

Validation of Short Form Social and Loneliness Scale for Adults (SELSA-S) Indonesian Version

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Abstract

Dissatisfaction in a relationship leads to both emotional and social loneliness. The emergence of loneliness stems from a mismatch between the quality of the relationship and expectations. A study was conducted to evaluate the validation of the Short Form Social and Emotional Loneliness Scale for Adults (SELSA-S) Bahasa Indonesian version, based on internal structure and its relationship with other variables. Using secondary data from 155 active students, the exploratory factor analysis (EFA) grouped 14 SELSA-S items. The grouping of social, romantic, and family dimensions in the Indonesian SELSA-S aligned with the initial design and the validity of SELSA-S in Brazil, Slovakia, and Turkey. All dimensions correlated significantly with the neuroticism variable, indicating that loneliness is positively associated with anxiety, depression, and emotional instability. The validation was supported by consistent reliability tests, confirming that the Indonesian version of SELSA-S is reliable in accurately measuring loneliness.

Keywords: Social and emotional loneliness, SELSA-S Indonesian version, validity, reliability, correlations.

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Introduction

Many people assume that individuals who spend time alone and engage in activities without the company of others are lonely. However, those who frequently engage in solitary activities do not necessarily experience loneliness. This distinction arises because loneliness and solitude are fundamentally different concepts. Loneliness is a subjective experience, influenced by others' perceptions, whereas solitude is an objective condition that can be easily observed and measured (Beller & Wagner, 2018; Helm et al., 2018). An individual who enjoys solitary activities differs from someone who experiences loneliness, whether alone or in the presence of others (Russell et al., 2012; Heu et al., 2019).

Loneliness is characterized as a state of emotional distress, stemming from the perception that one's social needs are unmet, either in terms of quantity or quality (Hawkley & Cacioppo, 2010). Long and Averill (2003) argued that loneliness involves an intentional reduction in social contact or interaction. Weiss (1973) asserted that loneliness does not result from being alone but rather from the absence

of meaningful relationships. Anderson (2004) further emphasized that loneliness is often accompanied by negative psychological effects, including depression, anxiety, unhappiness, and feelings of shame regarding oneself and one's social relationships. Similarly, research by Fauziyyah & Ampuni (2018) suggests that the tendency to develop depression is influenced by social relationships and experiences of loneliness.

According to Weiss (1973), loneliness can be categorized into two types: emotional loneliness, which refers to the lack of close, intimate relationships, and social loneliness, which relates to the absence of a well-established social network. Hayes (2017) suggested that disparities in these areas provoke negative emotions, leading to heightened feelings of isolation. Russell (1996) further noted that difficulties in socializing can hinder access to social support (Christina & Helsa, 2022). Loneliness is a universal experience, as Graham (in Triani, 2012) highlighted, capable of affecting individuals regardless of place or situation. Gil (2014) identified young adults aged 18-34 as particularly vulnerable to loneliness due to the challenges of life transitions. Difficulties in adaptation contribute to both social and emotional loneliness, arising from limited social interactions and struggles in adjusting to new environments (Spithoven et al., 2018; Permana et al., 2021).

A survey conducted by Into The Light and Change.org (2021) highlighted the prevalence of loneliness among Indonesians. The study included participants from various age groups, including the elderly, with 80% falling within the 18-34 age range. Findings revealed that 98% of respondents (n = 5,211) reported experiencing loneliness. Similarly, a survey by the Health Collaborative Center (HCC) in October 2023 found that 50% of Jabodetabek residents under 40 experienced loneliness, with 600 individuals unaware of their condition. This widespread loneliness is primarily driven by a disconnect between individuals and their surrounding environment, leading to a sense of social detachment. Research further associates loneliness with a shortened life expectancy and an increased risk of self-harm.

Several instruments are available to assess the symptoms of loneliness in individuals. The De Jong-Gierveld Loneliness Scale (DJGS), developed by De Jong Gierveld and Kamphuis (1985), consists of 11 unidimensional items, including five positive statements reflecting emotional belonging and six negative statements related to the loss of social connections. Another widely used tool is the UCLA Loneliness Scale, which comprises 20 items and is primarily suited for evaluating loneliness among the elderly (Nurdiani, 2013). In contrast, the Social and Emotional Loneliness Scale (SELSA-S) offers a distinct approach by assessing loneliness across social, familial, and romantic domains, with a particular focus on adulthood. This scale is especially relevant for understanding loneliness among Indonesia's working-age population, enabling more targeted and multidimensional interventions.

The Social and Emotional Loneliness Scale (SELSA), originally developed by DiTommaso and Spinner (1993), consists of 37 items designed to measure emotional and social loneliness. In 1997, the instrument underwent revision, resulting in the Short Form (SELSA-S), which includes 15 items focusing on social, family, and romantic relationships. This version utilizes a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) (DiTommaso et al., 2004). The modification aimed to enhance assessment efficiency while encompassing essential aspects such as attachment, relationships, competence, and adjustment. Furthermore, the SELSA-S is associated with both intrapersonal and interpersonal constructs, providing insight into an individual's self-perception and their relationship with the external environment.

A study on loneliness among young adults in Indonesia, particularly those in the productive age group, based on a survey conducted by Into The Light and Change.org (2021), revealed that 98% of

respondents reported feeling lonely. These findings underscore the critical need for a context-specific approach to understanding loneliness within Indonesia's cultural, social, and emotional framework. The Social and Emotional Loneliness Scale for Adults - Short Form (SELSA-S) provides a comprehensive assessment of loneliness, covering social, familial, and romantic aspects; however, it has not yet been validated in the Indonesian context. Given the high prevalence of loneliness in Indonesia, validating the SELSA-S in Indonesian is crucial for accurately detecting loneliness among adults. Such validation would serve as an early diagnostic tool, facilitating the identification of individuals exhibiting signs of loneliness.

Method

Participants

The participants in this study comprised active undergraduate students from various universities across Indonesia. A total of 155 individuals participated, consisting of 90 women (58%), 60 men (39%), and 5 participants (3%) who opted not to disclose their gender. The participants' ages ranged from 18 to 28 years, with 44.52% of them being 19 years old.

Procedure

The data utilized in this study consist of secondary data obtained from the Psychological Measurement Team at the University of Surabaya. All data were collected through an online survey conducted between October and November 2023. The translation process of the SELSA-S into Indonesian was performed by two translators possessing C1 and C2 level English proficiency, as determined by the Common European Framework of Reference for Languages (CEFR), and was conducted in accordance with the guidelines outlined in The Test Adaptation Reporting Standards (TARES, 2024). The translation process employed the forward translation method, wherein the text was adapted from English to Indonesian while ensuring the preservation of meaning and sequence (Douglas & Craig, 2007; Dhamayanti et al., 2017). The final translation was evaluated by taking into account the equivalence and consistency of item formats, scales, assessment categories, procedures, and administration in relation to the original version of the instrument (Iliescu et al., 2024).

Instruments

The Short Form Social and Emotional Loneliness Romantic Scale (SELSA-S) is a condensed version of the Social and Emotional Loneliness Romantic Scale (SELSA), originally published in 1993 which aims to improve the quality of measurement efficiency by changing the total number of items (DiTommaso & Spinner, 1993; DiTommaso et al., 2004). The SELSA-S is employed to assess loneliness in adults across three dimensions: social, family, and romantic, each comprising five items. In this study, the SELSA-S utilizes a six-point Likert scale, where 1 represents "strongly disagree" and 6 represents "strongly agree."

Based on the findings of Guimarães et al. (2019), the Brazilian version of the SELSA-S demonstrates a high level of reliability across all dimensions, with a Cronbach's Alpha (α) ranging from 0.77 to 0.93 (CITC = 0.34–0.94). This is further supported by an internal consistency assessment of the Turkish version of SELSA-S, conducted by Cecen (2007), which yielded similarly strong Cronbach's Alpha (α) values ranging from 0.74 to 0.83, with a CITC range of 0.73–0.85. Additionally, validity research on the Slovakian version of SELSA-S also confirmed strong reliability, with Cronbach's Alpha (α) ranging from 0.78 to 0.85 and CITC values between 0.74 and 0.87. The consistency of these inter-item reliability measures across different language versions indicates that the SELSA-S items reliably measure the intended constructs and yield consistent results.

Furthermore, an Exploratory Factor Analysis (EFA) of the Slovakian version of SELSA-S confirmed that the items were appropriately grouped according to the instrument's theoretical design, with factor loadings ranging from 0.41 to 0.92 (Lichner et al., 2021). Similar EFA procedures applied to the Brazilian and Turkish versions also identified a three-factor structure as the most optimal model (Cecen, 2007; Guimarães et al., 2019). The consistency of these EFA findings across different studies suggests that the SELSA-S items effectively define the latent constructs in accordance with the instrument's theoretical framework.

The validity of SELSA-S is further substantiated through Confirmatory Factor Analysis (CFA). Research on the Turkish version of SELSA-S by Cecen (2007) reported fit indices that met standard model adequacy criteria, with a Comparative Fit Index (CFI) of 0.92, Goodness of Fit Index (GFI) of 0.91, Incremental Fit Index (IFI) of 0.92, and Root Mean Square Error of Approximation (RMSEA) of 0.02. Similarly, CFA results for the Brazilian version demonstrated strong model fit, with Tucker-Lewis Index (TLI) = 0.98, CFI = 0.98, and RMSEA = 0.07, indicating that the proposed model aligns well with the empirical data. Likewise, CFA analysis of the Slovakian version yielded CFI = 0.94, GFI = 0.94, TLI = 0.92, and an RMSEA of 0.07, further supporting the validity of the measurement model. Based on the results of previous research, it can be concluded that SELSA-S has items that are designed to present the relationship between variables and theories accurately.

Data Processing and Analysis

According to the Standards for Educational and Psychological Testing, validity evidence can be derived from five sources: internal structure analysis, content validity, response processes, relationships with other variables, and measurement consequences (AERA, APA, & NCNE, 2014). The validity evaluation of the Indonesian version of the Short Form Social and Emotional Loneliness Scale for Adults (SELSA-S) was conducted using Statistical Product and Service Solutions (SPSS) version 26. SPSS was selected due to its capability to process large datasets efficiently while ensuring accuracy in statistical testing and presentation of analytical results (Qomari, 2009; Firdaus, 2021).

The validation of the Indonesian version of SELSA-S was based on two sources of evidence: internal structure and relationships with other variables. Internal structure analysis was conducted through reliability testing and Exploratory Factor Analysis (EFA), while validity based on relationships with other variables was assessed by examining correlations with the Neuroticism (N) dimension of the Big Five Inventory Personality-2. According to Janna & Harianto (2021), reliability testing is essential for determining the consistency of a measurement instrument, ensuring accuracy and stability in its results. An instrument is considered to have good internal consistency if it achieves a Cronbach's Alpha value greater than 0.60, with Corrected Item-Total Correlation (CITC) values of at least 0.3 for all items (Taherdoost, 2016; Natalya, 2018). Watkins (2018) stated that EFA aims to help evaluate items in the validation process and understand instrument patterns by grouping variables. EFA serves as a method for interpreting relationships and correlations among indicators by considering sample size, rotation methods, extraction techniques, and necessary analytical procedures (Sürücü et al., 2022). The SELSA-S is considered to demonstrate adequate validity if EFA results indicate factor loadings above 0.4 in the structural grouping of items, and if it exhibits a significant correlation with the Neuroticism dimension (Vanhalst et al., 2012; Buecker et al., 2020).

Result

In this chapter, the results of the factor analysis testing of the SELSA-S Indonesian version conducted by the researcher will be presented.

Internal structure of SELSA-S Indonesian version

Based on the EFA results from 155 data, it is known to have a KMO value of 0.74 and a Bartlett significance of <0.001. This value indicates that the adequacy of the data sample size is good enough to be continued for analysis (Shrestha, 2021). There are several proposals for the number of factors, namely three factors based on the a priori criterion and the percentage of variance explained criterion and four factors based on the latent root criterion and scree test. After being reviewed one by one, the researcher decided that the three-factor grouping was the best grouping because it could present the concept of the dimensions occupied clearly and precisely. The following is a Rotated Component Matrix table.

Based on table 1, the grouping of the 15 SELSA-S items aligns appropriately with the intended dimensions of family, social, and romantic loneliness, as originally conceptualized by DiTommaso et al. (2004). All SELSA-S items exhibit factor loadings greater than 0.4, with the exception of two items displaying zero loadings.

Table 1
Rotated Component Matrix Analysis Results

Items Code	Component		
	1	2	3
SELSAS_K_IR	0.829	-0.049	-0.139
SELSAS_K_11	0.814	0.255	-0.113
SELSAS_K_8	0.808	0.287	-0.088
SELSAS_K_4R	0.769	-0.194	-0.180
SELSAS_K_12	0.768	0.192	0.042
SELSAS_R_6	0.086	0.835	-0.158
SELSAS_R_3	0.088	0.827	-0.144
SELSAS_R_14	0.064	0.824	-0.069
SELSAS_R_10	0.013	0.643	0.282
SELSAS_R_15	-0.321	0.032	0.260
SELSAS_S_7	-0.270	0.248	0.762
SELSAS_S_13	-0.337	0.279	0.695
SELSAS_S_5R	0.046	-0.356	0.686
SELSAS_S_9R	-0.047	-0.213	0.581
SELSAS_S_2	-0.276	-0.290	0.347

Note: SELSAS = Short Form Social and Emotional Loneliness Scale for Adults, SELSAS_K = Keluarga (family), SELSAS_R = Romantis (romantic), SELSAS_S = Sosial (social)

Reliability of the Indonesian version of SELSA-S

The accuracy of the SELSA-S grouping is strengthened by the reliability test as below.

Table 2
Results of the SELSA-S Indonesian Version Reliability Test Analysis

Dimension	Alpha Cronbach	CITC Range	Total Items
Sosial (S)	0.689	0.300-0.571	5
Keluarga (K)	0.867	0.636-0.754	5
Romantis (R)	0.839	0.446-0.763	4

Note: S = Sosial (social), K = Keluarga (family), R = Romantis (romantic)

According to Table 2, the Indonesian version of SELSA-S effectively assesses loneliness across the social, family, and romantic dimensions, demonstrating strong internal consistency and reliability. Reliability analysis yielded a Cronbach’s Alpha range of 0.68 to 0.86 across a total of 14 items. One item from the romantic dimension (Item 15) was identified for removal. As per Anggraini et al. (2022), a measurement instrument is deemed reliable when α exceeds 0.60, indicating that all dimensions of SELSA-S meet the criteria for internal consistency and adequacy. The reliability findings confirm that the Indonesian version of SELSA-S provides an accurate and reliable assessment of loneliness in the social, family, and romantic domains. The complete list of items (Supplementary Material 1) and norm references (Supplementary Material 2) are available in the appendix.

Blueprint of SELSA-S Indonesian Version

Below is the final Blueprint of the SELSA-S Indonesian Version along with example items in Indonesian (See table 3).

Table 3.
Final blueprint of SELSA-S Indonesian Version

Dimension	No. Items	Example Items
Sosial (S)	2*, 5*, 7, 9*,13	Saya merasa menjadi bagian suatu kelompok.
Keluarga (K)	1*,4,8*,11*,12*	Tidak ada satu orang pun keluarga yang dapat diandalkan, tapi saya berharap ada.
Romantis (R)	3*,6*,10,14*	Kebutuhan saya akan hubungan romantis yang erat tidak terpenuhi.

Note: * = unfavorable items, S = Sosial (social), K = Keluarga (family), R = Romantis (romantic)
Correlation of SELSA-S Indonesian Version

Furthermore, all three dimensions of SELSA-S demonstrated a significant positive correlation with the Neuroticism (N) variable. The correlation analysis indicates a unidirectional and statistically significant relationship, signifying that higher loneliness scores are associated with increased experiences of negative emotions. The following section provides a detailed explanation of the correlation analysis between loneliness and negative emotional states.

Table 4
Validity based on correlation with other variables

	SELSAS_K	SELSAS_R	SELSAS_S	SELSAS
SELSAS_R	0.291**			
SELSAS_S	0.516**	0.379**		
SELSAS	0.661**	0.853**	0.747**	
BFI-2_N	0.437**	0.294**	0.344**	0.437**

Note: *sig <.05, **sig <.01, SELSAS = Total Short Form Social and Emotional Loneliness Scale for Adults, SELSAS_K = Keluarga (family), SELSAS_R = Romantis (romantic), SELSAS_S = Sosial (social), BFI-2 = Big Five Inventory-2, BFI-2_N = Neuroticism

Discussion

There are several things that can contribute to the experience of loneliness. Loneliness is not determined by the quantity of social relationships but rather by the quality and alignment between an individual's expected social interactions and reality (Hawkey & Cacioppo, 2010; Goosby et al., 2013). Weiss (1973) conceptualized loneliness as comprising two distinct forms: emotional loneliness and social loneliness. Emotional loneliness arises from the loss of an emotionally significant figure, which can occur in family and romantic relationships. In contrast, social loneliness results from deficiencies in the quality of social interactions that foster companionship and a sense of belonging (Weiss, 1973; DiTommaso & Spinner, 1993; Cacioppo et al., 2015). Hurlock (as cited in Christina & Helsa, 2022) identified several factors associated with an increased likelihood of loneliness, including academic and professional transitions, friendship dynamics, adaptation to new environments, familial closeness, and expectations regarding romantic relationships. Based on the findings of this study, it has been confirmed that the Indonesian version of SELSA-S effectively measures loneliness in relation to the quality of family, social, and romantic relationships, aligning with the original objectives set forth by DiTommaso et al. (2004).

The results of the study further confirm that the Indonesian version of SELSA-S retains the three-dimensional structure of the original instrument. The 15 SELSA-S items translated into Indonesian were shown to preserve the conceptual meaning of the original version. The EFA results for the family dimension supported the appropriate grouping of items, with all factor loadings exceeding 0.4 and a Cronbach's Alpha value of 0.86, indicating high internal consistency. Consequently, it can be concluded that the family dimension in the Indonesian version of SELSA-S reliably measures an individual's level of loneliness stemming from a lack of emotional closeness and familial support. These findings are consistent with prior SELSA-S validation studies conducted in Brazil (Guimarães et al., 2019) with $\alpha = 0.86$, Slovakia (Lichner et al., 2021) with $\alpha = 0.85$, and Turkey (Cecen, 2007) with $\alpha = 0.76$, all of which demonstrated robust reliability in assessing family-related loneliness. Hidayati (2018) found that family dynamics play a significant role in shaping feelings of loneliness, as attachment to family evolves over time. If individuals struggle to adapt to these changes, loneliness may emerge (Hidayati, 2018; Pramitha & Astuti, 2021). Life transitions such as migration or relocation can diminish family presence, thereby contributing to loneliness (Saputri et al., 2012; Muttaqin & Hidayati, 2022). Given the consistency of these findings with prior SELSA-S validation studies across different cultural contexts, the family dimension in the Indonesian version of SELSA-S is deemed a valid and reliable measure.

The results regarding the romantic dimension of the Indonesian version of SELSA-S exhibit slight deviations from the family dimension. Analyzing the rotated component matrix, it was observed that Item 15 (“Kebutuhan saya akan hubungan romantis yang erat tidak terpenuhi”) demonstrated zero loading (factor loading = 0.03). Howard (2016) posits that items with factor loadings below 0.4 should be removed to enhance the validity of a measurement instrument. This recommendation is supported by reliability analysis, which indicated a notable improvement in Cronbach’s Alpha from 0.74 to 0.83 after the removal of Item 15. The increase in reliability suggests greater internal consistency within the romantic dimension when Item 15 is excluded. In contrast, previous validations of SELSA-S in Brazil, Slovakia, and Turkey retained all 15 items, as each item significantly contributed to the measurement of social, family, and romantic loneliness. This discrepancy may be attributed to cultural differences, rendering Item 15 less relevant to Indonesian respondents. To ensure the validity and reliability of the Indonesian version of SELSA-S, the removal of Item 15 was directly approved following discussions with the original developer of SELSA-S, Enrico DiTommaso. This decision was made to enhance the accuracy of the romantic dimension while maintaining cultural relevance. The modification aligns with principles of cross-cultural adaptation, which emphasize the necessity of instrument validity within local contexts (Borsa et al., 2012; van Widenfelt et al., 2005). While Item 15 remains relevant in Brazil, Slovakia, and Turkey, its exclusion in the Indonesian adaptation ensures that SELSA-S provides a more precise assessment of romantic loneliness. The romantic dimension is closely linked to factors such as the duration of singlehood and lack of emotional support from close individuals, both of which contribute to emotional loneliness in adulthood (Adamczyk, 2016). According to BPS (Badan Pusat Statistik) data from 2022, the prevalence of singlehood among young adults in Indonesia has increased to 64%, reflecting changing social dynamics. Gazadinda & Pasaribu (2021) assert that engagement in marriage or intimate relationships serves as a protective factor against loneliness, as such relationships provide essential emotional support. This perspective aligns with Erikson’s theory of intimacy (as cited in Papalia & Feldman, 2014), which posits that fulfilling intimate relationships contribute to empathy, emotional regulation, and conflict resolution skills. Conversely, the absence of intimate connections may exacerbate feelings of loneliness. In this regard, the romantic dimension of the Indonesian version of SELSA-S remains a valid measure and is consistent with the Slovakian validation study, which also employed the romantic dimension as an essential indicator of loneliness.

The third dimension of SELSA-S assesses an individual's experience of loneliness based on the alignment between their expectations and the reality of their established social relationships. The analysis of the Indonesian version of SELSA-S confirmed that the grouping of the five social dimension items was appropriate, as evidenced by factor loadings ranging from 0.34 to 0.76 and a Cronbach’s Alpha of 0.68 ($\alpha > 0.6$). Item 2 (“Saya merasa menjadi bagian suatu kelompok”) exhibited a factor loading above 0.4. However, based on structural analysis within the EFA framework, it was determined that the item conceptually aligns with the definition of the social dimension, and thus, it is recommended to be retained within this dimension.

The findings from the EFA structural analysis confirm that the Indonesian version of the SELSA-S social dimension demonstrates good reliability and internal consistency. The social dimension within this measurement tool is associated with various forms of social interactions, including friendships, workplace relationships, and community belongingness (DiTommaso et al., 2004). Individuals who struggle to cultivate meaningful social relationships are more likely to experience loneliness, particularly as they age and face increasing work-related demands while their social circles gradually shrink (Amru & Ambarini, 2021; Febriani, 2021). Based on these findings, the social indicator is deemed appropriate for assessing loneliness within the Indonesian context and aligns with previous

SELSA-S validation studies in Turkey, which confirmed the validity and reliability of the social dimension in measuring loneliness (Cecen, 2007).

Additionally, the correlation analysis results indicated a moderate to strong significant correlation (0.29–0.51) among the three dimensions of the Indonesian version of SELSA-S. This finding is consistent with the validation study conducted by DiTommaso et al. (2007) in France, where all dimensions were correlated within a range of 0.18–0.42, demonstrating alignment with previous research. The moderate correlation among the SELSA-S dimensions suggests that these three aspects collectively provide a comprehensive depiction of the underlying sources of loneliness. Consequently, the Indonesian version of SELSA-S is considered a valid instrument for identifying and categorizing sources of loneliness in accordance with its theoretical framework and original design.

A correlation test was also conducted between all SELSA-S dimensions and the neuroticism variable. The results revealed a Pearson correlation coefficient ranging from 0.29 to 0.43, with a p-value of <0.001, indicating a statistically significant relationship between loneliness and neuroticism. This aligns with the findings of Ahya & Siaputra (2022), who stated that loneliness is associated with anxiety, depression, and emotional instability. Similarly, Vanhalst et al. (2012) identified a strong interrelation between loneliness and negative emotions. The study by Buecker et al. (2020) further supports this by demonstrating that higher loneliness scores are closely linked to increased negative emotional states. Additionally, Wiczorek et al. (2021) confirmed that individuals with high neuroticism are more prone to feelings of loneliness. The significant correlation observed in this study underscores the accuracy, precision, and reliability of the Indonesian version of SELSA-S in measuring loneliness.

The undergraduate student participants in this study were considered representative of the broader social and emotional landscape of Indonesian society. Given that undergraduate students come from diverse cultural, social, and geographical backgrounds, they collectively reflect the heterogeneity of Indonesian society. The dimensions measured by SELSA-S—loneliness in family, romantic, and social relationships—are universal constructs relevant across various age groups, including adolescents, young adults, and the elderly. Additionally, the SELSA-S items are designed with simple and accessible language, ensuring that individuals from various backgrounds can comprehend the instrument with ease. As a result, the Indonesian version of SELSA-S remains applicable and generalizable to broader community groups. These findings highlight the potential of SELSA-S as an effective tool for assessing loneliness within a multidimensional framework in the Indonesian population.

Limitation

Further research can be done by expanding the scope of the sample, such as involving more diverse age groups to see how loneliness appears at different stages of life. In this study, it was dominated by participants aged 19 years as many as 69 people, while the oldest participant at the age of 28 years was only 1 person. In addition, sampling can include individuals with different work backgrounds, relationship statuses, and education to ensure the generalizability of the results. With this approach, the Indonesian version of SELSA-S can be a more applicable measurement in various social and demographic contexts.

Conclusion

The phenomenon of loneliness in Indonesia is increasingly prevalent and has significant negative impacts, affecting not only specific generations but also individuals across all age groups. The experience of loneliness can manifest in emotional, social, or both dimensions simultaneously. Therefore, the Indonesian version of SELSA-S was developed to assess loneliness through a multidimensional framework using 14 items. This instrument identifies three key sources of

loneliness, corresponding to the dimensions of the Indonesian version of SELSA-S: the family and romantic dimensions, which assess emotional loneliness, and the social dimension, which evaluates social loneliness.

The Indonesian version of SELSA-S serves as an effective diagnostic tool for psychologists, counselors, and researchers, enabling them to assess the underlying sources of loneliness and support targeted mental health interventions. Its significant correlation with neuroticism further underscores its potential utility in psychological assessment. By employing the Indonesian version of SELSA-S, early detection of loneliness-related concerns becomes possible, facilitating the development of specific and culturally contextualized intervention strategies that cater to the needs of the Indonesian population.

Factor analysis confirmed that the items in the Indonesian version of SELSA-S are appropriately grouped to represent the social, family, and romantic dimensions, maintaining alignment with the original conceptual framework proposed by DiTommaso et al. (2004). Furthermore, reliability testing demonstrated strong internal consistency, reinforcing the instrument's reliability in measuring each dimension of loneliness accurately. The positive correlation between loneliness and neuroticism further validates the effectiveness of the Indonesian version of SELSA-S, as it aligns with previous research indicating that higher loneliness scores are associated with increased feelings of anxiety, depression, and emotional instability (Vanhalst et al., 2012; Buecker et al., 2020).

The results of the analysis of the sources of evidence of validity prove that the Indonesian version of SELSA-S is a valid measuring instrument for measuring loneliness. It can be concluded that the Indonesian version of SELSA-S can be used to predict sources of loneliness accurately.

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Conflict of Interest

The researchers declare that this paper has no conflicts of interest.

Author Contribution

All authors have contributed equally to the study's conceptualization, interpreting data, reviewing, and editing the manuscript.

Data Availability

Data can be provided upon request to the author.

Declarations Ethical Statement

The study followed the guidelines of the Declaration of Helsinki.

Informed Consent Statement

Informed consent was obtained from all persons involved in the study.

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Appendix

Supplementary Material I :

Items of the SELSA-S Indonesian Version

No.	Items
1	Saya merasa sendirian ketika bersama keluarga.
2	Saya merasa menjadi bagian suatu kelompok.
3	Saya memiliki pasangan yang dapat dibagikan pikiran dan perasaan terdalam saya.
4	Tidak ada satu orang pun keluarga yang dapat diandalkan, tapi saya berharap ada.
5	Teman-teman saya mengerti tujuan dan alasan saya.
6	Saya memiliki pasangan yang memberikan dukungan dan dorongan yang diperlukan.
7	Saya tidak memiliki teman untuk berbagi pandangan, tapi saya berharap ada.
8	Saya merasa dekat dengan keluarga.
9	Saya dapat mengandalkan bantuan dari teman.
10	Saya berharap hubungan saya dengan pasangan lebih memuaskan.
11	Saya merasa bagian dari keluarga.
12	Keluarga saya sangat perhatian.
13	Tidak ada teman yang memahami saya, tapi saya berharap ada.
14	Saya berkontribusi terhadap kebahagiaan pasangan.

Response Options for the SELSA-S Indonesian Version

1 = Sangat Tidak Setuju

2 = Tidak Setuju

3 = Agak Tidak Setuju

4 = Cukup Setuju

5 = Setuju

6 = Sangat Setuju

Supplementary Material 2:

Ideal Norms of the SELSA-S Indonesian Version

Category	Range
High	$x > 4.33$
Medium	2.67 - 4.33
Low	$x < 2.67$