Romantic Loneliness Scale for Adults: Development and Psychometric Examination

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Abstract

Romantic loneliness is defined as a subjective experience of loneliness and dissatisfaction that arises when an individual's need for emotional closeness, attachment, and reciprocity is not sufficiently met within a romantic relationship, despite the presence of a physical partner. Although theoretical and empirical studies show that romantic loneliness is a critical concept in developmental, emotional, and relational terms, there are limited valid and reliable measurement tools that can directly measure romantic loneliness in adults. This study aims to develop the Romantic Loneliness Scale for Adults and to examine the scale's factor structure, validity, reliability properties, and measurement invariance across genders. A 26-item draft form, created based on a literature review and expert opinions, was revised to 24 items. The scale was then administered to three independent samples (N = 265, N = 247, N = 192). Exploratory factor analysis revealed that the scale has a single-factor structure, accounting for 59% of the variance, with factor loadings ranging from 0.675 to 0.853. Confirmatory factor analysis showed that the unidimensional model provided acceptable fit (χ^2/df = 2.977, CFI = .948, GFI = .901, SRMR = .051). In reliability analyses, Cronbach's alpha coefficients ranged from 0.922 to 0.933, while McDonald's ω values ranged from 0.925 to 0.935; CR (0.936–0.938) and AVE (0.505–0.561) values supported the convergent validity of the scale. Measure invariance analyses conducted by gender showed that the scale has invariance at the scalar level. The findings suggest that the Romantic Loneliness Scale is a valid and reliable instrument for measuring romantic loneliness in adults.

Keywords:
Romantic, loneliness, adult, scale development

1. Introduction

Humans are social beings who, by nature, need to form relationships with others, feel a sense of closeness, and belong to a community. As Baumeister and Leary (1995) point out, the tendency to form social bonds is one of the fundamental motivations that guide human behavior. When this need is not met, individuals may experience a negative emotional state, commonly referred to as loneliness. Sullivan (1953) defined loneliness as a painful emotion that creates dissatisfaction and negatively affects individual functioning. Loneliness is considered a

significant problem area that can emerge at any age due to the effects of contemporary living conditions and threatens individuals' emotional well-being (Salimi & Bozorgpour, 2012). Recent large-scale and meta-analytic studies further indicate that loneliness is not only a psychological concern but also a significant public health issue, associated with increased risks of depression, anxiety, and mortality (Holt-Lunstad et al., 2018). In this context, loneliness is viewed as a multidimensional structure that can be experienced with varying contents and intensities, rather than as a one-dimensional emotion (Murphy, 2006). When examining theoretical definitions of loneliness in the literature, Peplau and Perlman's (1982) definition, which highlights the dissatisfaction caused by the mismatch between an individual's current social relationships and their desired relationships, is considered one of the most widely accepted explanations of loneliness. Weiss (1973) stated that loneliness can arise not only from a lack of relationships but also from relationships that are not sufficiently emotionally nourishing or close. This view is consistent with approaches that describe loneliness as a cognitive, emotional, and behavioral process (Armağan, 2014; Horowitz & French, 1979; Rubin et al., 1985; Sermat, 1978; Ünlü, 2015). More recent empirical work supports this perspective by demonstrating that individuals' expectations regarding intimacy, responsiveness, and emotional validation play a central role in the experience of loneliness (Hawkley & Cacioppo, 2018). At this point, various explanations of loneliness suggest that individuals' perceptions and expectations regarding relationship quality play a crucial role in the formation of this emotion.

One of the most important models contributing to a deeper understanding of the structure of loneliness is Weiss's (1973) distinction between social and emotional loneliness. Weiss (1973) defined social loneliness as a state of mind arising from deficiencies in an individual's social network, and emotional loneliness as a state of mind arising from the inability to achieve emotional satisfaction in close relationships. This theoretical framework was later expanded by the work of DiTomasso and Spinner (1993, 1997), who proposed that emotional loneliness should be examined in two sub-dimensions: emotional loneliness in family relationships and emotional loneliness in romantic relationships. In this context, romantic loneliness refers to a specific type of loneliness that arises when an individual's needs for emotional closeness, attachment, and support within a romantic relationship are not adequately met (Yüksel & Söner, 2024). Individuals experiencing romantic loneliness may feel lonely despite being physically present with a partner in a romantic relationship, due to a lack of desired emotional sharing, closeness, and reciprocity. Research indicates that romantic loneliness is associated with factors such as individuals' dating frequency, romantic relationship status, and relationship harmony, and that levels of romantic attachment are a significant determinant of this type of loneliness (DiTomasso & Spinner, 1997). Despite growing empirical attention in recent years, direct measurement tools specifically designed to assess romantic loneliness remain limited, with many studies still relying on indirect indicators or broader constructs of loneliness (Segrin et al., 2021). It is noted that individuals who are unable to establish sufficient emotional attachment in romantic relationships experience higher levels of romantic loneliness. On the other hand, since romantic loneliness is related not only to the presence of a relationship but also to the quality of that relationship, individuals in relationships can experience romantic loneliness just as much as those who are not in a relationship.

When the literature is examined, romantic loneliness is a phenomenon that significantly affects individuals' psychological well-being and is associated with various mental health problems such as depression, anxiety, low self-esteem, and social isolation. For example, a study conducted by Hasan and Clark (2016) with university students demonstrated that individuals experiencing higher levels of social isolation in romantic relationships developed greater dependence on their romantic partners, which in turn increased their experience of loneliness. Similarly, Rotenberg et al.'s (2001) research revealed that the relationship between jealousy and loneliness in romantic relationships gains meaning in the context of romantic loneliness, and that a lack of emotional satisfaction can intensify jealousy responses. Recent longitudinal and cross-cultural studies have further demonstrated that romantic loneliness is associated with emotional dysregulation, reduced life satisfaction, and heightened vulnerability to internalizing symptoms throughout adulthood (Mund et al., 2020). As expressed in Weiss's (1973) model, the level of emotional support, closeness, empathy, and reciprocity in romantic relationships is among the key determinants of romantic loneliness. Insufficient empathic communication, emotional distance, unmet needs, and feelings of not being valued in romantic relationships can contribute to the development of romantic loneliness. This emotional state can negatively affect not only the quality of the romantic relationship but also the individual's other social relationships, self-esteem, and capacity to develop trust in future relationships. Erikson's (1968) psychosocial development theory regarding early adulthood also emphasizes that an individual's inability to form close relationships during this period can lead to feelings of isolation and loneliness. Therefore, romantic loneliness is considered a multidimensional construct at the intersection of developmental, emotional, and relational processes. However, a review of the literature reveals that studies directly addressing the concept of romantic loneliness are limited, with research being conducted through indirect concepts such as loneliness, intimacy, emotional disclosure, and relational adjustment (Öksüz, 2005; Yüksel & Söner, 2024).

1.1. The Present Study

This study addresses the need for a psychometrically robust measurement tool that specifically presents romantic loneliness in adulthood as a distinct experiential construct. While research in the literature has generally examined loneliness through broader or indirectly related constructs such as general loneliness, intimacy,

emotional openness, or relational harmony, these approaches do not allow for a direct assessment of romantic loneliness as a unique subjective experience. Given the central role of emotional intimacy, perceived reciprocity, and attachment expectations in adult romantic relationships, a targeted and empirically validated instrument is essential in both research and applied settings. Accordingly, the primary aim of this study is to develop and validate the Romantic Loneliness Scale for Adults by examining its factor structure, reliability, and cross-gender measurement invariance. Although various studies in the literature have examined concepts related to romantic loneliness (Hasan & Clark, 2016; Öksüz, 2005; Rotenberg et al., 2001), there have been few attempts to develop scales that specifically address romantic loneliness as a distinct construct. This situation hinders a deep understanding of the multidimensional nature of the concept in adult populations. Furthermore, it leads to measurement gaps in the design of preventive and intervention programs targeting romantic loneliness. Indeed, individuals' perceptions of emotional intimacy, trust, esteem, and reciprocity in romantic relationships are among the most important determinants of relational satisfaction and emotional well-being. Therefore, scientifically valid and reliable measurement of romantic loneliness is a critical requirement for understanding both relational dynamics and the psychological adjustment processes of adults. In this context, this study aims to develop a novel measurement tool to determine levels of romantic loneliness in adults, to elucidate the factor structure of the scale, and to examine its psychometric properties. It is believed that the study will fill a significant gap in the literature, contribute to the theoretical knowledge base in the field of romantic loneliness, and provide a reliable measurement tool for future research. At the same time, it will make a significant theoretical, methodological, and practical contribution to scientific efforts aimed at understanding the reflections of romantic loneliness in adult relationships. Based on this, the research questions were determined as follows.

1. What are the levels of exploratory factor analysis values for the Romantic Loneliness Scale for Adults?

2. Does the structure of the Romantic Loneliness Scale for Adults, tested with confirmatory factor analysis, show sufficient model fit and valid psychometric properties in adult samples?

3. Does the Romantic Loneliness Scale for Adults demonstrate that it is a valid and reliable measurement tool in terms of reliability (internal consistency, composite reliability) and measurement invariance (gender)?

2. Methodology

This section provides information on the research model, the study group, the measurement tools used, the data collection process employed, and the analysis methods applied.

2.1. Research Model

This study employed a methodological research design to evaluate the psychometric properties of the developed Romantic Loneliness Scale. Methodological studies are research focused on the development of measurement tools, conducting validity and reliability analyses, and validating measurement models (Boateng et al., 2018; DeVellis, 2017). Accordingly, the research was conducted within a sequential design that included exploratory factor analysis (EFA) to determine the scale's factor structure, confirmatory factor analysis (CFA) to test structural validity, and multi-group analyses to assess measurement invariance.

2.2. Study Group

In this study, Table 1 presents the demographic characteristics of the study group, showing the distribution of gender and educational status among the adult participants who participated in the data collection processes conducted within the scope of Studies 1, 2, and 3.

Table 1.

Demographic Information

		Study 1		Study 2		Study 3	
		ƒ	*%*	*ƒ*	*%*	*ƒ*	*%*
Gender							
	Male	106	40	111	44.9	104	45,2
	Female	159	60	136	55.1	88	45,8
Educational Status							
	Bachelor	175	66	170	68,8	138	71,9
	Master's Degree	90	34	77	31.2	54	28,1

Table 1 shows that the demographic characteristics of the three study groups exhibit a similar distribution. In Study 1, 40% of participants were male (n = 106) and 60% were female (n = 159). When examined by educational level, 66% had a bachelor's degree (n = 175) and 34% had a postgraduate degree (n = 90). In Study 2, 44.9% of participants were male (n = 111) and 55.1% were female (n = 136). In this group, 68.8% (n = 170) had a bachelor's degree, and 31.2% (n = 77) had a graduate degree. In the Study 3 sample, the ratio of male and female

participants is quite close, with 45.2% of participants being male (n = 104) and 45.8% being female (n = 88). In this group, 71.9% (n = 138) were graduates with a bachelor's degree, while 28.1% (n = 54) were graduates with a graduate degree. Looking at the age distributions, the age range in Study 1 is 18–61 with an average age of 28.48; in Study 2, the age range is 18–64 with an average age of 26.73; and in Study 3, the age range is 18–64 with an average age of 28.47.

2.3. Data Collection Tools and Procedure

This section provides explanations regarding the personal information form created by the researcher and the Romantic Loneliness Scale developed in the study.

2.3.1 Personal Information Form

The personal information form prepared by the researchers aims to determine specific demographic characteristics. This form includes variables such as gender, age, and education level.

2.3.2. Romantic Loneliness Scale

In the development and adaptation process of the Romantic Loneliness Scale used in this study, the relevant literature was examined in detail, and the basic theoretical frameworks and psychosocial components that explain the concept of romantic loneliness were identified. Accordingly, in the first stage, a broad item pool was created, and a 26-item draft form was prepared to represent the theoretical structure, including items such as "I feel incomplete when I don't have a romantic relationship" and "I feel like my life becomes meaningless when I don't have a romantic relationship. The prepared form was submitted to expert review to assess its content validity. As DeVellis (2016) states, expert evaluation is a critical stage that strengthens the conceptual content of the measurement tool and increases item suitability. In this context, opinions were obtained from three academics specializing in Psychological Counseling and Guidance, Clinical Psychology, and Measurement and Evaluation, as well as a Turkish language expert, to evaluate the linguistic accuracy of the statements. In line with the expert feedback, structures with grammatical issues were corrected, items that were repetitive or insufficient in reflecting the target behavior were eliminated, and the form was reduced to 24 items in its final version. Specifically, items were excluded at this stage if experts identified them as conceptually overlapping with other items or as insufficiently representative of the core experiential aspects of romantic loneliness. Subsequently, a small pilot group consisting of university students was used to assess the comprehensibility of the scale; adjustments were made regarding statement clarity, comprehensibility, and response time based on student feedback. The literature emphasizes that pilot studies in scale development processes are critical for understanding how items are cognitively perceived, especially in young adult samples (Boateng et al., 2018). Following the pilot study, the scale was administered to three separate study groups, and comprehensive validity and reliability analyses were conducted on the obtained data sets. AFA results showed that a single-factor structure adequately represented the theoretical framework; subsequently, DFA was performed on a different dataset to test the validity of this structure. During the transition from exploratory to confirmatory factor analysis, items were removed based on low factor loadings and conceptual overlap, resulting in a final unidimensional structure consisting of 12 items. Factor loadings, item-total correlations, CR, and AVE values were examined; the scale reached its final form with 12 items in a single dimension after removing items with low factor loadings or statistically weak items. Furthermore, measurement invariance analyses were conducted at the configural, metric, and scalar levels to determine whether the scale measured the same structure across genders, confirming that the scale achieved measurement equivalence across genders. These findings collectively demonstrate that the Romantic Loneliness Scale is a psychometrically valid and reliable measurement tool grounded in a theoretical foundation.

2.4. Data Collection and Analysis

In this study, data were collected through an online survey system, and participation was based on voluntary informed consent. The scale forms were distributed electronically to adult participants using secure online data collection platforms, and all responses were collected anonymously. Before participation, individuals were informed about the purpose of the study, confidentiality principles, and their right to withdraw at any time. Only participants who provided informed consent were allowed to proceed to the survey. Three separate data collection processes were carried out with independent samples within the scope of the study.

In this study, the data analysis process was conducted using SPSS, AMOS, and JASP software, and three separate data collection processes were carried out within the scope of the study. In the first stage, each data set was examined in detail for missing values, outliers, and inconsistencies, and the necessary adjustments were made. Subsequently, statistical analyses were performed to evaluate the validity and reliability properties of the scale. The KMO coefficient and Bartlett's Sphericity Test were applied to determine the suitability of the data for factor analysis; valid findings were obtained for factor analysis in all three data sets. Subsequently, item factor loadings and eigenvalues were calculated to show the relationship between the items and the factors. To examine the extent to which the items could distinguish the level of romantic loneliness, upper and lower 27% groups were formed, and the item means of these groups were compared using an independent samples t-test. All items were found to be significantly discriminative. All procedures related to this stage were performed using SPSS. To assess the

internal reliability of the scale, McDonald's ω, Cronbach's Alpha, and Guttman's Lambda coefficients were calculated for each study group. Furthermore, CR and AVE values were evaluated to examine construct reliability and convergent validity, and the results were found to be acceptable across all three datasets. Since the single-factor structure obtained from the exploratory factor analysis was deemed sufficient, confirmatory factor analysis was applied to a different dataset to test the validity of the structure. The DFA results indicated that the model's fit indices fell within the reference ranges. In the final stage, to test whether the scale measured the same structure across genders, multi-group analyses were conducted in AMOS, examining configural, metric, and scalar invariance levels. It was concluded that the scale achieved measurement equivalence between gender groups in all three datasets. Measurement invariance decisions were based on commonly accepted criteria in the literature, with particular emphasis on changes in comparative fit indices. In line with the ΔCFI ≤ .010 criterion recommended for multi-group analyses, the observed changes in model fit supported configural, metric, and scalar invariance across gender groups (Byrne, 2012; Cheung & Rensvold, 2002).

3. Findings

3.1. Findings regarding exploratory factor analysis and construct validity

Findings regarding the KMO, Bartlett's test, item factor loadings, and eigenvalues of the Romantic Loneliness Scale are presented in Table 2.

Table 2.

Item Factor Loadings, Eigenvalues, KMO, and Bartlett Test Results for the Romantic Loneliness Scale

Previous Article No	New Item No	Item Factor Load Value	Item Total Correlation	Eigenvalue	Variance	KMO	Barlett's Sphericity Test	
							$\bar{x}$	p
1	1	0,821	0,777					
2	2	0,832	0,779					
3	3	0,801	0,743					
4	4	0,853	0,804					
5	5	0,847	0,809					
7	6	0,721	0,658	7,056	59	0,926	2233,144	.000
12	7	0,679	0,627					
14	8	0,819	0,764					
15	9	0,675	0,619					
16	10	0,757	0,723					
17	11	0,674	0,622					
18	12	0,684	0,622					

As shown in Table 2, the results of the factor analysis conducted to evaluate the single-factor structure of the Romantic Loneliness Scale indicate that the scale exhibits a psychometrically robust structure. The factor loadings for the items range from .675 to .853, demonstrating that all items in the scale adequately represent the relevant factor. The item-total correlations, ranging from 0.619 to 0.809, indicate that the items establish consistent relationships with the construct they measure and that their discriminant validity is high. The fact that the eigenvalue of the single-factor structure is 7.056 and explains 59% of the total variance supports that the measurement tool comprehensively reflects the structure of romantic loneliness. Furthermore, the KMO coefficient of .926 indicates that the sample size is quite appropriate for factor analysis. At the same time, the significant Bartlett's sphericity test (χ^2 = 2233.144, p < .001) shows that the correlations between variables are suitable for factor analysis. When these findings are evaluated together, it is concluded that the scale has a strong factor structure that supports its construct validity.

3.2. Findings Regarding Item Discrimination

At this stage, item discriminant analyses were conducted to determine the ability of the scale items to distinguish levels of romantic loneliness. A comparison of the mean item scores of the upper and lower 27% (f = 72) groups using an independent t-test revealed that all items were significantly discriminative, and the relevant findings are presented in Table 3.

Table 3.

Findings related to substance discrimination

Previous Article No	New Item No	Groups	$\bar{x}$	Ss	t	p
1	1	Under Group	1,4583	,69073	21.102	.000
		Upper Group	5,1667	1,32154		
2	2	Under Group	1,2361	,54367	17.932	.000
		Upper Group	4,5694	1,48064		
3	3	Under Group	1,1250	,37294	15.449	.000
		Upper Group	4,1111	1,59714		
4	4	Under Group	1,1111	,31648	17.330	.000
		Upper Group	4,5139	1,63581		
5	5	Under Group	1,2917	,61524	25.255	.000
		Upper Group	5,4167	1,24188		
7	6	Under Group	1,0278	,16549	10.016	.000
		Upper Group	3,1944	1,82810		
12	7	Upper Group	4,5139	1,92092	12.469	.000
		Under Group	1,1667	,44405		
14	8	Upper Group	4,1667	1,79200	13.788	.000
		Under Group	1,1528	,36230		
15	9	Upper Group	3,5417	1,95684	10.186	.000
		Under Group	1,2917	,51560		
16	10	Upper Group	5,2222	1,43617	21.857	.000
		Under Group	1,5000	,78722		
17	11	Upper Group	5,3611	1,69760	17.508	.000
		Under Group	1,0417	,20123		
18	12	Upper Group	2,8056	1,60667	9.243	.000
		Under Group	1,4583	,69073		

Table 3 shows the item discrimination coefficients for the single-factor, 12-item scale. The statistically significant and acceptable correlations between the items and the total score indicate that each item establishes consistent relationships with the construct being measured. This finding suggests that the scale functions effectively for its intended purpose of measuring romantic loneliness and that the items possess sufficient representativeness within the targeted construct. Furthermore, the fact that the unidimensional structure exhibits a coherent and consistent pattern within itself indicates that the internal structure of the scale is supported. When all results are evaluated together, the scale offers reliable and robust psychometric properties in terms of construct validity.

3.3. Reliability Analyses

To determine the internal reliability of the measurement tool, Cronbach's Alpha, McDonald's ω, and Guttman's Lambda coefficients were calculated for each sub-dimension. Additionally, CR and AVE values were calculated to assess construct reliability and convergent validity. The results obtained are presented in Table 4.

Table 4.

Reliability Information for the Romantic Loneliness Scale

	Study 1 (N=265)	Study 2 (N=247)	Study 3 (N=192)
McDonald's ω	.935	.925	.926

Cronbach's Alpha	.933	.922	.924
Guttman's Lambda	.936	.928	.929
CR	.936	.938	.938
AVE	.505	.558	.561

Table 4 shows that the Romantic Loneliness Scale exhibits high internal reliability across all study groups. Cronbach's alpha coefficients, ranging from 0.922 to 0.933, McDonald's omega values, ranging from 0.925 to 0.935, and Guttman's lambda coefficients, ranging from 0.928 to 0.936, indicate that the scale has a consistent and stable internal structure. Indeed, in the literature, alpha and omega values of .70 and above are considered adequate, while values above .90 are regarded as excellent reliability levels (Nunnally & Bernstein, 1994; McDonald, 1999). Furthermore, the fact that the CR values, which serve as an indicator of composite reliability, fall within the range of .936–.938 in all samples indicates that the factor structure of the scale is strongly supported. The AVE values related to convergent validity range from 0.505 to 0.561, and the fact that they are above the 0.50 threshold value suggested by Fornell and Larcker (1981) indicates that the items explain the common variance at a sufficient level. When these findings are evaluated together, it can be concluded that the Romantic Loneliness Scale exhibits high reliability and satisfactory convergent validity across all study groups comprising adult individuals.

3.2. Findings Related to Confirmatory Factor Analysis

Confirmatory factor analysis was applied to determine whether the items adequately represented the factors and which factor each item showed a stronger relationship with. The resulting path diagram is presented below.
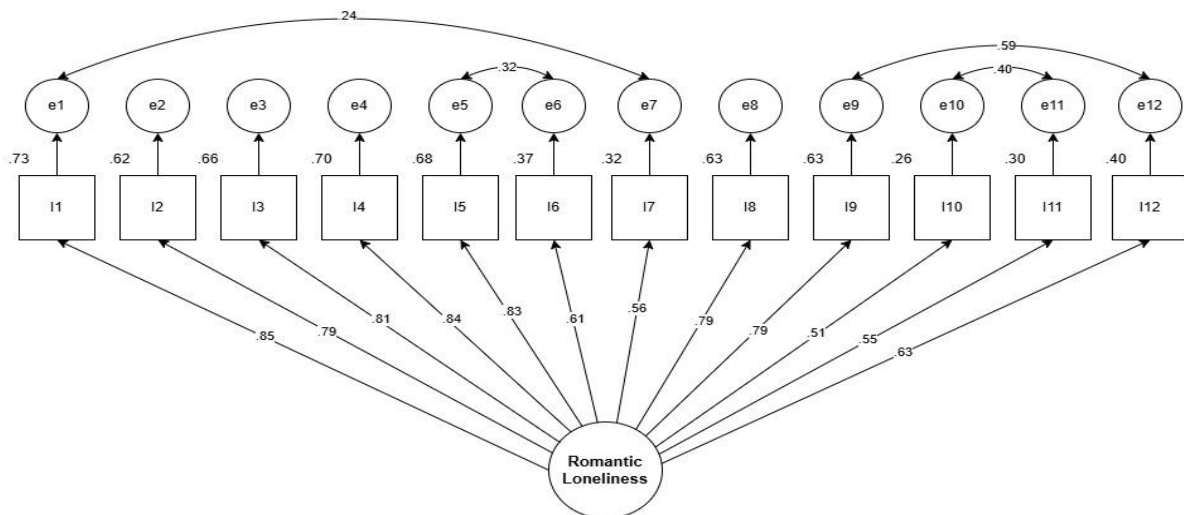

Figure 1. Confirmatory Factor Analysis Model Related to Romantic Loneliness

As a result of the confirmatory factor analysis performed, the chi-square value of the Romantic Loneliness Scale [χ^2/df = 2.977, p < .01] was found to be statistically significant. The ratio of the chi-square value to the degrees of freedom was calculated as 2.977, and this value being below 5 indicates that the model has an acceptable level of fit (Kline, 2011). To improve the model fit of the scale, a limited number of covariance definitions were established between item error terms, consistent with recommendations in the literature for theory-driven model refinement (Rubio et al., 2003; Brown, 2015). Specifically, four covariances were specified between item pairs that shared highly similar wording and content focus, particularly reflecting overlapping experiential aspects of perceived emotional deficiency and lack of meaning in romantic contexts. These covariances were introduced based on modification indices and theoretical interpretability rather than solely on statistical considerations, and no cross-loading or factor re-specification was applied. Although some guidelines suggest limiting the number of correlated errors, the present covariances were theoretically justified, parsimonious, and did not alter the underlying unidimensional factor structure. The fit indices obtained as a result of the analysis were CFI = 0.948, NFI = 0.925, GFI = 0.901, and SRMR = 0.051. These values are within the criteria specified in the relevant literature (Baumgartner & Homburg, 1996; Browne & Cudeck, 1993).

3.4. Findings on Gender-Related Measurement Invariance

Using data obtained from the working group, a multiple-group confirmatory factor analysis was applied to determine whether the measurement tool for adults demonstrated measurement equivalence across genders. For this purpose, data was collected from a new group. Table 5 presents the measurement invariance results related to this analysis.

Table 5.

Measurement invariance and fit values of the romantic loneliness scale

Model Tests	Model Fit Criteria				Model Difference Statistics		
	χ^2	Sd	RMSEA	CFI	$\Delta\chi^2$	Δsd^b	ΔCFI
Individual groups							
Females	359.569	108	,155	.935			
Males	207.872	108	.136	.903			
Configural İnvariance	285.770	54	.161	.880			
Metric equivalence	370.602	119	.143	.835	84.832	65	.045
Scalar equivalence	383.063	119	.146	.840	12.461	0	.005

As shown in Table 5, the Romantic Loneliness Scale exhibited a significant structure by gender. First, the acceptable fit values of the configural model (χ^2 = 285.770, df = 54, RMSEA = .161, CFI = .880) indicate that the scale has a similar factor structure in both female and male groups. Although a significant decrease in fit is observed in the metric model compared to the configural model ($\Delta\chi^2$ = 84.832, Δsd = 65, ΔCFI = .045), the literature emphasizes that metric invariance is often not achieved in the social sciences, but that higher-order models may still be evaluated (Byrne, 2012; Vandenberg & Lance, 2000). Indeed, in the scalar model where the coefficients were fixed, the fit values were only minimally impaired (χ^2 = 383.063, sd = 119, RMSEA = .146, CFI = .840) and ΔCFI remained below. 01 (ΔCFI = .005) indicates that scalar invariance was achieved. These findings reveal that the scale's item cut-off points are equivalent across gender groups. Therefore, comparisons between women and men based on latent means can be made validly and reliably.

4. Discussion and Conclusion

In this study, which aimed to develop a romantic loneliness scale for adults, analyses were conducted using data collected from three different groups. Therefore, considering this gap in the relevant literature, researchers decided to develop a measurement tool to assess adults' levels of Romantic Loneliness. In this study, the psychometric properties of the Romantic Loneliness Scale, developed to measure adults' levels of romantic loneliness, were comprehensively examined. The results indicate that the scale is a robust measurement tool in terms of construct validity and reliability indicators. Beyond demonstrating statistical adequacy, these findings are significant because they provide empirical support for conceptualizing romantic loneliness as a distinct experiential phenomenon rather than a secondary aspect of general loneliness. The findings suggest that the Romantic Loneliness Scale offers a novel and valid contribution to measurement tools, aligning with Weiss's (1973) conceptualization of emotional loneliness and DiTommaso and Spinner's (1993, 1997) distinction between romantic and emotional loneliness. In this sense, the present scale contributes to the literature by operationalizing romantic loneliness as a measurable construct that captures unmet emotional and attachment-related needs within romantic contexts.

The study demonstrates that the single-factor structure of the Romantic Loneliness Scale is statistically robust. Although romantic loneliness is theoretically conceptualized as a multidimensional construct shaped by developmental, emotional, and relational processes, its measurement in the present study was operationalized as a unidimensional latent structure. This approach reflects the phenomenological convergence of these interrelated processes into a coherent subjective experience of perceived emotional disconnection and unmet attachment needs within romantic contexts. This finding advances the measurement of romantic loneliness by showing that complex relational experiences can be meaningfully represented through parsimonious latent structures when they reflect a shared experiential core (Weiss, 1973). Thus, the single-factor structure does not contradict the multidimensional theoretical foundations of romantic loneliness; rather, it represents a parsimonious psychometric representation of a unified experiential construct. Both the high factor loadings and item-total correlations suggest that the items consistently reflect the construct they aim to measure and adequately represent the dimension of romantic loneliness. In particular, the calculation of the eigenvalue as 7.056 and the explanation of 59% of the total variance by a single factor support the scale's ability to encompass the concept of romantic loneliness under a comprehensive structure. Indicators related to the preconditions of the analysis also strengthen the robustness of the model. The KMO value of .926 indicates that the sample is suitable for factor analysis. At the same time, the Bartlett's test, being significant, suggests that there is a correlation structure suitable for factorization among the variables. Taken together, these results suggest that romantic loneliness constitutes a psychologically coherent experience that can be reliably distinguished from broader forms of social or emotional loneliness. When all these findings are evaluated together, it can be said that the scale successfully reflects the theoretically predicted structure and that its construct validity is strongly supported. When examining the item discrimination values for the single-factor, 12-item scale, it is observed that the relationships between the items and the total score are meaningful and at the expected levels. This indicates that the scale items are consistently linked to the structure of romantic loneliness and that each item adequately reflects the characteristic being measured. Furthermore, the fact that the unidimensional structure forms a consistent whole within itself

supports that the internal structure of the scale is consistent with theoretical expectations. This internal coherence is significant for applied research and clinical contexts, where concise and interpretable measurement tools are needed to assess relational vulnerability in adulthood. When all these findings are evaluated together, the scale has strong and reliable psychometric properties in terms of construct validity. The Romantic Loneliness Scale's high level of internal reliability across all study groups demonstrates that the instrument's measurement consistency is quite strong. The fact that Cronbach's alpha, McDonald's omega, and Guttman's lambda coefficients are within acceptable limits supports the scale's internally stable structure (McDonald, 1999; Nunnally & Bernstein, 1994). Additionally, the CR, a composite reliability indicator, and the AVE values related to convergent validity were found to be within acceptable ranges (Fornell & Larcker, 1981). These findings indicate that the scale not only performs well statistically but also provides a stable and replicable framework for assessing romantic loneliness across independent samples. When these results are evaluated holistically, it can be stated that the Romantic Loneliness Scale offers high reliability in adult samples and possesses satisfactory psychometric properties in terms of convergent validity.

The confirmatory factor analysis findings indicate that the single-factor structure of the Romantic Loneliness Scale is a good fit at an acceptable level. The chi-square/df value falls within the recommended threshold (≤ 5), indicating that the model fit is adequate (Kline, 2011). To improve model fit, as suggested in the literature, covariances were defined between some items (Rubio et al., 2003), and the fit indices obtained after these adjustments approached the target ranges. The CFI, NFI, GFI, and SRMR values obtained as a result of the analysis are consistent with the acceptable limits specified in the relevant sources (Baumgartner & Homburg, 1996; Browne & Cudeck, 1993). This level of model fit supports the structural validity of the scale and confirms that the latent construct of romantic loneliness is empirically distinguishable within adult samples. These results demonstrate that the confirmatory factor structure of the scale has been validated to a satisfactory level in the adult sample. When examining the measurement equivalence of the Romantic Loneliness Scale across genders, it was found that the scale has a similar factor structure in both female and male groups. Configural model findings indicate that the basic structure remains unchanged. In contrast, the limited decrease in fit in the metric model is considered a common occurrence in the social sciences and does not prevent higher-level analyses from being performed (Byrne, 2012; Vandenberg & Lance, 2000). In the scalar model, the ΔCFI value falling below the desired values indicates that the item cut-off points functioned equivalently across gender groups. This finding distinguishes the present scale from many existing loneliness measures by demonstrating that romantic loneliness can be meaningfully compared across genders without measurement bias. These results indicate that the Romantic Loneliness Scale measures the same structure in both female and male participants, and that comparisons based on latent means are valid and reliable. Therefore, the scale is suitable for safely assessing gender differences.

The Romantic Loneliness Scale, developed within the scope of this study, initially consisted of 24 items; however, factor analyses resulted in a single-factor structure comprising 12 items. The lowest possible score on this scale is 12, and the highest possible score is 84. A high score on this measurement tool is interpreted as indicating a high level of Romantic Loneliness. The exploratory and confirmatory factor analyses obtained show that the Romantic Loneliness Scale is a reliable measurement tool in terms of construct validity and internal consistency. Unlike broader loneliness instruments, the present scale focuses specifically on the subjective experience of romantic disconnection, thereby offering greater conceptual precision for research on adult romantic relationships. The fact that the correlations between the scale items and the total score are meaningful and high indicates that the items establish consistent relationships with the romantic loneliness construct to be measured. Internal reliability analyses (Cronbach's alpha, McDonald's omega, and Guttman's Lambda) support the scale's consistent and stable structure. AVE values related to convergent validity also reveal that the common variance of the items is at a sufficient level.

5. Recommendations

The strong psychometric properties demonstrated by the Romantic Loneliness Scale developed in this study indicate that the scale can be used reliably in both theoretical and applied research in future studies. Researchers are encouraged to retest the scale in different age groups, cultural contexts, and clinical or at-risk samples to diversify the validity and reliability evidence of the measurement tool; they are also encouraged to examine the change in romantic loneliness over time and its psychosocial determinants through longitudinal studies. The scale's single-factor and short structure allows for rapid screening of romantic loneliness levels in large samples and can be used by practitioners as an assessment tool in individual psychological counseling, couple and family counseling, or psychoeducational programs. In this regard, it is recommended that field practitioners use the scale as a screening tool to identify difficulties in emotional attachment in romantic relationships, loneliness-based cognitive-emotional patterns, and areas of risk that may affect relationship satisfaction. Furthermore, the scale's measurement equivalence across genders enables practitioners to compare female and male individuals confidently. Future studies examining the relationships between romantic loneliness and variables such as depression, hopelessness, subjective well-being, attachment styles, and social support will both enrich theoretical knowledge and contribute to the development of intervention programs aimed at reducing romantic loneliness.

6. Declarations

All articles must be submitted with a "Declaration" section that includes the following headings. Under this heading, the points that authors should pay attention to are stated.

7. References

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