

Article

Development and Validation of a Scale for Assessing Second-Hand Clothing Preferences Within a Sustainability Framework

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Abstract

The increasing environmental impact of the textile industry has heightened interest in sustainable consumption practices, particularly second-hand clothing consumption. However, instruments assessing attitudes toward second-hand clothing remain limited. This study aimed to develop a scale to assess university students' perceptions, sustainability orientations, values, and attitudes toward second-hand clothing consumption and to provide evidence of its psychometric properties. An initial pool of 45 items was generated through a literature review and focus group interviews with students from 14 universities representing different geographical regions of Türkiye. Exploratory Factor Analysis (EFA) was conducted using data from 244 university students. After removing nine items, a 36-item, eight-factor structure accounted for 66.43% of the total variance. The factors were labeled Saving, Fashion, Social Interaction, Spiritual Well-Being, Brand Orientation, Sustainability, Trust, and Nostalgia. Confirmatory Factor Analysis (CFA) performed on an independent sample supported the proposed structure and demonstrated an acceptable model fit ($\chi^2/df = 2.16$; CFI = 0.854; TLI = 0.838; RMSEA = 0.069; SRMR = 0.074). Cronbach's alpha coefficients ranged from 0.712 to 0.913. Overall, the findings indicate that the proposed scale demonstrates acceptable psychometric properties and has the potential to assess university students' attitudes toward second-hand clothing consumption in future research.

Keywords: second-hand clothing; sustainable consumption; consumer behavior; university students

1. Introduction

The textile and apparel industry is recognized as one of the priority sectors in the transition towards a circular economy because of its considerable environmental impacts. According to the European Environment Agency [1], textile consumption in Europe ranks among the most resource-intensive consumption domains, accounting for the third highest pressure on water and land use and the fifth highest use of raw materials and greenhouse gas emissions. These environmental challenges have intensified the need for more sustainable production and consumption practices, including extending product lifecycles through reuse and second-hand clothing consumption. One of the fundamental principles of the circular economy is the reuse of textile waste in the production of new textile products, particularly garments; however, less than 1% of textile materials are recycled into new



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clothing worldwide [2]. Consequently, the circular economy can serve as an important mechanism for achieving sustainability goals by facilitating the recycling and reuse of textile waste.

Sustainability is defined as limiting the current generation's consumption of non-renewable resources to ensure the preservation of ecosystem diversity and the transfer of these resources to future generations while maintaining environmental impacts within the carrying capacity of ecosystems [3]. Within this context, circular economy practices provide viable solutions to the global challenges of uncontrolled production and unsustainable consumption. Circular products are generally characterized by one of two key attributes: they are either manufactured from recyclable materials or designed to be more durable, thereby extending their lifespan and enabling their resale in second-hand markets [4]. Given that less than 1% of textile products are recycled globally, extending the service life of textile products and keeping them within the economic system for longer periods has become increasingly important. One of the most effective approaches to prolonging product lifespan is reuse, with second-hand clothing representing one of the most widespread forms of this practice. Indeed, the reuse of textile products has been identified as one of the most effective strategies for reducing the environmental impacts associated with the textile industry [5]. From this perspective, extending product lifespans and expanding reuse channels, such as second-hand markets, should be regarded not merely as an economic alternative but also as an essential circular economy strategy that reduces environmental burdens and improves resource efficiency [6].

Second-hand products are defined as items discarded by their original owners but subsequently offered or sold through various channels for continued use by second or subsequent owners [7]. Purchasing second-hand products is not a phenomenon unique to the twenty-first century. Consumers have long acquired second-hand clothing through traditional flea markets and face-to-face exchanges. However, advances in information technologies have eliminated temporal and geographical constraints, while the emergence of digital platforms dedicated to second-hand clothing has considerably broadened consumer access to these products [8].

Today, consumers are increasingly encouraged to reduce, reuse, and recycle in order to minimize environmental impacts [9,10]. As the fashion industry is widely recognized as one of the most resource-intensive and environmentally polluting industries [11], consumers have become increasingly aware of the importance of responsible and conscious consumption [12–15]. Consequently, the growing demand for second-hand clothing has been suggested as a potential means of mitigating the adverse environmental consequences of the fast-fashion industry. Nevertheless, environmental concern is not the sole motivation underlying consumers' preference for second-hand products. It is emphasized that economic considerations also constitute a major incentive for purchasing second-hand goods [16]. Furthermore, products offered by brands emphasizing ethical and local production are generally perceived as relatively expensive [12,15,17]. As a result, consumers may increasingly prefer second-hand clothing as a more affordable and environmentally responsible alternative. Previous studies also indicate that younger generations, particularly Millennials and Generation Z, attach considerable importance to sustainable consumption and demonstrate a willingness to modify their consumption habits in order to reduce their ecological footprint [18,19].

Although international research has generated substantial evidence regarding sustainable consumption and second-hand clothing preferences, studies examining how these consumption behaviors are shaped within the Turkish context have also begun to emerge. A review of the existing literature indicates that research on second-hand clothing consumption has predominantly focused on three major themes. The first stream investigates the

determinants of consumers' purchase intentions [20,21], the second examines the influence of perceived risks on purchasing behavior [22,23], while the third emphasizes motivational factors associated with sustainability, economic benefits, and social values [13,16]. Although these studies have generated valuable insights into different aspects of second-hand clothing consumption, relatively little attention has been devoted to developing psychometrically validated instruments capable of capturing this behavior in a multidimensional manner. This observation is also consistent with the broader literature on sustainable clothing consumption, which emphasizes the lack of comprehensive measurement instruments capable of assessing consumers' sustainable clothing consumption behaviors from a multidimensional perspective.

Existing research has largely examined second-hand clothing consumption through specific constructs, including purchase intention, perceived risk, sustainable consumption, and motivational factors. In contrast, psychometrically validated instruments capable of comprehensively assessing second-hand clothing preferences across economic, social, cultural, and psychological dimensions, while simultaneously incorporating sustainability, trust, nostalgia, and brand orientation, remain limited. Moreover, many existing measurement instruments have been developed in different cultural contexts, making it difficult to comprehensively capture the unique sustainability perceptions, value judgments, and motivations underlying second-hand clothing consumption among Turkish consumers. Accordingly, the present study addresses the following research questions (RQs):

RQ1. What are the underlying dimensions that constitute university students' preferences for second-hand clothing?

RQ2. Does the proposed scale demonstrate acceptable psychometric evidence in terms of its validity and reliability?

To address these questions, the present study adopts an exploratory approach to identify the underlying dimensions of second-hand clothing preferences and to develop a culturally sensitive measurement instrument capable of assessing these dimensions within the Turkish context. Such an instrument is expected to contribute not only to the theoretical understanding of second-hand clothing consumption but also to provide a robust methodological foundation for future empirical studies by enabling a more comprehensive and reliable assessment of sustainable consumption behaviors.

2. Materials and Methods

This study aimed to develop and validate a scale designed to assess university students' perceptions, sustainability orientations, value judgments, and attitudes regarding second-hand clothing use. For this purpose, the scale was planned to be administered to associate and undergraduate students studying at universities throughout Türkiye. Ethical approval was obtained from the Social and Human Sciences Research Ethics Committee of Bitlis Eren University (Decision No. 2025/09-09; Approval No. E.8206).

2.1. Scale Item Generation (Focus Group Interviews)

The scale development process is a systematic procedure that involves conceptualizing the construct of interest, generating items, and evaluating the psychometric properties of the resulting instrument. Accordingly, before developing the proposed measurement instrument, a comprehensive review of the literature on second-hand clothing consumption was conducted to establish the conceptual framework of the construct. Subsequently, focus group interviews were carried out with university students to explore their perceptions, attitudes, and experiences regarding second-hand clothing consumption and to generate context-specific items. For the focus group interviews, two universities were selected to represent each of Türkiye's seven geographical regions. The findings from the literature

review and the focus group interviews were synthesized to generate an initial pool of 45 items. The focus-group interview guide form is provided in Appendix B.

2.2. Scale Item Purification (Exploratory Factor Analysis-EFA)

Scales are measurement tools that provide a systematic framework for classifying, ranking, and quantifying the characteristics under investigation [24]. Beyond facilitating the measurement process, they also contribute to the quality and interpretability of the findings obtained [25]. Accordingly, all items in the present study were rated on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The preliminary version of the scale, consisting of 45 items, was administered to the pilot sample to examine its underlying factor structure. An exploratory factor analysis was first conducted to examine the underlying dimensional structure of the scale and identify the latent dimensions of the construct, and to evaluate the psychometric performance of the generated items. Principal Component Analysis (PCA) was used as the extraction method. Because it was preferred at the initial stage of the scale development process in order to reduce the 45-item pool, to explain as much of the total variance in the observed variables as possible, and to obtain a simpler and more interpretable component structure. Then, Varimax rotation with Kaiser normalization was applied to obtain a more interpretable structure. The suitability of the data for EFA was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett’s Test of Sphericity. Prior to analysis, negatively worded items were reverse-coded, and the internal consistency of the scale was assessed using Cronbach’s alpha coefficients. Items with low factor loadings or cross-loadings were eliminated based on the EFA results, leading to the refinement of the measurement instrument before proceeding to the CFA.

2.3. Scale Item Validation (CFA)

After EFA, CFA was performed to test and validate the factor structure identified in the exploratory stage. CFA is a multivariate statistical technique used to evaluate the extent to which the factor structure identified through EFA fits the observed data. In CFA, the relationships between observed variables and their underlying latent constructs are specified a priori, and the adequacy of the proposed measurement model is assessed using a range of goodness-of-fit indices. In the present study, item distributions and factor loadings were examined through statistical analyses, and the validity and reliability of the scale were evaluated. Subsequently, CFA was conducted on a different sample of comparable size to the pilot study in order to obtain the final version of the scale and evaluate its applicability. This procedure was undertaken to confirm the factor structure identified through EFA and to provide additional evidence for the construct validity of the measurement instrument.

3. Results

Eligibility criteria required participants to be at least 18 years of age, currently enrolled in an associate degree or undergraduate program at a university in Türkiye, and willing to provide informed consent prior to participation. Since the universities were randomly selected from within each geographical region and the students were subsequently randomly selected from the chosen universities, the sampling method employed was stratified multistage cluster sampling. The EFA sample consisted of 244 students (Their mean age was nearly 22, and 74.6% of the participants were women), while CFA was conducted on a separate independent sample of 244 students. Data screening, descriptive statistics, reliability analyses, and EFA were conducted in SPSS 25.0, whereas CFA was performed in Jamovi 2.7.12. The significance level was set at 0.05, and there were no missing data.

3.1. Purification (EFA) Results

The data obtained from the scale were analyzed statistically. Exploratory Factor Analysis (EFA) was employed to identify the underlying relationships among the items. Negatively worded items (* in Appendix A) were reverse-coded prior to the analysis, and Cronbach's alpha coefficient was calculated to assess the internal consistency of the scale. Following the pilot study conducted with 244 students, factor analysis revealed that several items exhibited low factor loadings. Prior to the EFA, the criteria for retaining items in the scale were established based on both statistical and theoretical considerations. Items were retained if they had a primary factor loading of at least 0.50. In addition, each factor was expected to consist of at least two theoretically coherent items and to be meaningfully interpretable. Items that failed to meet one or more of these criteria or that weakened the conceptual coherence of the factor structure were removed through an iterative evaluation process. Consequently, nine items were removed, resulting in a final scale comprising 36 items. The final version of the questionnaire is provided in Appendix A.

Before proceeding with factor analysis, the suitability of the pilot study data was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The KMO measure evaluates whether the pattern of correlations among the variables is sufficiently compact to support factor analysis, with values closer to 1 indicating greater sampling adequacy [26]. The obtained KMO value of 0.894, therefore, demonstrated that the sample was highly adequate for factor analysis. Bartlett's Test of Sphericity was also performed to test the null hypothesis that the correlation matrix is an identity matrix, which would indicate an absence of sufficiently strong relationships among the variables [27]. The *p*-value, which represents the probability of obtaining the observed result (or a more extreme one) by chance if the null hypothesis were true, was found to be below the predetermined significance level of 0.05, leading to the rejection of the null hypothesis; this indicated that sufficient correlations existed among the variables and confirmed the appropriateness of the data for factor analysis (Table 1).

Table 1. Results of the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity.

KMO and Bartlett's Test		
Kaiser–Meyer–Olkin Measure of Sampling Adequacy		0.894
Bartlett's Test of Sphericity	Approx. chi-square	4866.8
	df	630
	Sig. (<i>p</i> -value)	<0.001

The exploratory factor analysis produced the Total Variance Explained results presented in Table 2, while the corresponding Scree Plot is provided in Figure 1.

The elbow after the eighth item, together with the eigenvalue-greater-than-one criterion, supports an eight-item solution.

The first eight items had eigenvalues greater than 1 and collectively explained 66.433% of the variance. Table 3 presents the Varimax-rotated component matrix. Absolute loadings below 0.50 were suppressed; blank cells therefore represent loadings below the reporting threshold. Each retained item displayed one salient loading at or above 0.50 in the available matrix.

Communality values were examined using the extraction estimates reported in the Communalities table (Table 4), with values of at least 0.30 considered acceptable. Accordingly, the communality values for all items were found to be above 0.30. The fact that all communality values exceeded 0.30 indicates that each item shared an acceptable proportion of variance with the extracted factors. Therefore, all items were considered to be adequately represented by the resulting factor solution.

Table 2. Total variance explained in the exploratory factor analysis.

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.920	30.332	30.332	10.920	30.332	30.332	5.164	14.344	14.344
2	3.694	10.261	40.594	3.694	10.261	40.594	4.237	11.769	26.113
3	2.211	6.141	46.735	2.211	6.141	46.735	2.895	8.042	34.155
4	1.841	5.115	51.849	1.841	5.115	51.849	2.861	7.946	42.101
5	1.502	4.172	56.021	1.502	4.172	56.021	2.682	7.451	49.552
6	1.399	3.886	59.907	1.399	3.886	59.907	2.602	7.227	56.779
7	1.311	3.641	63.548	1.311	3.641	63.548	1.939	5.385	62.163
8	1.039	2.885	66.433	1.039	2.885	66.433	1.537	4.269	66.433
9	0.911	2.532	68.965						
10	0.824	2.288	71.253						
11	0.772	2.146	73.398						
12	0.711	1.975	75.373						
13	0.645	1.790	77.163						
14	0.628	1.745	78.908						
15	0.603	1.674	80.583						
16	0.584	1.623	82.206						
17	0.547	1.521	83.727						
18	0.505	1.404	85.130						
19	0.471	1.309	86.439						
20	0.459	1.275	87.715						
21	0.433	1.202	88.917						
22	0.417	1.158	90.075						
23	0.397	1.102	91.177						
24	0.366	1.018	92.195						
25	0.358	0.995	93.190						
26	0.324	0.900	94.090						
27	0.305	0.846	94.936						
28	0.286	0.795	95.731						
29	0.264	0.734	96.464						
30	0.231	0.641	97.106						
31	0.214	0.594	97.700						
32	0.210	0.582	98.282						
33	0.193	0.535	98.817						
34	0.155	0.429	99.246						
35	0.140	0.388	99.634						
36	0.132	0.366	100.000						

Extraction method: principal component analysis.

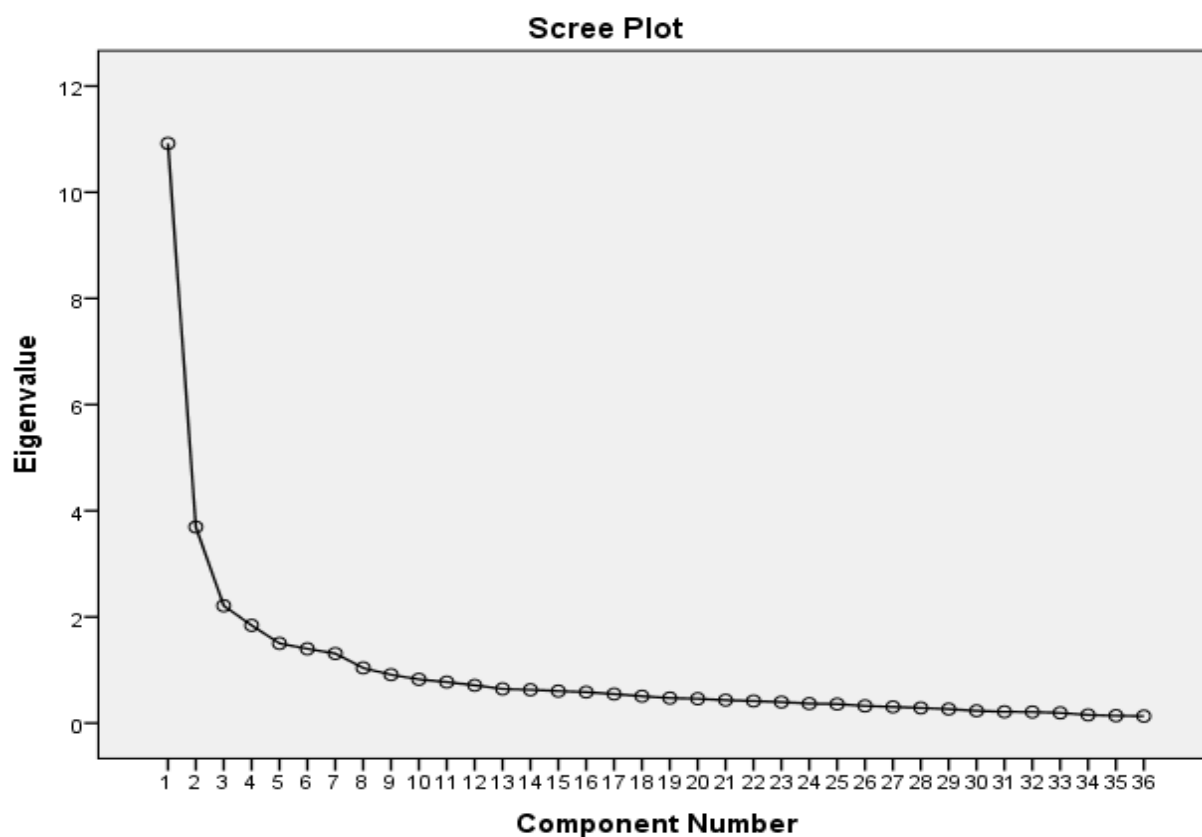
**Figure 1.** Scree plot of eigenvalues for the 36 retained items.

Table 3. Rotated component matrix.

	Factors							
	1	2	3	4	5	6	7	8
S2	0.820							
S3	0.790							
S6	0.787							
S1	0.720							
S5	0.708							
S7	0.704							
S10	0.617							
S16		0.785						
S14		0.746						
S17		0.732						
S15		0.709						
S13		0.709						
S21		0.501						
S25			0.829					
S26			0.739					
S24			0.683					
S22			0.560					
S36				0.710				
S34				0.682				
S35				0.678				
S31				0.583				
S33				0.556				
S32				0.503				
S23					0.731			
S19					0.707			
S20					0.654			
S18					0.637			
S27					0.624			
S28						0.789		
S29						0.739		
S30						0.692		
S4							0.839	
S8							0.732	
S9							0.627	
S11								0.610
S12								0.506

Extraction method: principal component analysis. Only absolute loadings ≥ 0.50 are displayed. Rotation Method: Varimax with Kaiser Normalization.

Item assignment was determined according to the highest factor loading criterion, whereby each item was retained under the factor on which it demonstrated the strongest loading. This process enabled the identification of the latent dimensions underlying university students' second-hand clothing preferences and provided evidence regarding the factors influencing such preferences.

Drawing upon the factor loadings and the theoretical meaning of the items associated with each dimension, the eight factors were respectively named Savings, Sustainability, Social Interaction, Trust, Spiritual Well-Being, Brand Orientation, Fashion, and Nostalgia.

Table 4. Communality values for the scale items.

Items	Initial	Extraction	Items	Initial	Extraction
S1	1.000	0.596	S19	1.000	0.568
S2	1.000	0.743	S20	1.000	0.530
S3	1.000	0.765	S21	1.000	0.407
S4	1.000	0.726	S22	1.000	0.626
S5	1.000	0.665	S23	1.000	0.660
S6	1.000	0.763	S24	1.000	0.681
S7	1.000	0.692	S25	1.000	0.785
S8	1.000	0.712	S26	1.000	0.703
S9	1.000	0.677	S27	1.000	0.539
S10	1.000	0.661	S28	1.000	0.748
S11	1.000	0.583	S29	1.000	0.799
S12	1.000	0.653	S30	1.000	0.753
S13	1.000	0.733	S31	1.000	0.610
S14	1.000	0.725	S32	1.000	0.628
S15	1.000	0.675	S33	1.000	0.488
S16	1.000	0.746	S34	1.000	0.671
S17	1.000	0.737	S35	1.000	0.624
S18	1.000	0.617	S36	1.000	0.629

3.2. Validation (CFA) Results

Following the validity and reliability assessments based on the factor loadings and item distributions obtained from the statistical analyses, CFA was conducted on a different sample of comparable size to that used in the pilot study in order to establish the final version of the scale and further evaluate its applicability. CFA was performed using the SEMLj module in Jamovi version 2.7.12, and the model parameters were estimated using the Maximum Likelihood (ML) estimation method.

According to the CFA results, the χ^2/df ratio was 2.16, indicating an acceptable level of model fit. In addition, the RMSEA and SRMR values were 0.069 and 0.074, respectively, suggesting an acceptable fit between the proposed measurement model and the observed data.

When the overall model fit was evaluated holistically, the findings indicated a moderate yet improvable level of fit between the proposed measurement model and the observed data. The incremental fit indices, namely CFI = 0.854 and TLI = 0.838, fell below the commonly recommended threshold of 0.90; however, values within this range are frequently reported in multifactorial and complex models, particularly in social science research. Considering the results obtained, the overall fit of the model should be interpreted as moderate rather than uniformly strong. Although the findings provide partial support for the proposed eight-factor structure, further refinement of the model is needed.

The reliability estimates obtained from the CFA demonstrated that all factors exhibited internal consistency above the acceptable threshold (Table 5). Cronbach's alpha coefficients ranged from 0.712 to 0.913, with the highest level of internal consistency observed for Factor 1 ($\alpha = 0.913$) and the lowest, yet still acceptable, value observed for Factor 8 ($\alpha = 0.712$). Similarly, McDonald's omega coefficients (ω_1 , ω_2 , and ω_3) ranged from 0.720 to 0.915 across all factors, exceeding the recommended threshold of 0.70 for each dimension. In particular, Factor 1 ($\omega \approx 0.915$), Factor 5 ($\omega \approx 0.860$), and Factor 6 ($\omega \approx 0.890$) demonstrated high levels of reliability, whereas Factors 2, 4, and 8 exhibited acceptable internal consistency. Overall, these findings indicate that all factors within the measurement model were measured reliably within the CFA framework and that the model satisfied the requirement of internal consistency.

Table 5. Reliability results of the CFA.

Factors	α	ω_1	ω_2	ω_3
F1	0.913	0.915	0.915	0.915
F2	0.743	0.743	0.743	0.730
F3	0.812	0.809	0.809	0.804
F4	0.743	0.745	0.745	0.742
F5	0.851	0.859	0.859	0.862
F6	0.881	0.889	0.889	0.890
F7	0.784	0.789	0.789	0.791
F8	0.712	0.720	0.720	0.720

The Average Variance Extracted (AVE) values obtained from the CFA indicate the extent to which each factor is represented by its corresponding items. Although an AVE value below 0.50 may signal potential concerns regarding convergent validity, it does not necessarily warrant the rejection of the construct.

The AVE values obtained from the CFA ranged from 0.374 to 0.673. The recommended threshold value of 0.50 was exceeded for Factor 1 (AVE = 0.607), Factor 3 (AVE = 0.515), Factor 5 (AVE = 0.673), Factor 6 (AVE = 0.580), and Factor 8 (AVE = 0.565). Factor 2 (AVE = 0.500) was located at the threshold level and can therefore be considered acceptable according to the relevant literature.

In contrast, Factor 4 (AVE = 0.374) and Factor 7 (AVE = 0.388) exhibited AVE values below the recommended threshold, indicating relatively weak convergent validity for these dimensions. Although the AVE values met or exceeded the recommended threshold of 0.50 for six of the eight factors, values below this threshold for the remaining two factors indicate that convergent validity was not fully established for these dimensions. Nevertheless, their Composite Reliability (CR) values (Table 6) were above 0.70, and the standardized factor loadings were generally acceptable. Therefore, the findings provide partial support for the convergent validity of these two dimensions, while suggesting that further refinement may be required in future studies.

Table 6. Composite Reliability (CR) values for the eight-factor measurement model.

Factors	Number of Items	Composite Reliability (CR)
F1	7	0.914
F2	6	0.886
F3	4	0.809
F4	6	0.788
F5	5	0.743
F6	3	0.857
F7	3	0.740
F8	2	0.729

Finally, after conducting parallel analysis to determine the factor structure, the results of the EFA, CFA, and parallel analysis were evaluated together when determining the factorial structure of the scale. The observed eigenvalues for the eight factors were greater than 1, indicating a multidimensional structure. In the eight-factor solution, the observed correlation matrix was reproduced with a low residual value (RMSR = 0.041). The eight factors consisted of interpretable item clusters, and the internal consistency coefficients for most dimensions ranged from 0.71 to 0.91. In addition, the eight-factor measurement structure

was supported by the CFA findings. Taken together, the eigenvalue pattern obtained from the parallel analysis, the proportion of explained variance, the interpretability of the factors, the reliability coefficients, and the CFA results indicated that retaining the theoretically defined eight-factor model was appropriate.

4. Discussion

The eight-factor structure identified in the present study indicates that second-hand clothing consumption is a multidimensional construct shaped by the interplay of economic, environmental, social, and individual motivations. This finding is consistent with previous studies suggesting that second-hand consumption cannot be explained solely by economic benefits or environmental concerns [16,28]. Likewise, recent systematic reviews have emphasized that second-hand clothing consumption is a multidimensional behavior influenced by the combined effects of economic, environmental, symbolic, and social motivations [29]. However, whereas previous studies have generally examined second-hand clothing consumption from economic, environmental, or fashion-oriented perspectives, the present study proposes a measurement scale that integrates these motivations within a single measurement model among university students in Türkiye. In this respect, the study provides psychometric evidence demonstrating that these diverse motivations can be assessed within a unified measurement framework, thereby offering a contextual contribution to the scale development literature on second-hand clothing consumption.

The emergence of the savings dimension suggests that economic considerations constitute an important motivational component of second-hand clothing consumption. This finding is consistent with the economic motivations reported by [16,30], while also indicating that second-hand clothing consumption extends beyond purely economic benefits to encompass a multidimensional decision-making process involving aesthetic, environmental, and psychosocial evaluations.

When considered together, the fashion and brand dimensions indicate that second-hand clothing consumption is associated not only with economic motivations but also with aesthetic and symbolic consumption tendencies. Previous research has consistently highlighted that second-hand clothing enables consumers to create a unique style, differentiate themselves from others, and follow fashion trends in a more affordable manner [28,31]. Similarly, recent studies focusing on Generation Z have identified the pursuit of uniqueness, aesthetic appreciation, and self-expression as important motivations underlying second-hand fashion consumption [32]. In line with these findings, the emergence of the Fashion dimension in the present study suggests that university students may perceive second-hand clothing not merely as a functional or economic alternative but also as a consumption option associated with aesthetic preferences. Nevertheless, the present study does not directly examine identity construction processes or fashion orientation. Therefore, this finding should be interpreted as evidence that aesthetic considerations represent a distinct psychometric dimension of attitudes toward second-hand clothing consumption.

Similarly, the emergence of the brand orientation dimension suggests that aesthetic evaluations in second-hand clothing consumption extend beyond the physical appearance of the product, with brand perception representing an independent aspect of consumers' evaluations. Previous studies have shown that consumers may prefer branded products in the second-hand market because of their perceived quality, value, and uniqueness [33]. Consistent with these findings, the present study indicates that brand perception constitutes a distinct dimension of attitudes toward second-hand clothing consumption. However, these results should not be interpreted as evidence that brand orientation is the primary determinant of second-hand clothing purchasing behavior. Rather, they indicate that brand-related evaluations represent an independent psychometric dimension in university

students' attitudes toward second-hand clothing consumption. In this respect, the findings are consistent with the international literature suggesting that aesthetic preferences and brand perception should be considered jointly within the multidimensional nature of second-hand clothing consumption [28,31,33].

The sustainability dimension identified in this study suggests that evaluations related to environmental awareness and the efficient use of resources constitute a distinct component of attitudes toward second-hand clothing consumption. This finding is consistent with previous studies conceptualizing second-hand clothing consumption within the frameworks of sustainable consumption and the circular economy [34]. Given the substantial environmental impacts of the textile industry, the literature has consistently emphasized that extending the lifespan of garments through second-hand use can contribute to reducing textile waste and promoting more sustainable consumption practices [29]. Nevertheless, the present findings do not directly demonstrate participants' pro-environmental behaviors; rather, they indicate that sustainability-related evaluations represent an important dimension of attitudes toward second-hand clothing consumption. Accordingly, these findings are consistent with previous studies reporting that sustainability considerations constitute a distinct component of consumers' evaluations of second-hand clothing.

The trust dimension indicates that second-hand clothing consumption is shaped not only by sustainability concerns or economic benefits but also by perceived risk. Consumers' evaluations regarding product hygiene, quality, actual condition, and seller credibility constitute important components of the decision-making process in the second-hand clothing market. This finding is consistent with previous research demonstrating the importance of trust in consumers' evaluations, particularly in online second-hand platforms [17]. However, the present study does not examine the effect of trust on purchasing behavior. Instead, it demonstrates that trust-related perceptions constitute an independent psychometric dimension of university students' attitudes toward second-hand clothing consumption. Therefore, the findings are consistent with the international literature identifying trust as an important component of attitudes toward second-hand clothing consumption.

Finally, the social interaction, spiritual well-being, and nostalgia dimensions suggest that second-hand clothing consumption should be understood within a broader psychosocial framework rather than being viewed solely through economic or environmental perspectives. However, the present study does not investigate the causal effects of these dimensions on consumer behavior. Instead, the findings indicate that these themes emerge as distinct dimensions of university students' perceptions of second-hand clothing consumption. Consequently, potential associations with concepts such as identity construction, moral satisfaction, or a sense of community should be explored in future explanatory research. These findings are also consistent with recent literature emphasizing that second-hand clothing consumption is driven by multiple and interrelated motivations [29].

Overall, the proposed scale reveals an eight-dimensional structure that captures the economic, environmental, aesthetic, and psychosocial aspects of second-hand clothing consumption. While the findings support previously identified economic, environmental, and fashion-related motivations [16,28,31], the inclusion of the Social Interaction, Spiritual Well-Being, and Nostalgia dimensions within the same measurement model provides additional psychometric support for the multidimensional nature of second-hand clothing consumption proposed in the literature. Nevertheless, these findings should be interpreted as psychometric evidence supporting the conceptual structure of the scale rather than as evidence explaining the effects of these dimensions on consumer behavior. Future studies involving different age groups, cultural contexts, and consumer segments may provide further evidence regarding the validity and generalizability of the proposed factor structure.

5. Conclusions

This study makes important theoretical and practical contributions to the literature on second-hand clothing consumption and sustainable consumption. First, the proposed scale provides a multidimensional measurement instrument that enables the comprehensive assessment of attitudes toward second-hand clothing consumption across economic, environmental, aesthetic, and psychosocial dimensions. While previous research has primarily examined second-hand consumption through economic or environmental motivations, the present study offers a more comprehensive framework by incorporating the social, psychological, and cultural aspects of second-hand clothing consumption.

Another important contribution of this study is the development of an original measurement instrument for assessing attitudes toward second-hand clothing consumption within the Turkish context. Considering that previous studies conducted in Türkiye have largely focused on specific variables such as sustainable fashion awareness, environmental concern, or consumer attitudes, the proposed scale addresses an important gap in the literature by providing a multidimensional assessment of attitudes toward second-hand clothing consumption. In particular, the emergence of the Savings, Brand Orientation, and Trust dimensions reflects the multidimensional nature of second-hand clothing consumption in relation to Türkiye's socioeconomic conditions and consumer culture. Likewise, the Social Interaction, Nostalgia, and Spiritual Well-Being dimensions suggest that second-hand clothing consumption may represent not only a functional consumption behavior but also a practice carrying broader social, cultural, and individual meanings.

The findings also have important implications for policymakers, educational institutions, and practitioners involved in sustainable fashion and circular economy initiatives. For policymakers, the proposed scale may serve as a useful instrument for evaluating sustainable consumption policies aimed at promoting second-hand clothing consumption. For educational institutions, the findings may contribute to the development of educational programs and awareness campaigns focusing on sustainable fashion, the circular economy, and responsible consumption among university students. From a practical perspective, the scale may assist second-hand retail platforms and industry practitioners in identifying consumers' evaluations regarding trust, brand perception, sustainability, and aesthetic expectations. Such information may facilitate improvements in platform design, product authentication systems, hygiene and quality assurance practices, and targeted marketing strategies. Accordingly, the proposed scale has the potential to serve not only as a valuable instrument for academic research but also as a practical tool for planning and evaluating sustainable fashion initiatives.

Nevertheless, the study is limited by the fact that the sample consisted exclusively of university students, which may restrict the generalizability of the findings to other age groups and consumer segments. Therefore, future research should examine the psychometric properties of the proposed scale across different age groups, socioeconomic backgrounds, and cultural contexts. Furthermore, investigating second-hand clothing consumption in relation to variables such as environmental awareness, sustainable lifestyles, social norms, circular economy behaviors, and purchase intention may contribute to a more comprehensive understanding of the determinants of this consumption behavior.

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Appendix A

Table A1. Second-hand clothing preferences questionnaire participant form.

Gender	☐ Female	☐ Male
Age		
This section includes several statements about your views and preferences regarding second-hand textile products (clothing, footwear, and accessories). For each statement, please mark the response option that best reflects your opinion.		
1 = Strongly Disagree	2 = Disagree	3 = Neither Agree nor Disagree
4 = Agree	5 = Strongly Agree	
Statement	1	2
3	4	5
1. My reason for preferring second-hand products is that I want to pay less.	☐	☐
2. Choosing second-hand clothing makes me feel that I can save more money.	☐	☐
3. If I choose second-hand clothing, I think I can allocate a larger portion of my budget to my other needs.	☐	☐
4. In general, I prefer to choose clothing that suits my budget rather than following fashion.	☐	☐
5. I think that buying second-hand clothing allows me to shop more frequently without increasing my budget.	☐	☐
6. When shopping second-hand, I think I can buy more items because I pay less.	☐	☐
7. I prefer second-hand clothing or accessories because they allow me to follow fashion at a more affordable price.	☐	☐
8. I buy second-hand clothing because I need it, not because it is fashionable.	☐	☐
9. Even if I know that they are not fashionable, I may prefer second-hand products to avoid paying more for clothing.	☐	☐
10. I think that using second-hand clothing allows me to create my own outfit more affordably by selecting the products I want from different brands.	☐	☐
11. Wearing period clothing makes me happy (e.g., clothing from the 1980s or 1990s, retro, or vintage clothing).	☐	☐
12. I believe that I can find clothing from a particular period more easily among second-hand clothing.	☐	☐
13. I may prefer second-hand clothing because I believe that recycling is important.	☐	☐
14. I may prefer second-hand clothing because I believe that it contributes to sustainability.	☐	☐
15. I consider using second-hand clothing a civic duty in terms of environmental responsibility.	☐	☐
16. I may prefer second-hand clothing because I consider the urge to consume to be wasteful.	☐	☐
17. I may prefer second-hand clothing in order not to be part of a consumption-oriented lifestyle.	☐	☐
* 18. I believe that using second-hand clothing may pose a health risk.	☐	☐
* 19. I think that the cleaning efforts required to make second-hand clothing usable entail an additional cost.	☐	☐
* 20. My views on using second-hand clothing became more negative following the pandemic.	☐	☐
21. I consider the use of second-hand clothing a form of transferring products between people for the purpose of mutual assistance.	☐	☐
22. I think that, through using second-hand clothing, I can create synergy between the lifestyles of different people and my own style.	☐	☐
* 23. I consider second-hand clothing to be products that others no longer like, and I do not want to buy them.	☐	☐

Table A1. Cont.

Gender	☐ Female	☐ Male					
Age							
This section includes several statements about your views and preferences regarding second-hand textile products (clothing, footwear, and accessories). For each statement, please mark the response option that best reflects your opinion.							
1 = Strongly Disagree	2 = Disagree	3 = Neither Agree nor Disagree	4 = Agree	5 = Strongly Agree			
Statement	1	2	3	4	5		
24. Using second-hand clothing makes me feel an inner connection with other people, and this makes me happy.	☐	☐	☐	☐	☐		
25. The reason I prefer second-hand products is that older products attract my attention more than new ones.	☐	☐	☐	☐	☐		
26. I like buying second-hand products because they remind me of the past.	☐	☐	☐	☐	☐		
* 27. I avoid choosing second-hand clothing because I believe that the previous owner’s negative energy may be transferred to me.	☐	☐	☐	☐	☐		
28. I may prefer second-hand clothing only for brands that I could not otherwise afford.	☐	☐	☐	☐	☐		
29. I may prefer second-hand clothing because I think that I can own products from well-known brands at a lower price.	☐	☐	☐	☐	☐		
30. I prefer second-hand clothing markets because I believe that I can find discontinued models from well-known brands there.	☐	☐	☐	☐	☐		
31. I believe that the most important consideration in second-hand clothing purchases is trust in the seller.	☐	☐	☐	☐	☐		
32. I believe that a different kind of bond, compared with other shopping transactions, develops between the buyer and the seller in second-hand clothing purchases.	☐	☐	☐	☐	☐		
33. For second-hand clothing, my trust in the product is more important than my trust in the seller.	☐	☐	☐	☐	☐		
* 34. I believe that problems encountered after purchasing second-hand clothing are more difficult to resolve.	☐	☐	☐	☐	☐		
* 35. I feel uneasy about payment-related matters when purchasing second-hand clothing.	☐	☐	☐	☐	☐		
* 36. When purchasing second-hand clothing through a mobile application, I think it is more difficult to determine whether any damage to the product was caused by the seller or the delivery company.	☐	☐	☐	☐	☐		

* Reverse coded.

Appendix B. Focus Group Interviews

The focus group interviews were conducted in accordance with ethical principles following an explanation of the study objectives and the voluntary nature of participation. Before the interviews, participants were informed about the research process, and they were assured that every effort would be made to protect the confidentiality of the information shared during the discussions. A semi-structured interview guide consisting of open-ended questions was developed to elicit participants' perceptions, experiences, attitudes, and evaluations regarding second-hand clothing consumption. When necessary, probing and follow-up questions were used to encourage participants to elaborate on their responses, provide examples, and clarify their viewpoints. This approach aimed to generate rich qualitative data that would serve as the basis for developing the initial scale items.

Within this framework, participants were asked the following questions:

1. How often do you shop for clothing?
2. When was the last time you purchased clothing?
3. Have you ever purchased second-hand clothing?
4. Have you ever sold second-hand clothing?
5. What are the first three words that come to mind when you hear the term second-hand clothing?
6. How would you describe people's attitudes toward second-hand clothing in your social environment?
7. Why do you think people purchase second-hand clothing?
8. In your opinion, what are the advantages of purchasing second-hand clothing?

9. In your opinion, what are the disadvantages of purchasing second-hand clothing?
10. Under what circumstances would you consider purchasing second-hand clothing?
11. What concerns you most when purchasing second-hand clothing?
12. What are your thoughts on hygiene in relation to second-hand clothing?
13. Is it important to you that a second-hand clothing item is an authentic branded product?
14. What factors increase or decrease your trust in a seller when purchasing second-hand clothing?
15. How does brand influence your clothing purchase decisions?
16. Do fashion trends influence your decision to purchase second-hand clothing? If so, how?
17. What are your views on the environmental impacts of clothing consumption?
18. How do you evaluate the environmental contribution of second-hand clothing consumption?
19. To what extent do environmental considerations influence your decision to purchase second-hand clothing?
20. How does social media influence your decision to purchase second-hand clothing?
21. How do the opinions of your family, friends, or other people around you influence your decision to purchase second-hand clothing?
22. How do you feel when wearing second-hand clothing?
23. How would you feel about wearing a garment that has previously been used by someone else?
24. What are your thoughts on vintage or clothing from previous decades?
25. Does the history or previous ownership of a garment influence your purchasing decision? If so, how?

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