [17]), which have refocused producers' attention on the creation of environmentally friendly and sustainable clothing [18]. The integration of new technologies into clothing production and distribution is not an entirely new concept, with examples such as smart-in-store technology, augmented reality, virtual personal assistants, and artificial intelligence [19]. Certain market segments, like sports clothing, have witnessed a revolution through the incorporation of nanotechnologies (e.g., waterproof, antibacterial, UV protection, and self-cleaning, etc.), even if there is little evidence on their potential negative effects on health, safety risks, and threats to the environment [20]. Hence, it not surprising that consumer behavior exhibits varying degrees of resistance in relation to nano clothing [21]. First, the reaction is linked to one's degree of innovation resistance. Namely, there is evidence that consumers with more innovative tendencies will have a higher propensity to use nano-clothing [22]. Second, consumer resistance to nanotechnologies illustrates some of the consumers' confusion related to how they perceive the sustainability of their own consumption decisions and clothing-related habits [23], respectively, how they act, or fail to do so, upon their environmental concerns [24]. Further, it is reasonable to assume that, next to food and energy decisions, current economic pressures may also influence consumer patterns in relation to clothing [25,26]. This is particularly relevant, since clothing decisions are one of the most salient areas of action for promoting sustainable consumption behavior [27,28].

Our study aims to identify the drivers behind consumers' willingness to adopt nano clothing, enriching the sustainable fashion consumption line of research [29], and contributes to the extant literature in the following ways. First, we propose an extended framework of the technology acceptance model (TAM) by accounting for relative advantage (RA), compatibility (COMP), social innovativeness (SI), and ecological concerns (ECO) as antecedents of perceived usefulness (PU) and perceived ease of use (PEOU). Further, PU and PEOU influence attitudes towards nano clothing (ATT), next to knowledge (KNOW), and all of them feed the intention to buy nano clothing (INT). Second, we test the model in the underexamined consumer market of Romania, a market with a high potential for sustainable growth if it receives the appropriate support from policy makers and the business environment. Last, we employ a partial least squares path analysis to analyze the data. This approach not only helps to identify potential non-linear relationships within the model, when they exist, but also offers more precise and refined suggestions for practical interventions. It does so by taking into consideration a hierarchy of the determinants based on their effect size, rather than solely relying on statistical significance.

2. Literature Review

2.1. The Technology Acceptance Model (TAM)

The TAM provides an integrated perspective on consumer behavior in decision contexts where technology plays an important role, either in defining the product/service or the setting the context where it is used [30]. Similar to the theory of reasoned action [31] and the theory of planned behavior [32], the TAM considers that consumers' actual behavior is driven by intentions, and that intentions are mainly determined by attitudes. However, what sets the TAM apart is its emphasis on the technological aspect, which is elucidated by two key factors: the extent one perceives the usage of a specific system as being effortless (PEOU), and the degree to which the usage of that system will enhance a specific task performance (PU).

TAM frameworks have been used extensively to explain and predict intentions toward the implementation of technology in the textile and apparel industry: artificial intelligence in fashion [19], the application of sustainability labels on garments [33], the measurement of augmented reality perception toward fashion products online shopping [34], the performance of virtual try-on technology for online clothing purchase [35], and consumers' acceptance of intelligent virtual closets [36] and self-service technologies in fashion retail stores [37]. Given the well-established association between technology and the fashion industry, as evidenced in numerous studies [38–41], it is entirely legitimate to employ the TAM to explore nanotechnology acceptance in the clothing industry. It is worth noting that nano clothing is often viewed as a product with greater technological complexity [42], further justifying the application of the TAM in this context.

The attitude toward nanotechnologies usage (ATT) in apparel depends on the conflict that exists between conventional manufacturing methods and intelligent fabric design techniques [43–45]. If consumers elicit emotional needs such as impulsive buying [46,47], they tend to fulfill them through fast fashion consumption. Therefore, the durable alternative provided by clothes realized with nanomaterials may not be favorably perceived [13], whether in terms of price or as a diversity-enhancing addition to one's wardrobe. Consequently, we hypothesized that:

H$_1$. *Attitude toward nano clothing positively influences the intention to adopt nano clothing.*

Perceived ease of use (PEOU) accounts for the degree of difficulty required by the use of a specific technology [30], while perceived usefulness (PU) captures the expected improvements and benefits arising from this usage [48]. Previous research has shown that a positive attitude toward PEOU results in higher levels of PU [35,49,50]. Consumer attitudes toward nanotechnology usage in the clothing industry reflects the favorable or unfavorable evaluation of nano clothing, an evaluation that arises through consumers' contact, direct or indirect, with the innovation. When PEOU and PU are favorably perceived, the attitude goes in the same direction, leading to a supportive behavioral intention [51]. This positive influence of PEOU and PU on attitudes has also been observed in the application of smart technologies within the apparel industry [19,52,53].

Meanwhile, intention (INT) is an essential driver of the adoption of a specific innovative technology [19,33]. Multiple studies have shown the effective influence of PEOU and PU on behavioral intention through attitude [33,54].

Thus, we assumed that:

H$_2$. *Perceived ease of use of nano clothing positively influences the consumers perceived usefulness of nano clothing.*

H$_3$. *Perceived ease of use of nano clothing positively influences the attitude toward nano clothing.*

H$_4$. *Perceived usefulness of nano clothing positively influences the attitude toward nano clothing.*

2.2. The Extended TAM

Several hypotheses were developed to improve the explanatory power of the TAM by pinpointing the antecedents of the key factors of the core model: ATT, PU, and PEOU.

Recognizing that attitudes play a pivotal role in shaping behaviors, it is worth considering to what extent they are congruent with a very objective antecedent: knowledge about the topic. Increasing technological knowledge may be challenging, but it has been proven useful for the case of enhancing the adoption intention of electric vehicles [55] and e-wallet adoption on mobile phones [56,57]. Thus, we propose that knowledge about nanotechnology use in the clothing industry should be included in our model as a determinant of attitude [58,59].

H$_5$. *Knowledge about nanotechnologies positively influences the attitude toward nano clothing.*

Further, we include social innovativeness (SI), described as an innate propensity to purchase novel products more frequently and quicker than other consumers [60,61]. SI is driven by factors like seeking novelty experiences or the need for uniqueness, and it has a positive influence on PU and PEOU [62–64]. Thus, we inferred that:

H$_{6a}$. *Social innovativeness positively influences the perceived usefulness of nano clothing.*

H$_{6b}$. *Social innovativeness positively influences the perceived ease of use of nano clothing.*

Perceiving additional benefits of a novel technology compared to existing alternatives plays an essential role in its survival on the market [65,66]. When it comes to the advantages of nano clothing, its benefits include an enhanced durability, permeability [67], and more effective antimicrobial properties [68]. Such a perceived relative advantage of nano clothes over conventionally manufactured garments will lead to an improved PU [69–71]. Likewise, a heightened awareness of this comparative advantage will intensify the level of interest, positively affecting the PEOU [69].

Therefore, we proposed that:

H_{7a}. *Relative advantage positively influences the perceived usefulness of nano clothing.*

H_{7b}. *Relative advantage positively influences the perceived ease of use of nano clothing.*

Moving from practical benefits to biospheric values, we conceptualize ecologic concern (ECO) as a precursor to PU and PEOU. ECO encompasses a range of attributes linked to consumer consciousness toward the environment and the impact of their actions on it [72]. A high level of awareness about environmental advantages will lead to higher levels of PU and PEOU when it comes to nano clothing.

Therefore, we inferred that:

H_{8a}. *Ecologic concern positively influences the perceived usefulness of nano clothing.*

H_{8b}. *Ecologic concern positively influences the perceived ease of use of nano clothing.*

Compatibility (COMP) refers to the extent to which a novel technology is consistent with past experiences, current values, and necessities [65]. When it comes to compatibility with new technologies, we focus on the cognitive dimension of this construct [73]. The PEOU of nano clothing builds upon the mental effort required by the usage of that technology. The higher the compatibility with nano products and the greater the number of prior experiences with these articles, the less effort is needed. Concerning the influence of compatibility on PU, the extent of involvement and interest in that technology will lead to an effortless process of recognizing its benefits (like in automatic thinking with things that we are familiar enough with). Previous empirical evidence has substantiated the influence of compatibility on the core TAM constructs [74,75].

Thus, we assessed that:

H_{9a}. *Compatibility positively influences the perceived usefulness of nano clothing.*

H_{9b}. *Compatibility positively influences the perceived ease of use of nano clothing.*

Finally, we propose a series of mediation hypotheses, where PEOU plays a mediator role between the chosen set of antecedents (SI, RA, ECO, and COMP) and PU. Indeed, what we postulate is that the perceived utility of nano-clothes is contingent on the level of perceived effort associated with their usage. To that extent, the four proposed relationships illustrate both the importance of objectively assessing effort (e.g., through the quantification of relative advantage and compatibility) and a subjective evaluation given one's intrinsic values related to social innovation and ecological concern. While the literature does not provide a consensus on the full-mediation assumption of the TAM variables [76], thus inviting more empirical work to clarify the issue, we found positive evidence in similar research questions for e-purchase intentions [77], user technology acceptance [78], and e-recruitment adoption [79].

H_{10a}. *Perceived ease of use mediates the relationship between social innovativeness and the perceived usefulness of nano clothing.*

H_{10b}. *Perceived ease of use mediates the relationship between relative advantage and the perceived usefulness of nano clothing.*

H_{10c}. *Perceived ease of use mediates the relationship between ecologic concern and the perceived usefulness of nano clothing.*

H_{10d}. *Perceived ease of use mediates the relationship between compatibility and the perceived usefulness of nano clothing.*

The conceptual model that depicts how the variables affect each other, as stated in the prior hypotheses, is presented in Figure 1.

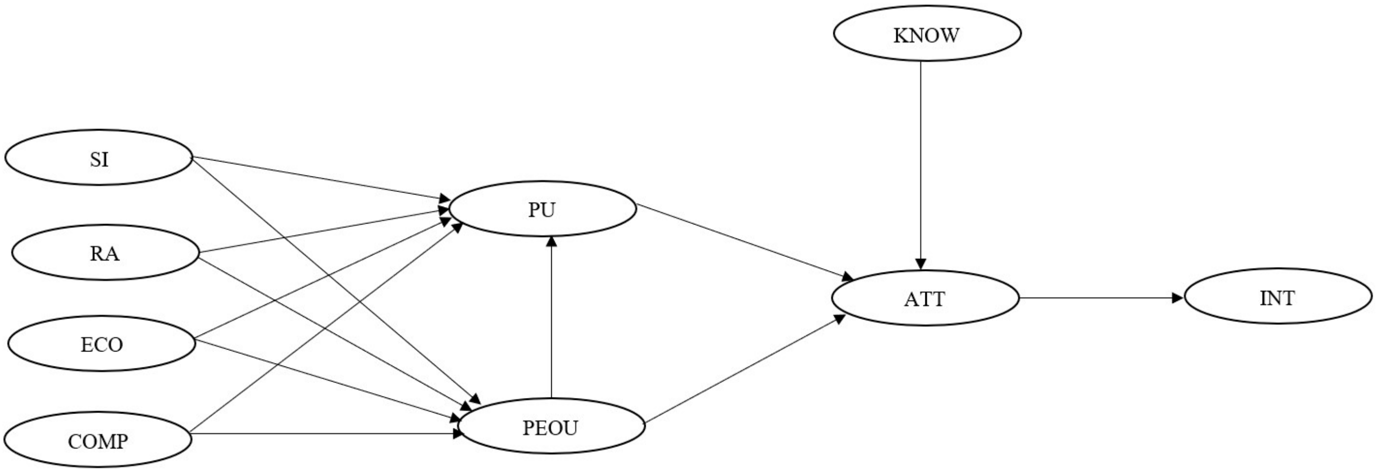

Figure 1. The conceptual model.

3. Materials and Methods

3.1. Data

The data were collected in Romania in October–December 2022 using an online self-administrated questionnaire. We used a combination between snowball [80] and convenience [81] sampling, as the survey was distributed on Facebook and WhatsApp, and the participants were asked to further distribute it to their networks. The respondents provided consent to participate in the study; they were informed that the collected data were used only for research purposes and that anonymity was warranted. The minimum sample size recommended by the WarpPLS 7.0 software [82] at a significance level of 0.050 and a power level of 0.990 is 510 using the inverse square root method [83], and 488 using the gamma-exponential method [83]. Our final sample comprises 545 responses.

3.2. Measurement

The conceptual model involves eight predictors of the INT, of which the PEOU of clothes designed with nano fabrics is modelled as mediator. All items were measured on a 7-point Likert scale.

To measure the ATT toward the adoption of nano clothes and the corresponding behavioral intention, we followed the approach proposed by Fishbein and Ajzen [84]. Existing research has tested the reliability of this scale [85,86]. PU and PEOU were quantified using Davis's scale [30], already validated and used extensively in prior research [87,88]. SI was measured using Roehrich's social innovativeness scale [61], while RA and COMP were measured using an adaptation of the scale proposed by [89]. ECO was measured using an adaptation of a shortened version of the ecological attitudes and knowledge [90], while KNOW was quantified by combining the items of two existing scales [91,92]. These last two instruments have been validated in previous research [93,94]. More details regarding the latent constructs are available in Appendix A.

3.3. Method

To assess the relationships assumed in our research model, we employed a partial least square–path modelling (PLS-PM) method conducted in the WarpPLS 7.0 software. The PLS-PM procedure seeks to maximize the variance of the behavioral intention to adopt nano clothing using an expanded version of the TAM framework, as stated in Figure 1. The estimation procedure involves two stages: first, a measurement model assesses the relationship between the latent variables and their corresponding manifest variables, while the second stage involves a structural model that explores the structural associations between latent variables. PLS modelling is usually preferred to covariance-based structural equation modelling for several reasons, such as its ability to work well on relatively small sample sizes [95,96] or its non-parametric characteristic that does not impose a specific data distribution [97]. However, in this paper, our choice is driven, besides the non-normal distribution of our variables, by the fact that, as a predictive procedure, it allows to inform policy [98].

4. Results

The final sample consists of 545 participants (74.13% females) with a mean age of 26.39 years (median age = 21.00, sd = 10.82). Most respondents (30.28%) reported an income level lower than RON 1000, while 18.16% of participants stated an income value higher than RON 5000. The sample is well balanced in terms of education, with 43.67% of the participants having tertiary education. Table 1 provides the sample description.

Table 1. Descriptive statistics of the sample.

		Study Participants		**Total**
		Gender		**N = 545 (100%)**
		Male	**Female**	
		141 (25.87%)	**404 (74.13%)**	
Income	Under RON 1000 [Under EUR 200]	43 (7.89%)	122 (22.39%)	165 (30.28%)
	RON 1000–1999 [EUR 200–EUR 399]	36 (6.61%)	69 (12.66%)	105 (19.27%)
	RON 2000–2999 [EUR 400–EUR 599]	17 (3.12%)	58 (10.64%)	75 (13.76%)
	RON 3000–3999 [EUR 600–EUR 799]	12 (2.20%)	46 (8.44%)	58 (10.64%)
	RON 4000–4999 [EUR 800–EUR 999]	7 (1.28%)	36 (6.61%)	43 (7.89%)
	Above RON 5000 [Above EUR 1000]	26 (4.77%)	73 (13.39%)	99 (18.16%)
Education	Middle school	2 (0.37%)	8 (1.47%)	10 (1.84%)
	Secondary education	93 (17.06%)	204 (37.43%)	297 (54.49%)
	Tertiary education	46 (8.44%)	192 (35.23%)	238 (3.67%)

4.1. The Outer Model

The reliability of the measurement is detailed in Table 2. The composite reliability values range between a minimum of 0.902, in the case of PEOU, and a maximum of 0.947 for KNOW. All values are higher than the 0.70 recommended threshold [99,100]. The Cronbach Alpha values range between 0.862 and 0.925, higher than the recommended 0.70 [101,102]. As shown in Table 2, the values of the average variance extracted indicator are higher than the recommended threshold of 0.50 [103] for all latent dimensions. The reliability of the measurement model is confirmed.

After eliminating four measurement items from ATT, two items involved in the INT measurement, one item from ECO and COMP, and four items from KNOW for not relating strongly enough with their corresponding latent constructs, the remaining loadings are above the theoretical threshold of 0.7, ranging between 0.714 and 0.927. Details about the combined loadings and cross-loadings of the manifested variables included in the reliability of the measurement model are provided in Appendix B. All off-diagonal correlations between the latent constructs are below 0.8 [104], as presented in Table 3, thus confirming the discriminant validity of the measurement.

Table 2. The reliability of the measurement model.

Variable	Composite Reliability	Cronbach's Alpha	Average Variance Extracted (AVE)
INT	0.940	0.925	0.693
ATT	0.932	0.911	0.695
PEOU	0.902	0.835	0.756
PU	0.923	0.889	0.750
SI	0.934	0.893	0.825
RA	0.907	0.862	0.709
ECO	0.913	0.881	0.677
COMP	0.923	0.889	0.751
KNOW	0.947	0.925	0.816

Table 3. Correlations among latent constructs with square roots of average variances extracted (AVEs).

Variable	ATT	INT	ECO	RA	SI	PU	PEOU	COMP	KNOW
ATT	0.834	0.684	0.714	0.696	0.286	0.641	0.544	0.686	0.664
INT	0.684	0.832	0.631	0.590	0.365	0.745	0.609	0.663	0.516
ECO	0.714	0.631	0.823	0.691	0.235	0.544	0.590	0.587	0.660
RA	0.696	0.590	0.691	0.842	0.305	0.626	0.501	0.674	0.587
SI	0.286	0.365	0.235	0.305	0.908	0.474	0.235	0.386	0.216
PU	0.641	0.745	0.544	0.626	0.474	0.866	0.594	0.736	0.492
PEOU	0.544	0.609	0.490	0.501	0.235	0.594	0.869	0.524	0.393
COMP	0.686	0.663	0.587	0.674	0.386	0.736	0.524	0.867	0.485
KNOW	0.664	0.516	0.660	0.587	0.216	0.492	0.393	0.485	0.903

4.2. The Inner Model

Table 4 summarizes the estimated coefficients of the structural model. Concerning the intention to adopt clothes manufactured with nanotechnologies, the amount of variance (R2) explained by the model is 47.3%, with an adjusted R2 of 47.2%. The model also explains 59.7% of the variation in attitudes (adjusted R2 = 59.5%). A very good explanatory power was found in the case of perceived usefulness, with an R2 of 66.4% (adjusted R2 = 66.1%). Regarding the perceived ease of use dimension, the amount of variance explained by the model is 34.1% (adjusted R2 = 33.6%). No endogeneity, statistical suppression, or Simpson's paradox were found. The average block VIF (AVIF) is 2.576, below the ideal recommended threshold of 3.3, and the Tenehaus goodness-of-fit index is 0.620, which is considered as large.

4.2.1. The TAM Dimensions

ATTs are positively related to the intention to adopt innovative clothes ($\beta = 0.688$, p-value < 0.001), confirming H_1. Regarding the determinants of ATT, KNOW ranks first with the highest effect size (0.289), followed by PU (0.213). The influences of PU ($\beta = 0.328$, p-value < 0.001), PEOU ($\beta = 0.176$, p-value < 0.001), and KNOW ($\beta = 0.433$, p-value < 0.001) on ATT are positive in all cases, which confirms H_3, H_4, H_5, and H_6.

Effect sizes above 0.02 are suitable for providing practical interventions and informing policies [105]. Table 5 summarizes the effect sizes of the direct, indirect, and total effects.

Table 4. Path coefficients of the structural model.

Estimated Coef.	Direct Effects				Indirect Effects			Total Effects			
Model	**ATT**	**INT**	**PU**	**PEOU**	**ATT**	**INT**	**PU**	**ATT**	**INT**	**PU**	**PEOU**
ATT	-	0.688 *** (<0.001)	-	-	-	-	-	-	0.688 *** (<0.001)	-	-
PU	0.328 *** (<0.001)	-	-	-	-	0.226 *** (<0.001)	-	0.328 *** (<0.001)	0.226 *** (<0.001)	-	-
PEOU	0.176 *** (<0.001)	-	0.241 *** (<0.001)	-	0.079 ** (0.004)	0.121 *** (<0.001)	-	0.255 *** (<0.001)	0.176 *** (<0.001)	0.241 *** (<0.001)	-
SI	-	-	0.219 *** (<0.001)	0.029 (0.252)	0.077 * (0.035)	-	0.007 (0.410)	0.079 * (0.031)	0.054 (0.059)	0.226 *** (<0.001)	0.029 (0.252)
RA	-	-	0.143 *** (<0.001)	0.168 *** (<0.001)	0.076 * (0.036)	-	0.040 (0.090)	0.090 * (0.017)	0.062 * (0.038)	0.183 *** (<0.001)	0.168 *** (<0.001)
ECO	-	-	0.049 (0.125)	0.200 *** (<0.001)	0.051 (0.115)	-	0.048 * (0.055)	0.067 * (0.058)	0.046 (0.093)	0.097 * (0.011)	0.200 *** (<0.001)
COM	-	-	0.402 *** (<0.001)	0.287 *** (<0.001)	0.182 *** (<0.001)	-	0.069 * (0.011)	0.205 *** (<0.001)	0.141 *** (<0.001)	0.471 *** (<0.001)	0.287 *** (<0.001)
KNOW	0.433 *** (<0.001)	-	-	-	-	0.298 *** (<0.001)	-	0.433 *** (<0.001)	0.298 *** (<0.001)	-	-
R2/Adjusted R2	59.7%/ 59.5%	47.3%/ 47.2%	66.4%/ 66.1%	34.1%/ 33.6%	-			-			
Tenehaus GoF	0.620 (large)										

*** p-value < 0.001; ** p-value < 0.01; and * p-value < 0.05.

Table 5. Effect sizes for direct, indirect, and total effects.

Estimated Coef.	Direct Effects				Indirect Effects			Total Effects			
Model	**ATT**	**INT**	**PU**	**PEOU**	**ATT**	**INT**	**PU**	**ATT**	**INT**	**PU**	**PEOU**
ATT	-	0.473	-	-	-	-	-	-	0.473	-	-
PU	0.213	-	-	-	-	0.168	-	0.213	0.168	-	-
PEOU	0.096	-	0.144	-	0.043	0.074	-	0.139	0.107	0.144	-
SI	-	-	0.106	0.007	0.022	-	0.003	0.023	0.020	0.109	0.007
RA	-	-	0.091	0.085	0.053	-	0.026	0.062	0.036	0.116	0.085
ECO	-	-	0.027	0.098	0.037	-	0.027	0.048	0.029	0.054	0.098
COM	-	-	0.297	0.151	0.125	-	0.051	0.141	0.094	0.348	0.151
KNOW	0.289	-	-	-	-	0.154	-	0.289	0.154	-	-

4.2.2. Perceived Ease of Use and Perceived Usefulness Antecedents

Concerning the antecedents of PU, the results show that COMP exhibits the highest effect size (0.297), along with a positive influence (β = 0.402, p-value < 0.001). Thus, H_{9a} is confirmed. We identified a positive effect of PEOU (β = 0.241, p-value < 0.001) on PU. Therefore, H_2 is confirmed. The positive influences of RA (β = 0.143, p-value < 0.001) and SI (β = 0.219, p-value < 0.001) on PU are also confirmed. Thus, H_{6a} and H_{7a} are confirmed. The ecological dimension is not statistically significant (β = 0.049, p-value = 0.125) in predicting PU. Thus, H_{8a} is rejected.

COMP stands as the most important predictor of PEOU (0.151). Along with ECO (β = 0.200, p-value < 0.001) and RA (β = 0.168, p-value < 0.001), COMP (β = 0.287, p-value < 0.001) has a positive effect on PEOU. SI is not statistically significant (β = 0.029, p-value = 0.252). We conclude that H_{6b} is rejected and H_{7b}, H_{8b}, and H_{9b} are confirmed.

4.2.3. The Mediation Effects

Table 4 shows that, with positive indirect effects, PEOU mediates the relationship between PU and COMP (β = 0.069, p = 0.011) and between PU and ECO (β = 0.048, p = 0.055). Therefore, H_{10c} and H_{10d} are confirmed. However, for SI (β = 0.007, p = 0.410) and RA (β = 0.040, p = 0.090), there is not enough evidence to conclude that their influence on PU is mediated by PEOU. Therefore, H_{10a} and H_{10b} are rejected.

5. Discussion

Nanotechnologies are at the forefront of innovation across various fields, stimulating both business opportunities and consumer practices aimed at increasing economic, social, and environmental benefits [106]. Addressing sustainability concerns within the textile and apparel industry, which has a history of pollution, this research strived to achieve a better understanding of the determinants of the behavioral intention to adopt nano clothing. The TAM serves as a conceptual framework that has been successfully used to explore innovativeness tendencies [62,64], relative advantage [70], compatibility [75,107], and ecological concerns [108] in different contexts. However, to our knowledge, there is no integrative model in the extant literature that studies the influence of all the antecedents on the TAM constructs simultaneously, while also ranking these predictors considering their effect sizes, as our research does.

Based on the extended TAM and a sample of 545 Romanian participants, we developed a model that explains 59.7% of the variance in the intention to adopt nano clothing. Moreover, the integrated model is able to explain 66.4% of the PU variations and 34.1% of the PEOU variations. Our findings confirm both the hypothesized positive effect of the TAM constructs on this intention, as well as the mediating role of PEOU in the relation between PU and its antecedents. In addition, our study aligns with earlier research that has confirmed the convergent validity of the innovativeness scale [109], and also its positive association with PEOU and PU [110]. The internal consistency of COMP and RA is similar with the numbers identified in prior research that has assessed construct validity via a factor analysis. Last, but not least, the effect sizes observed in our study range from moderate to large, making them suitable for guiding practical interventions.

5.1. Theoretical Implications

The extended TAM framework employed in this research offers a robust theoretical foundation for exploring research areas related to sustainable fashion consumption, especially in the context of technology-driven innovations like nano clothing. While TAM models have previously been employed to investigate the adoption of smart clothing, such as solar-powered clothing [111] and smart fashion products [111,112], our research, to the best of our knowledge, marks the first study dedicated to examining the factors influencing the adoption of nano clothing as an innovative technological advancement.

Our work confirmed the relations proposed by the original TAM model, finding support for hypotheses H_1–H_4. Among PU and PEOU, PU proves to be the strongest predictor of ATT, confirming results from other studies [111,113]. However, while less salient than effect size, PEOU is also a significant and positive predictor of attitude. This result aligns with the findings of [114]. Both PU and PEOU have further indirect effects on intention.

Moving into the extended TAM, we identified a significant influence of KNOW on ATT. This outcome underscores the importance of providing consumer information and education, echoed by various other studies on fashion sustainability [29,115,116], sustainable clothing [117,118], slow fashion [119], and, in general, a more conscious and minimalistic lifestyle [120]. The general message behind all these trends—less quantity and more quality—also illustrates a common rational choice intuition: that our level of familiarity with a topic, such as innovative procedures in clothing manufacturing processes, plays a pivotal role in our willingness to contemplate changing our related behaviors. Nevertheless, we recognize that behavior change does not occur automatically, as highlighted by numerous studies on behavioral economics [111] and business research: "the gap between consumers' attitudes and their behavior is a significant challenge in sustainability fashion marketing" [121]. Effective behavior change does require dedicated strategies and interventions, and further discussions about green nudges [122] and other types of behaviorally informed techniques are provided in the practical implications' subsection.

When examining the TAM antecedents, we found that SI influences PU but not PEOU, ECO influences PEOU but not PU, and RA and COMP positively influence both PU and PEOU. The results align with the extant literature from other countries (e.g., the US and Korea, [111,113]). The robustness of the findings when considering examinations conducted in both high- and middle-income countries (like Romania) signals the strength of the TAM as an explanatory framework, able to capture the global trends in consumption patterns. Nonetheless, our work further expands the existing theoretical framework by introducing RA as a predictor of both PU and PEOU. We argue that highlighting the added benefits of nano clothing compared to conventional manufacturing processes is a crucial factor in gaining consumer acceptance. This is similar to the cases illustrating the reluctance shown towards food nanotechnology [123,124]. Indeed, beyond a potential lack of rationality with respect to the use of nanotechnology in one area (e.g., clothing or food), experts have argued that increasing the level of trust in policy-makers, along with enhancing individual dimensions like consumers' autonomy and instrumentalism, are equally important [125].

Finally, we found that PEOU mediates the relationship between ECO and PU, respectively, and that between COMP and PU. These mechanisms can be attributed to the close connection between clothes and individuality, as well as to the values that define a person's lifestyle. Purchasing nano clothing can be seen as an appealing philosophy to signal a commitment to sustainable consumption (e.g., pro-environmental self-identity) [126], thereby making it easier for consumers to adopt for reasons related to reputation. For instance, this adoption could align, in some cases, with egoistic values in the context of voluntary simplicity [112] or other hedonistic needs in terms of perceived image [127].

5.2. Practical Implications

The confirmation of the original TAM model, bearing high effect sizes, reinforces basic recommendations for retailers and product developers in terms of better emphasizing the functionality of nano clothing (thus acting upon PU). What may not be immediately evident but was uncovered by our study is the importance of taking action to influence PEOU as well. In general, clothing is not associated with any significant barriers to use. However, when it comes to nano clothing, it can evoke different perceptions in people's minds, particularly the idea that it may not be as straightforward or easy to use compared to conventional clothing. Hence, producers should customize their communication efforts to highlight one of the key attributes of nano clothing: consumers can reap the advantages of garments crafted from highly advanced materials without needing to delve into the technical intricacies of how these such fabrics are produced.

The focus on enhancing knowledge about nano clothing is another promising avenue for practitioners. From a top-down perspective, an information campaign in this domain can be seen as a constructive policy measure to encourage innovation within the manufacturing sector. This approach would highly benefit Romanian textile manufacturers, especially considering that Romania is the second employer in the EU's textile and fashion sector, but it lags behind in terms of both added value and labor efficiency, as indicated by recent data [128]. Thus, there is an important gap to cover both in terms of effective innovation organizational practices [129] and on how these practices are communicated to the public. From a bottom-up approach, increased knowledge would also benefit consumers as they strive to embrace sustainable consumption habits, which can have a demonstrable impact on their own lives and the environment (e.g., slow fashion is positively linked to consumer's well-being, [68]). To this end, providing more information is just a first step that may be complemented by more effective nudging initiatives. These may include environmental priming, the utilization of green/nano labels [130], or the involvement of influencers as intermediary marketing channels to help reshape social norms [131] and increase fashion conscientiousness.

Further exploiting the fact that compatibility with consumers' needs and expectations is the predictor with the highest effect size for PU and PEOU, marketing strategies should prioritize the establishment of a strong link between consumers' core values and nano clothing attributes. This perspective partially contradicts the inclination of certain public campaigns to emphasize only humanitarian and altruistic ideals when promoting sustainable product choices. While these aspects are certainly laudable and undeniably significant, there is a risk that they may come across as overly abstract or lacking in meaning due to their frequent invocation without reference to practical aspects. Therefore, it is often a more effective strategy to concentrate on evidence-based outcomes, specifically on the concrete and tangible ways in which products or services impact consumers' lives. It is also noteworthy to reiterate the primary responsibility of the business environment to be socially responsible and lead consumers towards more sustainable experiences: "fashion retailers are currently at the heart of the transition to more sustainable business models" [131].

6. Conclusions

This research showed the positive effect of the TAM constructs (perceived usefulness and perceived ease of use and attitude) on the intention to adopt nano clothing. It underscores the important role played by a set of antecedent variables, such as knowledge, social innovativeness, relative advantage, compatibility, and ecologic concern, in influencing the primary determinants of the TAM. We found that, to promote nano clothing acquisition, more attention should be directed to the consumer's level of knowledge and awareness toward those fashionable alternatives, emphasizing their benefits and features compared to apparel made using conventional manufacturing processes. The central role of perceived usefulness in predicting behavior formation emphasizes its effectiveness in providing practical interventions.

Our research is not without limitations. First, we acknowledge the need for a representative sample instead of the convenience sample used here. Secondly, our model does not control for all the potential antecedents of the perceived usefulness and ease of use, such as perceived risks of using the technology, financial constraints, or social influences. Nonetheless, despite the need for further theoretical refinements required to extend the current framework, our research remains the first contribution of employing the TAM to understand nano clothing adoption and testing the model in an underexplored environment such as Romania.

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Data Availability Statement: Data are available on request.

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

Appendix A. The Measurement Items

Dimension	Item Abbreviation	Item
Intention [84]	INT NAN_1	I see the acquisition of clothing articles designed with nanotechnologies as a possibility.
	INT NAN_2	In the future, I intend to buy clothes created with nanomaterials instead of conventional ones.
	INT NAN_3	In the future, probably I will buy clothes created with nanomaterials.
	INT NAN_4	I might consider buying clothes created with nanomaterials if I will find them in the store.
	INT NAN_5	In the near future, I see myself using clothes made with nanomaterials.
	INT NAN_6	I choose to buy just clothes created with nanomaterials.
	INT NAN_7	I buy clothes created with nanomaterials instead of conventional clothes when the quality is outstanding.
	INT NAN_8	I buy clothes created with nanomaterials, even if they are more expensive than conventional clothes.
	INT NAN_9	When I buy clothing items, I ensure they are made with nanomaterials.
Attitude [84]	ATT NAN_1	I prefer comfortable and easy-care clothes.
	ATT NAN_2	I do not like the idea that one clothing item performs multiple functions.
	ATT NAN_3	I like the idea of clothing items created with nanomaterials.
	ATT NAN_4	I have a favorable attitude towards clothing items created with nanomaterials.
	ATT NAN_5	Clothes made with nanomaterials may be difficult to use.
	ATT NAN_6	Maintenance of clothes made with nanomaterials may require effort and skill.
	ATT NAN_7	I consider it advantageous to use clothes made with nanomaterials.
	ATT NAN_8	I like to try clothing products created with innovative technologies.
	ATT NAN_9	I am interested in clothing made with nanotechnologies.
	ATT NAN_{10}	Clothing items made with nanomaterials are only for rich people.
Perceived usefulness [30]	PU_1	Using clothes created with nanomaterials would enhance my life.
	PU_2	Using clothes made with nanomaterials would enable me greater control over my actions.
	PU_3	Using clothes made with nanomaterials presents more advantages than disadvantages.
	PU_4	Overall, I find it useful to wear clothing made with nanomaterials.
Perceived ease of use [30]	$PEOU_1$	Clothing made with nanomaterials is effortless to care for.
	$PEOU_2$	It is straightforward to learn how to preserve clothes made with nanomaterials.
	$PEOU_3$	It is straightforward to learn how to use clothing created with nanomaterials.
Social innovativeness [61]	SOC $INOV_1$	I am usually among the first to try new products.
	SOC $INOV_2$	I know more than others on latest new products.
	SOC $INOV_3$	I try new products before my friends and neighbors
Relative advantage [89]	RA_1	Clothing made with nanomaterials is more convenient, reliable, and useful than clothing made with conventional materials.
	RA_2	Clothing made with nanomaterials presents a good integration of a wide range of functions.
	RA_3	Clothing made with nanomaterials is fashionable.
	RA_4	The quality/price ratio is acceptable in clothing made with nanomaterials.

Dimension	Item Abbreviation	Item
Ecologic concern [90]	ECO_1	I would like the idea of buying clothing made with nanomaterials instead of conventional ones to protect the environment.
	ECO_2	By using clothing made with nanotechnologies, I will contribute to improving the local environment.
	ECO_3	It is clear how I could reduce the negative consequences of my behavior on the environment.
	ECO_4	I am concerned about the evolution of environmental issues.
	ECO_5	I am concerned that humanity will cause long-term damage to the environment.
	ECO_6	The use of clothing made with nanotechnologies is more convenient for the environment than the use of conventional clothing.
Compatibility [89]	$COMP_1$	Clothing made with nanomaterials fits my needs.
	$COMP_2$	Clothing made with nanomaterials fits my lifestyle.
	$COMP_3$	Clothing made with nanomaterials does not satisfy my preferences for clothing.
	$COMP_4$	Clothing made with nanomaterials fits with my habits of utilizing clothing.
	$COMP_5$	Clothing made with nanomaterials is a good complement to conventional clothing.
Knowledge [91,92]	KNW_1	I am familiar with the concept of nanotechnology.
	KNW_2	I am familiar with the idea of using nanomaterials in the manufacturing process of clothing.
	KNW_3	I am familiar with the application of innovative technologies in the clothing industry.
	KNW_4	Clothes made with nanomaterials can facilitate the inhalation of nanoparticles in the form of exhaust fumes.
	KNW_5	Clothes made with nanomaterials are special because the way they are realized is environmentally friendly.
	KNW_6	Clothes made with nanomaterials reduce the negative impact of the clothing industry on the environment.
	KNW_7	By using clothing made with nanomaterials, I want to reduce waste.
	KNW_8	By using clothing made with nanomaterials, I will significantly reduce the impact on the environment.

Appendix B. Combined Loadings and Cross-Loadings

	ATT NAN	INT NAN	ECO	RA	SOC INOV	PU	PEOU	COMP	KNW
ATT NAN_3	***0.898***	−0.058	−0.006	−0.020	−0.050	−0.043	0.044	0.031	0.045
ATT NAN_4	***0.883***	−0.166	−0.007	−0.073	0.000	−0.041	0.079	0.064	0.121
ATT NAN_5	***0.731***	−0.103	−0.014	0.151	−0.115	0.050	−0.028	−0.037	−0.121
ATT NAN_7	***0.862***	−0.054	−0.066	0.071	−0.080	0.154	−0.031	−0.053	0.141
ATT NAN_8	***0.773***	0.213	0.111	−0.130	0.146	−0.113	−0.036	0.010	−0.140
ATT NAN_9	***0.842***	0.185	−0.009	0.013	0.100	−0.008	−0.040	−0.023	−0.088
IA_1	−0.008	***0.861***	0.059	−0.039	−0.026	−0.263	0.115	−0.002	0.040
IA_2	−0.008	***0.869***	0.029	0.064	0.023	0.114	−0.059	0.063	−0.039

	ATT NAN	INT NAN	ECO	RA	SOC INOV	PU	PEOU	COMP	KNW
IA_3	0.059	***0.889***	0.053	−0.006	−0.060	−0.210	0.049	−0.028	−0.006
IA_4	0.046	***0.851***	−0.031	−0.027	−0.077	−0.343	0.072	0.014	0.075
IA_5	−0.013	***0.889***	0.009	−0.020	0.003	−0.020	−0.013	0.040	0.013
IA_7	−0.041	***0.725***	−0.103	−0.003	0.054	0.242	−0.076	−0.100	0.036
IA_8	−0.052	***0.714***	−0.040	0.036	0.111	0.625	−0.122	−0.005	−0.136
ECO_1	0.139	0.118	***0.832***	−0.041	−0.038	0.061	−0.083	0.136	0.029
ECO_2	−0.043	0.010	***0.858***	0.064	0.025	0.051	−0.063	0.074	0.241
ECO_4	−0.006	−0.119	***0.799***	−0.091	0.023	−0.043	0.129	−0.175	−0.257
ECO_5	−0.064	−0.005	***0.787***	−0.191	0.005	−0.092	0.085	−0.126	−0.239
ECO_6	−0.028	−0.009	***0.836***	0.241	−0.013	0.015	−0.056	0.075	0.195
RA_1	−0.009	−0.037	0.132	***0.874***	−0.095	0.169	−0.025	−0.097	0.065
RA_2	0.080	0.030	0.083	***0.881***	−0.066	0.036	0.073	−0.051	0.069
RA_3	−0.026	−0.047	−0.118	***0.789***	0.067	−0.051	−0.050	0.069	−0.085
RA_4	−0.050	0.053	−0.117	***0.820***	0.107	−0.170	−0.004	0.092	−0.062
SOC $INOV_1$	−0.067	0.044	0.161	−0.088	***0.883***	−0.149	−0.030	0.149	−0.030
SOC $INOV_2$	0.041	−0.068	−0.091	0.067	***0.913***	0.061	0.050	−0.105	0.029
SOC $INOV_3$	0.023	0.025	−0.064	0.018	***0.927***	0.082	−0.021	−0.038	0.000
PU_1	−0.081	−0.007	0.007	0.060	−0.270	***0.887***	−0.073	−0.018	−0.075
PU_2	−0.149	−0.077	0.030	0.052	0.055	***0.828***	−0.067	−0.056	−0.055
PU_3	0.041	−0.033	−0.074	−0.009	−0.005	***0.878***	0.071	0.030	0.104
PU_4	0.183	0.115	0.039	−0.102	−0.020	***0.870***	0.066	0.042	0.024
$PEOU_1$	−0.052	−0.281	−0.108	0.147	0.032	0.468	***0.775***	−0.051	0.057
$PEOU_2$	0.061	0.075	0.034	−0.077	0.003	−0.131	***0.926***	−0.036	−0.024
$PEOU_3$	−0.018	0.165	0.058	−0.048	−0.031	−0.268	***0.899***	0.082	−0.058
$COMP_1$	−0.019	0.117	−0.016	0.141	0.007	−0.035	−0.044	***0.901***	−0.058
$COMP_2$	0.001	0.081	0.011	−0.012	0.069	−0.065	0.006	***0.889***	−0.038
$COMP_4$	−0.022	−0.117	0.034	−0.106	−0.012	−0.018	0.038	***0.882***	0.073
$COMP_5$	0.047	−0.094	−0.033	−0.028	−0.072	0.133	0.001	***0.790***	0.027
KNW_5	0.086	0.019	−0.034	−0.048	0.002	−0.016	−0.021	0.027	***0.897***
KNW_6	−0.046	0.001	0.043	0.013	0.000	0.073	−0.072	−0.100	***0.911***
KNW_7	−0.029	0.059	−0.014	0.031	0.001	−0.084	0.087	−0.030	***0.895***
KNW_8	−0.011	−0.078	0.004	0.004	−0.003	0.025	0.007	0.103	***0.911***

References

1. Roy Choudhury, A.K. Environmental Impacts of the Textile Industry and Its Assessment through Life Cycle Assessment. In *Roadmap to Sustainable Textiles and Clothing*; Muthu, S.S., Ed.; Textile Science and Clothing Technology; Springer: Singapore, 2014; pp. 1–39. ISBN 978-981-287-109-1.
2. Leal Filho, W.; Perry, P.; Heim, H.; Dinis, M.A.P.; Moda, H.; Ebhuoma, E.; Paço, A. An Overview of the Contribution of the Textiles Sector to Climate Change. *Front. Environ. Sci.* **2022**, *10*, 973102. [CrossRef]

3. Bailey, K.; Basu, A.; Sharma, S. The Environmental Impacts of Fast Fashion on Water Quality: A Systematic Review. *Water* **2022**, *14*, 1073. [CrossRef]
4. News European Parliament. The Impact of Textile Production and Waste on the Environment (Infographics) 2020. Available online: https://www.europarl.europa.eu/news/en/headlines/society/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographics (accessed on 30 August 2023).
5. Bunekar, N.; Tsung-yen, T.; Hwang, S.S. Environmental Hazards on Textile Waste. In *Nano-Engineered Materials for Textile Waste Remediation*; Mishra, A.K., Ed.; Environmental Footprints and Eco-Design of Products and Processes; Springer Nature: Singapore, 2023; pp. 153–161, ISBN 978-981-19797-7-4.
6. Abbate, S.; Centobelli, P.; Cerchione, R.; Nadeem, S.P.; Riccio, E. Sustainability Trends and Gaps in the Textile, Apparel and Fashion Industries. *Environ. Dev. Sustain.* **2023**. [CrossRef] [PubMed]
7. Islam, M.M.; Perry, P.; Gill, S. Mapping Environmentally Sustainable Practices in Textiles, Apparel and Fashion Industries: A Systematic Literature Review. *J. Fash. Mark. Manag. Int. J.* **2021**, *25*, 331–353. [CrossRef]
8. Jia, F.; Yin, S.; Chen, L.; Chen, X. The Circular Economy in the Textile and Apparel Industry: A Systematic Literature Review. *J. Clean. Prod.* **2020**, *259*, 120728. [CrossRef]
9. Saha, K.; Dey, P.K.; Papagiannaki, E. Implementing Circular Economy in the Textile and Clothing Industry. *Bus. Strat. Environ.* **2021**, *30*, 1497–1530. [CrossRef]
10. Freise, M.; Seuring, S. Social and Environmental Risk Management in Supply Chains: A Survey in the Clothing Industry. *Logist. Res.* **2015**, *8*, 2. [CrossRef]
11. Shen, B. Sustainable Fashion Supply Chain: Lessons from H&M. *Sustainability* **2014**, *6*, 6236–6249. [CrossRef]
12. Yang, Y.; Yang, X.; Xiao, Z.; Liu, Z. Digitalization and Environmental Performance: An Empirical Analysis of Chinese Textile and Apparel Industry. *J. Clean. Prod.* **2023**, *382*, 135338. [CrossRef]
13. Bhushan, B.; Priyam, A. Textile Waste: The Genesis, Environmental Impact and Remediation Using Nanomaterials. In *Nano-Engineered Materials for Textile Waste Remediation*; Mishra, A.K., Ed.; Environmental Footprints and Eco-Design of Products and Processes; Springer Nature: Singapore, 2023; pp. 15–34, ISBN 978-981-19797-7-4.
14. Ahmed, W.; Nourafkan, E. *Science and Applications of Nanoparticles*; Jenny Stanford Publishing: Singapore, 2022; ISBN 978-1-00-056957-5.
15. Shah, M.A.; Pirzada, B.M.; Price, G.; Shibiru, A.L.; Qurashi, A. Applications of Nanotechnology in Smart Textile Industry: A Critical Review. *J. Adv. Res.* **2022**, *38*, 55–75. [CrossRef]
16. Haque, M. Nano Fabrics in the 21st Century: A Review. *Asian J. Nanosci. Mater.* **2019**, *2*, 120–256.
17. Okur, N.; Saricam, C.; Iri, A.R.; Sari, I. Analyzing the Impact of Covid-19 on Sustainable Fashion Consumption with a Model Based on Consumer Value Perceptions. *J. Fash. Mark. Manag. Int. J.* **2023**, 1–25. [CrossRef]
18. De Ponte, C.; Liscio, M.C.; Sospiro, P. State of the Art on the Nexus between Sustainability, Fashion Industry and Sustainable Business Model. *Sustain. Chem. Pharm.* **2023**, *32*, 100968. [CrossRef]
19. Liang, Y.; Lee, S.-H.; Workman, J.E. Implementation of Artificial Intelligence in Fashion: Are Consumers Ready? *Cloth. Text. Res. J.* **2020**, *38*, 3–18. [CrossRef]
20. Harifi, T.; Montazer, M. Application of Nanotechnology in Sports Clothing and Flooring for Enhanced Sport Activities, Performance, Efficiency and Comfort: A Review. *J. Ind. Text.* **2017**, *46*, 1147–1169. [CrossRef]
21. Ju, N.; Lee, K.-H. Consumer Resistance to Innovation: Smart Clothing. *Fash. Text.* **2020**, *7*, 21. [CrossRef]
22. Kaounides, L.; Yu, H.; Harper, T. Nanotechnology Innovation and Applications in Textiles Industry: Current Markets and Future Growth Trends. *Mater. Technol.* **2007**, *22*, 209–237. [CrossRef]
23. Colasante, A.; D'Adamo, I. The Circular Economy and Bioeconomy in the Fashion Sector: Emergence of a "Sustainability Bias". *J. Clean. Prod.* **2021**, *329*, 129774. [CrossRef]
24. Glisovic, S.; Pesic, D.; Stojiljkovic, E.; Golubovic, T.; Krstic, D.; Prascevic, M.; Jankovic, Z. Emerging Technologies and Safety Concerns: A Condensed Review of Environmental Life Cycle Risks in the Nano-World. *Int. J. Environ. Sci. Technol.* **2017**, *14*, 2301–2320. [CrossRef]
25. Joyner Armstrong, C.M.; Connell, K.Y.H.; Lang, C.; Ruppert-Stroescu, M.; LeHew, M.L.A. Educating for Sustainable Fashion: Using Clothing Acquisition Abstinence to Explore Sustainable Consumption and Life Beyond Growth. *J. Consum. Policy* **2016**, *39*, 417–439. [CrossRef]
26. Vladimirova, K.; Henninger, C.E.; Joyner-Martinez, C.; Iran, S.; Diddi, S.; Durrani, M.; Iyer, K.; Jestratijevic, I.; McCormick, H.; Niinimäki, K.; et al. Fashion Consumption during COVID-19: Comparative Analysis of Changing Acquisition Practices across Nine Countries and Implications for Sustainability. *Clean. Responsible Consum.* **2022**, *5*, 100056. [CrossRef]
27. Geiger, S.M.; Fischer, D.; Schrader, U. Measuring What Matters in Sustainable Consumption: An Integrative Framework for the Selection of Relevant Behaviors: Measuring Sustainable Consumption. *Sustain. Dev.* **2018**, *26*, 18–33. [CrossRef]
28. Ianole-Călin, R.; Rădulescu, M.; Druică, E. Sustainable Consumption Behavior Among Romanian Students. In *Sustaining Our Environment for Better Future*; Omran, A., Schwarz-Herion, O., Eds.; Springer: Singapore, 2020; pp. 159–174, ISBN 9789811371578.
29. Brandão, A.; Costa, A.G.D. Extending the Theory of Planned Behaviour to Understand the Effects of Barriers towards Sustainable Fashion Consumption. *Eur. Bus. Rev.* **2021**, *33*, 742–774. [CrossRef]
30. Davis, F.D. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Q.* **1989**, *13*, 319. [CrossRef]

31. Fishbein, M.; Ajzen, I. *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*; Addison-Wesley: Reading, MA, USA, 1975.
32. Ajzen, I. The Theory of Planned Behavior. *Organ. Behav. Hum. Decis. Process.* **1991**, *50*, 179–211. [CrossRef]
33. Ma, Y.J.; Gam, H.J.; Banning, J. Perceived Ease of Use and Usefulness of Sustainability Labels on Apparel Products: Application of the Technology Acceptance Model. *Fash. Text.* **2017**, *4*, 3. [CrossRef]
34. Udiono, T. Maryani Perceptions of Using Augmented Reality Features on Online Shopping Fashion Platforms Based on Technology Acceptance Model. In Proceedings of the 2021 3rd International Conference on Cybernetics and Intelligent System (ICORIS), Makasar, Indonesia, 25–26 October 2021; pp. 1–5.
35. Kim, J.; Forsythe, S. Adoption of Virtual Try-on Technology for Online Apparel Shopping. *J. Interact. Mark.* **2008**, *22*, 45–59. [CrossRef]
36. Perry, A. Consumers' Acceptance of Smart Virtual Closets. *J. Retail. Consum. Serv.* **2016**, *33*, 171–177. [CrossRef]
37. Park, J.-S.; Ha, S.; Jeong, S.W. Consumer Acceptance of Self-Service Technologies in Fashion Retail Stores. *J. Fash. Mark. Manag. Int. J.* **2021**, *25*, 371–388. [CrossRef]
38. Ikram, M. Transition toward Green Economy: Technological Innovation's Role in the Fashion Industry. *Curr. Opin. Green Sustain. Chem.* **2022**, *37*, 100657. [CrossRef]
39. Siregar, Y.; Kent, A. Consumer Experience of Interactive Technology in Fashion Stores. *Int. J. Retail. Distrib. Manag.* **2019**, *47*, 1318–1335. [CrossRef]
40. Vanderploeg, A.; Lee, S.-E.; Mamp, M. The Application of 3D Printing Technology in the Fashion Industry. *Int. J. Fash. Des. Technol. Educ.* **2017**, *10*, 170–179. [CrossRef]
41. Xiao, Y.-Q.; Kan, C.-W. Review on Development and Application of 3D-Printing Technology in Textile and Fashion Design. *Coatings* **2022**, *12*, 267. [CrossRef]
42. Syduzzaman, M.D.; Patwary, S.U.; Farhana, K.; Ahmed, S. Smart Textiles and Nano-Technology: A General Overview. *J. Text. Sci. Eng.* **2015**, *05*, 1–7. [CrossRef]
43. Aus, R.; Moora, H.; Vihma, M.; Unt, R.; Kiisa, M.; Kapur, S. Designing for Circular Fashion: Integrating Upcycling into Conventional Garment Manufacturing Processes. *Fash. Text.* **2021**, *8*, 34. [CrossRef]
44. Bernardi, A.; Cantù, C.L.; Cedrola, E. Key Success Factors to Be Sustainable and Innovative in the Textile and Fashion Industry: Evidence from Two Italian Luxury Brands. *J. Glob. Fash. Mark.* **2022**, *13*, 116–133. [CrossRef]
45. Brown, S.; Vacca, F. Cultural Sustainability in Fashion: Reflections on Craft and Sustainable Development Models. *Sustain. Sci. Pract. Policy* **2022**, *18*, 590–600. [CrossRef]
46. Cook, S.C.; Yurchisin, J. Fast Fashion Environments: Consumer's Heaven or Retailer's Nightmare? *Int. J. Retail. Distrib. Manag.* **2017**, *45*, 143–157. [CrossRef]
47. Dwi Azizah, F.; Nur, A.N. Technology Acceptance Model in Supporting the Tendency to Use Applications and Impulsive Buying on Purchase Decisions. *Gold. Ratio Mapp. Idea Lit. Format* **2021**, *2*, 52–64. [CrossRef]
48. Al-Rahmi, W.M.; Yahaya, N.; Aldraiweesh, A.A.; Alamri, M.M.; Aljarboa, N.A.; Alturki, U.; Aljeraiwi, A.A. Integrating Technology Acceptance Model With Innovation Diffusion Theory: An Empirical Investigation on Students' Intention to Use E-Learning Systems. *IEEE Access* **2019**, *7*, 26797–26809. [CrossRef]
49. Pando-Garcia, J.; Periañez-Cañadillas, I.; Charterina, J. Business Simulation Games with and without Supervision: An Analysis Based on the TAM Model. *J. Bus. Res.* **2016**, *69*, 1731–1736. [CrossRef]
50. Wei, Z.; Lee, M.-Y.; Shen, H. What Drives Consumers in China to Buy Clothing Online? Application of the Technology Acceptance Model. *J. Text. Fibrous Mater.* **2018**, *1*, 251522111875679. [CrossRef]
51. Wang, Y.; Hira, C. The effect of fashion innovativeness on consumer's online apparel customization. *Int. J. Organ. Innov.* **2012**, *5*, 263–283.
52. Kim, H.-Y.; Lee, J.Y.; Mun, J.M.; Johnson, K.K.P. Consumer Adoption of Smart In-Store Technology: Assessing the Predictive Value of Attitude versus Beliefs in the Technology Acceptance Model. *Int. J. Fash. Des. Technol. Educ.* **2017**, *10*, 26–36. [CrossRef]
53. Kim, J.; Forsythe, S. Adoption of Sensory Enabling Technology for Online Apparel Shopping. *Eur. J. Mark.* **2009**, *43*, 1101–1120. [CrossRef]
54. Chang, Y.-H.; Lai, K.-K.; Yang, M.-C.; Hsu, Y.-T. The Influence of Patents on Purchase Intention Through the Technology Acceptance Model. *Int. J. Innov. Technol. Manag.* **2020**, *17*, 2050024. [CrossRef]
55. Huang, X.; Lin, Y.; Lim, M.K.; Tseng, M.-L.; Zhou, F. The Influence of Knowledge Management on Adoption Intention of Electric Vehicles: Perspective on Technological Knowledge. *Ind. Manag. Data Syst.* **2021**, *121*, 1481–1495. [CrossRef]
56. Kınış, F.; Tanova, C. Can I Trust My Phone to Replace My Wallet? The Determinants of E-Wallet Adoption in North Cyprus. *J. Theor. Appl. Electron. Commer. Res.* **2022**, *17*, 1696–1715. [CrossRef]
57. Rosli, M.S.; Saleh, N.S.; Md. Ali, A.; Abu Bakar, S. Factors Determining the Acceptance of E-Wallet among Gen Z from the Lens of the Extended Technology Acceptance Model. *Sustainability* **2023**, *15*, 5752. [CrossRef]
58. Puiu, A.-I. Analysis of the Consumer Knowledge and Attitude toward Innovations in the Fashion Industry. *Proc. Int. Conf. Appl. Stat.* **2019**, *1*, 407–418. [CrossRef]
59. Xenaki, V.; Marthinussen, M.C.; Costea, D.E.; Didilescu, A.C.; Susin, C.; Cimpan, M.R.; Åstrøm, A.N. Knowledge about Nanotechnology and Intention to Use Nanomaterials: A Comparative Study among Dental Students in Norway and Romania. *Eur. J. Dent. Educ.* **2020**, *24*, 79–87. [CrossRef]

60. Midgley, D.F.; Dowling, G.R. Innovativeness: The Concept and Its Measurement. *J. Consum. Res.* **1978**, *4*, 229. [CrossRef]
61. Roehrich, G. Consumer Innovativeness. *J. Bus. Res.* **2004**, *57*, 671–677. [CrossRef]
62. Fagan, M.; Kilmon, C.; Pandey, V. Exploring the Adoption of a Virtual Reality Simulation: The Role of Perceived Ease of Use, Perceived Usefulness and Personal Innovativeness. *Campus-Wide Inf. Syst.* **2012**, *29*, 117–127. [CrossRef]
63. Noh, M.; Li, Q.; Park, H. An Integration Model for Innovative Products in Korea and China: Bio-Based Smart Clothing. *Int. J. Prod. Dev.* **2016**, *21*, 59. [CrossRef]
64. Shi, Y. The Impact of Consumer Innovativeness on the Intention of Clicking on SNS Advertising. *Mod. Econ.* **2018**, *09*, 278–285. [CrossRef]
65. Rogers, E.M. Diffusion of Innovations: Modifications of a Model for Telecommunications. In *Die Diffusion von Innovationen in der Telekommunikation*; Stoetzer, M.-W., Mahler, A., Eds.; Springer: Berlin/Heidelberg, Germany, 1995; pp. 25–38, ISBN 978-3-540-60002-2.
66. Rogers, E.M. Diffusion of Preventive Innovations. *Addict. Behav.* **2002**, *27*, 989–993. [CrossRef] [PubMed]
67. Luan, X. Heating Properties of Graphene Oxide Nanosheets and Their Application in Clothing Design. *Adv. Mater. Sci. Eng.* **2022**, *2022*, 1–11. [CrossRef]
68. Liu, H. Clothing Nanometer Antimite and Antibacterial Based on Deep Learning Technology. *J. Nanomater.* **2022**, *2022*, 1–13. [CrossRef]
69. Gangwar, H.; Date, H.; Ramaswamy, R. Understanding Determinants of Cloud Computing Adoption Using an Integrated TAM-TOE Model. *J. Enterp. Inf. Manag.* **2015**, *28*, 107–130. [CrossRef]
70. Izuagbe, R.; Hamzat, S.A.; Joseph, E.I. Electronic Information Resources (EIR) Adoption in Private University Libraries: The Moderating Effect of Productivity and Relative Advantage on Perceived Usefulness. *J. Inf. Sci. Theory Pract.* **2016**, *4*, 30–48. [CrossRef]
71. Oh, J.; Yoon, S.-J. Validation of Haptic Enabling Technology Acceptance Model (HE-TAM): Integration of IDT and TAM. *Telemat. Inform.* **2014**, *31*, 585–596. [CrossRef]
72. Chen, S.-Y.; Lu, C.-C. Exploring the Relationships of Green Perceived Value, the Diffusion of Innovations, and the Technology Acceptance Model of Green Transportation. *Transp. J.* **2016**, *55*, 51–77. [CrossRef]
73. Tornatzky, L.G.; Klein, K.J. Innovation Characteristics and Innovation Adoption-Implementation: A Meta-Analysis of Findings. *IEEE Trans. Eng. Manag.* **1982**, *EM-29*, 28–45. [CrossRef]
74. Karahanna, E.; Agarwal, R.; Angst, C.M. Reconceptualizing Compatibility Beliefs in Technology Acceptance Research. *MIS Q.* **2006**, *30*, 781. [CrossRef]
75. Prieto, J.C.S.; Miguelanez, S.O.; Garcia-Penalvo, F.J. Behavioral Intention of Use of Mobile Technologies among Pre-Service Teachers: Implementation of a Technology Adoption Model Based on TAM with the Constructs of Compatibility and Resistance to Change. In Proceedings of the 2015 International Symposium on Computers in Education (SIIE), Setubal, Portugal, 25–27 November 2015; pp. 120–125.
76. Burton-Jones, A.; Hubona, G.S. The Mediation of External Variables in the Technology Acceptance Model. *Inf. Manag.* **2006**, *43*, 706–717. [CrossRef]
77. Moslehpour, M.; Pham, V.; Wong, W.-K.; Bilgiçli, İ. E-Purchase Intention of Taiwanese Consumers: Sustainable Mediation of Perceived Usefulness and Perceived Ease of Use. *Sustainability* **2018**, *10*, 234. [CrossRef]
78. Sun, H.; Zhang, P. An Exploration of Affect Factors and Their Role in User Technology Acceptance: Mediation and Causality. *J. Am. Soc. Inf. Sci.* **2008**, *59*, 1252–1263. [CrossRef]
79. Kaur, D.; Kaur, R. Does Electronic Word-of-Mouth Influence e-Recruitment Adoption? A Mediation Analysis Using the PLS-SEM Approach. *Manag. Res. Rev.* **2023**, *46*, 223–244. [CrossRef]
80. Baltar, F.; Brunet, I. Social Research 2.0: Virtual Snowball Sampling Method Using Facebook. *Internet Res.* **2012**, *22*, 57–74. [CrossRef]
81. Roberts, K. *Convenience Sampling through Facebook*; SAGE Publications, Ltd.: London, UK, 2014; ISBN 978-1-4739-4955-3.
82. Kock, N. *WarpPLS User Manual: Version 7.0*; ScriptWarp Systems: Laredo, TX, USA, 2021.
83. Kock, N.; Hadaya, P. Minimum Sample Size Estimation in PLS-SEM: The Inverse Square Root and Gamma-Exponential Methods: Sample Size in PLS-Based SEM. *Info Syst. J* **2018**, *28*, 227–261. [CrossRef]
84. Fishbein, M.; Ajzen, I. *Predicting and Changing Behavior*; Psychology Press: New York, USA, 2011; ISBN 978-1-136-87473-4.
85. Troise, C.; O'Driscoll, A.; Tani, M.; Prisco, A. Online Food Delivery Services and Behavioural Intention—A Test of an Integrated TAM and TPB Framework. *Br. Food J.* **2020**, *123*, 664–683. [CrossRef]
86. Chetioui, Y.; Benlafqih, H.; Lebdaoui, H. How Fashion Influencers Contribute to Consumers' Purchase Intention. *J. Fash. Mark. Manag. Int. J.* **2020**, *24*, 361–380. [CrossRef]
87. Doll, W.J.; Hendrickson, A.; Deng, X. Using Davis's Perceived Usefulness and Ease-of-Use Instruments for Decision Making: A Confirmatory and Multigroup Invariance Analysis. *Decis. Sci.* **1998**, *29*, 839–869. [CrossRef]
88. Almarzouqi, A.; Aburayya, A.; Salloum, S.A. Prediction of User's Intention to Use Metaverse System in Medical Education: A Hybrid SEM-ML Learning Approach. *IEEE Access* **2022**, *10*, 43421–43434. [CrossRef]
89. Hosseini, M.H.; Delaviz, M.; Derakhshide, H.; Delaviz, M. Factors Affecting Consumer Resistance to Innovation in Mobile Phone Industry. *Int. J. Asian Soc. Sci.* **2016**, *6*, 497–509. [CrossRef]

90. Maloney, M.P.; Ward, M.P.; Braucht, G.N. A Revised Scale for the Measurement of Ecological Attitudes and Knowledge. *Am. Psychol.* **1975**, *30*, 787–790. [CrossRef]
91. Chen, M.-F.; Lin, Y.-P.; Cheng, T.-J. Public Attitudes toward Nanotechnology Applications in Taiwan. *Technovation* **2013**, *33*, 88–96. [CrossRef]
92. Sahin, N.; Ekli, E. Nanotechnology Awareness, Opinions and Risk Perceptions among Middle School Students. *Int. J. Technol. Des. Educ.* **2013**, *23*, 867–881. [CrossRef]
93. Cruz, S.M.; Manata, B. Measurement of Environmental Concern: A Review and Analysis. *Front. Psychol.* **2020**, *11*, 363. [CrossRef]
94. Kardooni, R.; Yusoff, S.B.; Kari, F.B.; Moeenizadeh, L. Public Opinion on Renewable Energy Technologies and Climate Change in Peninsular Malaysia. *Renew. Energy* **2018**, *116*, 659–668. [CrossRef]
95. Hair, J.F.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M.; Danks, N.P.; Ray, S. *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*; Classroom Companion: Business; Springer International Publishing: Cham, Switzerland, 2021; ISBN 978-3-030-80518-0.
96. Kline, R.B. *Principles and Practice of Structural Equation Modeling*, 4th ed.; Methodology in the Social Sciences; The Guilford Press: New York, NY, USA, 2016; ISBN 978-1-4625-2335-1.
97. Hair, J.F.; Risher, J.J.; Sarstedt, M.; Ringle, C.M. When to Use and How to Report the Results of PLS-SEM. *Eur. Bus. Rev.* **2019**, *31*, 2–24. [CrossRef]
98. Hair, J.F.; Ringle, C.M.; Sarstedt, M. PLS-SEM: Indeed a Silver Bullet. *J. Mark. Theory Pract.* **2011**, *19*, 139–152. [CrossRef]
99. Nunnally, J.C. Psychometric Theory—25 Years Ago and Now. *Educ. Res.* **1975**, *4*, 7–21. [CrossRef]
100. Nunnally, J.C.; Bernstein, I.H. The Assessment of Reliability. *Psychom. Theory* **1994**, *3*, 248–292.
101. Cronbach, L.J. Coefficient Alpha and the Internal Structure of Tests. *Psychometrika* **1951**, *16*, 297–334. [CrossRef]
102. Nunnally, J.C. *Psychometric Theory*, 2nd ed.; McGraw-Hill: New York, NY, USA, 1978.
103. Fornell, C.; Larcker, D.F. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *J. Mark. Res.* **1981**, *18*, 39–50. [CrossRef]
104. Kennedy, P. *A Guide to Econometrics*, 6th ed.; Blackwell Pub: Malden, MA, USA, 2008; ISBN 978-1-4051-8258-4.
105. Cohen, J. *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed.; Taylor and Francis: Hoboken, NJ, USA, 2013; ISBN 978-1-134-74270-7.
106. Köhler, A.R.; Som, C. Risk Preventative Innovation Strategies for Emerging Technologies the Cases of Nano-Textiles and Smart Textiles. *Technovation* **2014**, *34*, 420–430. [CrossRef]
107. Cheng, Y.-M. Towards an Understanding of the Factors Affecting M-Learning Acceptance: Roles of Technological Characteristics and Compatibility. *Asia Pac. Manag. Rev.* **2015**, *20*, 109–119. [CrossRef]
108. Yuen, K.F.; Chua, J.; Li, K.X.; Wang, X. Consumer's Adoption of Virtual Reality Technologies for Marine Conservation: Motivational and Technology Acceptance Perspectives. *Technol. Forecast. Soc. Change* **2022**, *182*, 121891. [CrossRef]
109. Vandecasteele, B.; Geuens, M. Motivated Consumer Innovativeness: Concept, Measurement, and Validation. *Int. J. Res. Mark.* **2010**, *27*, 308–318. [CrossRef]
110. Marangunić, N.; Granić, A. Technology Acceptance Model: A Literature Review from 1986 to 2013. *Univ. Access Inf. Soc.* **2015**, *14*, 81–95. [CrossRef]
111. Hwang, C.; Chung, T.-L.; Sanders, E.A. Attitudes and Purchase Intentions for Smart Clothing: Examining U.S. Consumers' Functional, Expressive, and Aesthetic Needs for Solar-Powered Clothing. *Cloth. Text. Res. J.* **2016**, *34*, 207–222. [CrossRef]
112. Jeong, S.W.; Roh, J.-S. A Study on Acceptance of Smart Fashion Products—An Empirical Test of an Extended Technology Acceptance Model. *Res. J. Costume Cult.* **2016**, *24*, 263–272. [CrossRef]
113. Ko, E.; Sung, H.; Yun, H. Comparative Analysis of Purchase Intentions Toward Smart Clothing Between Korean and U.S. Consumers. *Cloth. Text. Res. J.* **2009**, *27*, 259–273. [CrossRef]
114. Moon, J.-W.; Kim, Y.-G. Extending the TAM for a World-Wide-Web Context. *Inf. Manag.* **2001**, *38*, 217–230. [CrossRef]
115. Mukendi, A.; Davies, I.; Glozer, S.; McDonagh, P. Sustainable Fashion: Current and Future Research Directions. *Eur. J. Mark.* **2020**, *54*, 2873–2909. [CrossRef]
116. Valaei, N.; Nikhashemi, S.R. Generation Y Consumers' Buying Behaviour in Fashion Apparel Industry: A Moderation Analysis. *J. Fash. Mark. Manag. Int. J.* **2017**, *21*, 523–543. [CrossRef]
117. Dhir, A.; Talwar, S.; Sadiq, M.; Sakashita, M.; Kaur, P. Green Apparel Buying Behaviour: A Stimulus–Organism–Behaviour–Consequence (SOBC) Perspective on Sustainability-oriented Consumption in Japan. *Bus. Strat. Environ.* **2021**, *30*, 3589–3605. [CrossRef]
118. Su, J.; Watchravesringkan, K.; Zhou, J.; Gil, M. Sustainable Clothing: Perspectives from US and Chinese Young Millennials. *Int. J. Retail. Distrib. Manag.* **2019**, *47*, 1141–1162. [CrossRef]
119. Jung, S.; Jin, B. From Quantity to Quality: Understanding Slow Fashion Consumers for Sustainability and Consumer Education: From Quantity to Quality. *Int. J. Consum. Stud.* **2016**, *40*, 410–421. [CrossRef]
120. Druică, E.; Ianole-Călin, R.; Puiu, A.-I. When Less Is More: Understanding the Adoption of a Minimalist Lifestyle Using the Theory of Planned Behavior. *Mathematics* **2023**, *11*, 696. [CrossRef]
121. Lee, E.-J.; Choi, H.; Han, J.; Kim, D.H.; Ko, E.; Kim, K.H. How to "Nudge" Your Consumers toward Sustainable Fashion Consumption: An fMRI Investigation. *J. Bus. Res.* **2020**, *117*, 642–651. [CrossRef]
122. Schubert, C. Green Nudges: Do They Work? Are They Ethical? *Ecol. Econ.* **2017**, *132*, 329–342. [CrossRef]

123. Sodano, V.; Gorgitano, M.T.; Verneau, F.; Vitale, C. Consumer Acceptance of Food Nanotechnology in Italy. *Br. Food J.* **2016**, *118*, 714–733. [CrossRef]
124. Giles, E.L.; Kuznesof, S.; Clark, B.; Hubbard, C.; Frewer, L.J. Consumer Acceptance of and Willingness to Pay for Food Nanotechnology: A Systematic Review. *J. Nanopart. Res.* **2015**, *17*, 467. [CrossRef]
125. Heiskanen, E.; Hyvönen, K.; Niva, M.; Pantzar, M.; Timonen, P.; Varjonen, J. User Involvement in Radical Innovation: Are Consumers Conservative? *Eur. J. Innov. Manag.* **2007**, *10*, 489–509. [CrossRef]
126. Dermody, J.; Hanmer-Lloyd, S.; Koenig-Lewis, N.; Zhao, A.L. Advancing Sustainable Consumption in the UK and China: The Mediating Effect of pro-Environmental Self-Identity. *J. Mark. Manag.* **2015**, *31*, 1472–1502. [CrossRef]
127. McNeill, L.; Moore, R. Sustainable Fashion Consumption and the Fast Fashion Conundrum: Fashionable Consumers and Attitudes to Sustainability in Clothing Choice: Sustainable Fashion Consumption and the Fast Fashion Conundrum. *Int. J. Consum. Stud.* **2015**, *39*, 212–222. [CrossRef]
128. Liviu, T. Change in Textile and Clothing Industry. *Ind. Textila* **2018**, *69*, 37–43. [CrossRef]
129. Dudian, M. Governance mechanisms and organizational innovation within the textile industry and textile products. *Manag. Res. Pract.* **2012**, *4*, 47–55.
130. Lee, S.H.; Huang, R. Exploring the Motives for Online Fashion Renting: Insights from Social Retailing to Sustainability. *Sustainability* **2020**, *12*, 7610. [CrossRef]
131. Johnstone, L.; Lindh, C. Sustainably Sustaining (Online) Fashion Consumption: Using Influencers to Promote Sustainable (Un)Planned Behaviour in Europe's Millennials. *J. Retail. Consum. Serv.* **2022**, *64*, 102775. [CrossRef]