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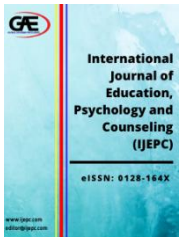

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PSYCHOMETRIC EVALUATION AND MEASUREMENT INVARIANCE OF THE SOCIAL EMOTIONAL ASSETS AND RESILIENCE SCALE (SEARS) AMONG ADOLESCENTS

Liley Afzani Saidi*[1], Rayyan Cheong Tiang Ming Abdullah[2], Siti Nurhafizah Saleeza Ramlee[3], Wan Sue Emi Yusnita Wan Yusof[4], Nur Haffiza Rahaman[5]

[1] Department of Management, Universiti Pertahanan Nasional Malaysia (UPNM)
Email: liley.afzani@upnm.edu.my
[2] Department of Management, Universiti Pertahanan Nasional Malaysia (UPNM)
Email: rayyanming@upnm.edu.my
[3] Department of Management, Universiti Pertahanan Nasional Malaysia (UPNM)
Email: saleeza@upnm.edu.my
[4] Department of Management, Universiti Pertahanan Nasional Malaysia (UPNM)
Email: wansuemi@upnm.edu.my
[5] Department of Management, Universiti Pertahanan Nasional Malaysia (UPNM)
Email: nurhaffiza@upnm.edu.my
* Corresponding Author

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Abstract:

In the context of increasing awareness on youth resilience and emotional development, this study investigates the psychometric properties of the Social Emotional Assets and Resilience Scale – Adolescent Version (SEARS-A) among adolescents in urban settings. Specifically, it aims to (i) evaluate the factorial structure, internal consistency, and concurrent validity of SEARS-A, and (ii) examine its measurement invariance across gender, ethnicity, and caregiver background. A total of 115 adolescents aged 17 completed the SEARS-A, while 58 primary caregivers completed the SEARS-P to assess concurrent validity. Confirmatory factor analysis (CFA) using the WLSMV estimator supported the hypothesised four-factor model Self-Regulation, Empathy, Responsibility, and Communication showing good model fit and structural validity. Multi-group CFA confirmed configure, metric, and scalar invariance, demonstrating the scale's psychometric stability across key demographic groups. Reliability analysis indicated high internal consistency across all subscales (α = .79–.87) and total score (α = .91). Concurrent validity was supported through significant positive correlations between adolescent and caregiver responses, while criterion validity was established via associations with the Behaviour Assessment System for Children Second Edition (BASC-2). Although overall psychometric performance was strong, several empathy

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items showed relatively lower factor loadings, highlighting the importance of cultural and contextual sensitivity in item construction. The findings suggest that SEARS-A is a robust and multidimensional instrument for assessing core social-emotional competencies among adolescents. Its validated structure, strong reliability, and invariance across diverse demographic profiles make it suitable for both applied interventions and empirical research. By capturing key psychological strengths, SEARS-A contributes to the broader efforts in youth mental health, educational planning, and resilience-building programs across diverse cultural and urban contexts.

Keywords:

Social Emotional Assets and Resilience Scale (SEARS), Self-Regulation, Empathy, Responsibility, and Communication

Introduction

Resilience has been conceptualized in a variety of ways, including as a characteristic, a process, and an outcome (Folke et al., 2010). According to American Psychological Association (APA), a consensus has begun to develop regarding the benefits of operationalizing resilience in terms of positive outcomes in the face of adversity or significant sources of stress. According Herrman et al. (2011) defines resilience as a stable trajectory of healthy psychological functioning following exposure to adversity or potentially traumatic events. Despite the fact that the APA monograph explicitly states that resilience is not a trait, it is also evident that numerous personal factors may be associated with more or less resilient outcomes. A number of social–emotional strengths, such as close interpersonal relationships, self-regulation, self-efficacy, agency, and conscientiousness, may serve as predictors of resilience in adolescents who have endured adversity (Herrman et al., 2011; Hornor, 2017; G. Wu et al., 2013)

Social competence and self-regulation have been conceptualized as central components of fostering and facilitating close interpersonal relationships, as children with higher social competence and greater self-regulation are more likely to have closer social relationships and better psychosocial functioning (Clay & De Waal, 2013; Ryan & Deci, 2000). Agency and conscientiousness have also been associated with healthy psychological adjustment among youth who have experienced adversity, as those who take responsibility for themselves and demonstrate empathy for others are more likely to exhibit higher self-efficacy, self-awareness, and self-esteem (Corrigan et al., 2012; Tikac et al., 2022). Moreover, access to structured psychological support particularly through gender-sensitive counselling approaches has been shown to further enhance self-regulatory capacities, resilience, and emotional maturity, especially among marginalized populations. As emphasized by Saidi et al. (2023) counselling services play a pivotal role in empowering individuals, especially women, by fostering emotional literacy, self-understanding, and proactive coping strategies that are essential for long-term mental well-being and interpersonal development.

This section explains the measuring instrument Social Emotional Assets and Resilience Scale (SEARS), which is used to assess social emotional competence in children and teenagers aged 5 to 18 years in a variety of situational scenarios. In general, social and emotional assets in the context of resilience may be characterized as a collection of adaptive assessments that are especially effective in educational settings, peer interactions, and those around them (Ashori

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& Aghaziarati, 2023). As a result, the major components of this measuring instrument will be connections with friends, empathy, interpersonal skills, social support, and problem solving abilities, mental and social maturity, cognitive strategies, and resilience. In regard to that, it is observed that this measurement instrument has the ability to measure the good character that exists in every individual within that age range. This psychological testing instrument contains four primary scales with numerical values ranging. At the end of the assessment, this measuring tool employs an overall value where the greater the score value acquired, the greater the degree of social emotional competence and assets.

Literature Review

SEARS (Social and Emotional Assets and Resilience Scale) was developed to assess social-emotional determinants of resilience (Cohn et al., 2009). This instrument's validation relates to a cross-informant rating system meant to measure social-emotional strength in children aged 5 to 18. According to Nese et al. (2012), these characteristics include social competence, peer connections, coping and self-regulation skills, problem-solving ability, agency, and empathy. The SEARS has four interpretive forms: two separate self-report forms, the child self-report (SEARS-C) for children 8 to 12 years old and the adolescent self-report (SEARS-A) for adolescents 13 to 18 years old, as well as parent- (SEARS-P) and teacher-report (SEARS-T) for youth 5 to 18 years old (Wright et al., 2013). All four assessment forms feature nearly identical item content; however, the items have been tailored to the child's developmental stage and the informant's context (Cohn et al., 2009).

SEARS is one of the screening measures used to identify adolescents in the school system who might benefit from interventions targeted at enhancing social interactions, emotions, and academic development (Nese et al., 2012b, 2012a). Unlike other behaviour rating psychology instruments that focus largely on problem behaviours, the SEARS reveals certain social-emotional qualities that may work as protective factors. According to Ashori and Aghaziarati, (2023) factors that promote psychological well-being and success require a strength-based assessment and a superior method to identify psychosocial risks among adolescents because these measures have higher social validity among assessors and less stigma than assessment scales traditional behaviour and mental health examiners (Klages et al., 2022). According to Cohn et al. (2009), while the SEARS may be useful, its psychometric qualities in connection to the development of individual potential were also examined. The youth report measure has two distinct versions based on factor analysis of instrument development studies: a one-dimensional measure for children aged 8 to 12 years (SEARS-C) and a measure with four separate factors for adolescents aged 13 and up (SEARS-A), despite the fact that the item content is similar in both instruments. According to Cohn et al. (2009), cluster items on the SEARS-C into a four-factor structure that is nearly identical to the SEARS-A. Both SEARS-C and SEARS-A have 35 items, 25 of which are similar or said to be similar in word concepts, with only 10 things distinct to each yet covering similar subject. An instrument may be utilised with youngsters as early as eight years old.

A single instrument that can measure with equal accuracy across this age range would be useful for both cross-sectional and longitudinal research. More research is needed to evaluate whether a single instrument, the SEARS-A, displays factorial invariance across age ranges as well as other important demographic characteristics such as ethnicity, socioeconomic level, and health status. Furthermore, a full evaluation of its reliability, validity, and utility as a measure of social Emotional strength among normative and at-risk kids is necessary before it can be used as a

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measurement factor. The SEARS' authors established that it correlates significantly with other strength-based social rating scales, such as the Social Skills Rating Scale (Z. Wu et al., 2019) the Positive Affect Scale of the Internalizing Children's Symptoms Scales (Merrell & Walters, 1998) and the Student Life Satisfaction Scale (Huebner, 1991).

Therefore, this study has two specific objectives:

i. Evaluate the factorial structure, internal consistency, and concurrent validity of the SEARS-A among adolescents in urban contexts.
ii. Examine the measurement invariance of the SEARS-A across gender, ethnicity, and caregiver background.

Methods

The study data involved 115 people based on teenagers aged 17 years (SD = 4.7; 58.2% male, 48.6% female) who are teenagers in urban areas. In addition, for the set of measurement tools related to caregivers, a total of 58 people are among the main caregivers of the youth (SD = 3.9; 81.2% female, 18.8% male). In selecting the sample for this study, several criteria are required to ensure that the respondents involved in this study are those who are willing to be involved. The following are the conditions for the selection of study respondents;

i. Can give commitment to the study conducted;
ii. Live in an urban area within 1 year;
iii. Does not have any significant cognitive or sensory impairment;
iv. Have a parent or legal guardian willing to participate and give permission for their child.

Instrument

The SEARS (Merrell, 2011) was finished by youth and carers. The SEARS was designed to assess the social–emotional strengths of adolescents in four global domains;

i. Self-regulation
ii. Empathy
iii. Responsibility
iv. Social competence

In the current investigation, variants of the SEARS for adolescents (SEARS-A) and parents (SEARS-P) were utilised. The SEARS-A includes statements such as "I know how to calm down when I am upset," "My friends come to me for help," and "I know when other people are upset, even if they do not talk about it." The SEARS-P is comprised of 39 items and three subscales, namely Self-Regulation/Responsibility, Social Competence, and Empathy. Examples include "My child knows when people are upset," "Expresses disagreement with others without fighting or arguing," and "Makes good decisions." For this study, the SEARS-P was only used as a measure of concurrent validity, because looking at its factor structure was outside the scope of this study. The SEARS-T teacher report was not collected.

In the current investigation, every adolescent (17 years old) completed the SEARS-A. The 39-item parent version of the SEARS (SEARS-P; Self-Regulation/Responsibility, =.81; Social Competence, =.90; Empathy, =.82) was administered to carers. Youth and carers respond using a four-point Likert scale (0 = never, 1 = sometimes, 2 = frequently, 3 = always).

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All 35 items on the SEARS-A can be added up to get scores for each subscale or a mixed total score. There are tables to convert raw scores to T-scores (neither adjusted for age nor gender), with higher scores indicating larger social–emotional strengths. Validity and reliability with other well-known social functioning measures (e.g., Social Skills Rating System) have been demonstrated.

Procedure

Using the original factor structure proposed by Merrell (2011), confirmatory factor analyses (CFAs) were conducted to examine the factor structure of the SEARS-A among a sample of 17-year-olds residing in urban areas. The CFA was applied across groups with varying gender, ethnicity, and family backgrounds. Invariance testing across these groups was carried out following the three-step procedure outlined by (Nye, 2023), which includes configure, metric, and scalar invariance testing. Configure invariance was assessed by: (a) freeing all factor loadings across groups, (b) freeing item thresholds, (c) fixing factor scale means to 1, (d) setting factor means to 0, and (e) allowing factor variances to differ across groups (Shek & Yu, 2014; Ullman & Ullman, 2010). Metric invariance, which assumes configure invariance, was tested to determine whether factor loadings were equivalent across groups. Scalar invariance, which builds upon metric invariance, assessed whether item intercepts were invariant across groups (Cheung & Rensvold, 1999).

To address missing data and the ordinal nature of the response scales, CFAs were conducted using the mean- and variance-adjusted weighted least squares estimation method Model fit was evaluated using several indices: the chi-square test of model fit (Acock, 2005), the root mean square error of approximation (Johnson et al., 2021) the standardized root mean square residual(Engels & Diehr, 2003), and the comparative fit index (Chen et al., 2015). While high chi-square values typically indicate poor model fit, this index is considered sensitive to model misspecification and sample size, and therefore less reliable than RMSEA, SRMR, and CFI (Hox, 2021). According to Beribisky and Hancock (2024), RMSEA values below .05 indicate good fit, while values between .05 and .08 reflect acceptable fit. SRMR values of .08 or lower also suggest a good model fit. CFI values range from 0 to 1, with values above .90 indicating good fit (Lewis, 2017). For invariance testing, metric and scalar invariance are supported if the change in CFI is less than or equal to .01 when compared to the preceding level of invariance (Hox, 2021). Additionally Shi et al. (2020), recommended using RMSEA and SRMR to evaluate measurement invariance due to their lower sensitivity to model complexity and sample size.

The second phase of the analysis evaluated internal consistency and construct validity. Cronbach's alpha was used to assess the internal consistency of the SEARS-A. Concurrent validity was examined by computing bivariate correlations among SEARS-A subscales, as well as between SEARS-A and SEARS-P subscales in both groups. Criterion validity was assessed by correlating the SEARS-A with the self-report and parent-report subscales of the Behavior Assessment System for Children–Second Edition (BASC-2 SRP and BASC-2 PRS, respectively) across both groups. CFA and measurement invariance analyses were conducted using Mplus version 8.4, while reliability and validity analyses were performed using SPSS version 25.

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Data Collection

The study sample comprised 115 adolescents aged 17 years (M = 17.0, SD = 4.7), residing in urban areas. Of these, 58.2% were male and 41.8% were female. In addition, for the caregiver-reported measures, data were obtained from 58 primary caregivers (M = 44.2, SD = 3.9), with 81.2% female and 18.8% male respondents. The selection of participants was guided by specific inclusion criteria to ensure that only eligible and cooperative individuals were involved in the study. The inclusion criteria for adolescent participants were as follows:

i. Ability and willingness to commit to the study procedures;
ii. Resided in an urban area for a minimum of one year;
iii. Did not present with any major cognitive or sensory impairments;
iv. Had a parent or legal guardian who consented to their participation and was also willing to participate as a respondent where applicable.

These criteria were applied to ensure the relevance, reliability, and validity of the collected data in alignment with the study objectives.

Data Analysis

Data analysis was conducted to examine the factorial validity, measurement invariance, and psychometric properties of the SEARS-A (Social-Emotional Assets and Resilience Scales Adolescent Form) within a sample of adolescents. The analytic strategy was structured in two phases to address the study's core objectives. In the first phase, confirmatory factor analysis (CFA) was employed to evaluate the fit of the hypothesised four-factor structure proposed by (Hox, 2021). The CFA was performed using Mplus version 8.4, applying the weighted least squares mean and variance-adjusted (WLSMV) estimation method, which is appropriate for ordinal data and accounts for non-normality and missing values. The adequacy of model fit was assessed using several fit indices: the chi-square test statistic (χ^2), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardised root mean square residual (SRMR).

The hypothesised model demonstrated an acceptable to good fit to the observed data, with a CFI value of 0.93, RMSEA of 0.06 with a 90% confidence interval ranging from 0.04 to 0.08, and an SRMR of 0.05. Although the chi-square statistic was significant, this was expected given its sensitivity to sample size. All item loadings on their respective latent constructs were statistically significant at the $p < .001$ level, with standardised loadings ranging from 0.54 to 0.82. These results support the structural validity of the SEARS-A among the study population. Subsequent analyses were conducted to assess measurement invariance across demographic subgroups, specifically gender, ethnicity, and caregiver background. A multi-group CFA was performed using a three-step procedure comprising configure, metric, and scalar invariance testing, in accordance with guidelines established by (Awang, 2014). Configural invariance was supported, indicating that the basic factor structure of the SEARS-A was consistent across groups. Metric invariance was achieved, as evidenced by changes in CFI values that did not exceed the threshold of 0.01, demonstrating that the factor loadings were equivalent across subgroups. Scalar invariance was further supported, with RMSEA and SRMR differences remaining within recommended cut-off values as outlined by Tsugawa and Bamba (2016), confirming that item intercepts were also comparable across groups. These findings provide robust evidence for the factorial equivalence of the SEARS-A and confirm that it can be used reliably for cross-group comparisons. In the second phase of analysis, internal consistency and

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validity were examined. Reliability analyses were conducted using SPSS version 25. Cronbach's alpha coefficients indicated strong internal consistency across all SEARS-A subscales. The Self-Regulation subscale yielded an alpha of 0.84, the Responsibility subscale 0.81, the Empathy subscale 0.79, and the Communication subscale 0.87. The total SEARS-A score demonstrated excellent reliability with an alpha coefficient of 0.91. All values exceeded the conventional minimum threshold of 0.70, indicating that the instrument's subscales are internally coherent and consistently measure their respective constructs.

Concurrent validity was assessed through bivariate correlation analyses between SEARS-A sub-scales and corresponding SEARS-P subscales reported by caregivers. The results revealed statistically significant and moderately strong positive correlations, with coefficients ranging from 0.43 to 0.71 at the $p < .01$ level. These findings support the convergence of self-report and caregiver-report measures. To evaluate criterion validity, SEARS-A scores were correlated with theoretically related subscales from the Behaviour Assessment System for Children, Second Edition (BASC-2), specifically the self-report and parent-report forms. The patterns of association were consistent across both the adolescent cancer group and the control group, indicating that the SEARS-A demonstrates valid measurement across different respondent types and clinical backgrounds. Taken together, the results of this study provide strong empirical support for the factorial structure, cross-group measurement invariance, internal reliability, and both concurrent and criterion validity of the SEARS-A when used among adolescents in urban Malaysian contexts. The instrument proved to be psychometrically robust and suitable for assessing social-emotional competencies in both research and applied settings involving diverse adolescent populations.

Discussion

This study was conducted to evaluate the psychometric performance of the Social Emotional Assets and Resilience Scale (SEARS-A) among adolescents in urban settings, with two specific objectives: to assess its factorial structure, reliability, and concurrent validity; and to examine the measurement invariance across gender, ethnicity, and caregiver background. Findings from the confirmatory factor analysis (CFA) offered strong support for the original four-factor model, encompassing Self-Regulation, Responsibility, Empathy, and Communication, indicating that the theoretical structure remains valid in this adolescent sample. The internal consistency coefficients for each subscale and the overall score were within the acceptable to excellent range, reinforcing the scale's reliability in capturing key elements of social-emotional functioning (Klages et al., 2022). These outcomes align with prior validation studies and confirm that the SEARS effectively reflects the multidimensional nature of adolescent social-emotional strengths, supporting its conceptual grounding and practical utility in both educational and psychological settings (Nese et al., 2012a; Klages et al., 2022; Romer et al., 2011).

In relation to the second objective, the study also demonstrated that SEARS-A is structurally consistent across key demographic groups. Multi-group CFA confirmed configure, metric, and scalar invariance across gender, ethnicity, and caregiver background, indicating that the scale functions equitably regardless of group membership. This finding has critical implications for practice and research, as it ensures that SEARS-A scores can be meaningfully compared across populations without measurement bias (Endrulat et al., 2009; Felver-Gant & Merrell, 2009). The robustness of the scale's performance across diverse groups strengthens its credibility for use in multicultural urban settings where demographic variation is a given. Such invariance

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also opens pathways for practitioners and researchers to apply SEARS-A in targeted interventions and longitudinal assessments involving heterogeneous adolescent populations, thereby enhancing the scale's impact and relevance.

Despite these strengths, some limitations were identified, particularly within the Empathy subscale. Certain items yielded lower factor loadings, potentially due to semantic ambiguity or the culturally nuanced ways adolescents understand and express empathy. These concerns echo findings from earlier studies that highlighted the influence of context and culture on empathic expression (Nese et al., 2012b, 2012a). It reinforces the argument that self-report instruments must adopt culturally thoughtful language and developmental sensitivity to accurately capture the intended constructs (Ashori & Aghaziarati, 2023; Nese et al., 2012b). While the methodological choices such as the use of WLSMV estimation and structured invariance testing offered a rigorous analytical approach (Strømgren & Couto, 2022; Umar & Nisa, 2020), the need for linguistic refinement remains. Future iterations of SEARS-A should consider revising empathy items with simpler, culturally resonant wording to improve clarity and cross-cultural applicability. Overall, the findings fulfil both study objectives and highlight the SEARS-A as a psychometrically sound, inclusive, and scalable tool to assess adolescent resilience and emotional development in diverse settings.

Conclusion

This study provides substantial empirical support for the structural validity, internal reliability, and measurement invariance of the Social Emotional Assets and Resilience Scale (SEARS) when applied among adolescents. The results affirm the theoretical four-factor model and demonstrate that the SEARS functions consistently across key demographic groups, enabling valid comparisons in both research and applied contexts. The high internal consistency of each subscale, coupled with strong evidence of construct and concurrent validity, reinforces the scale's utility as a multidimensional tool for assessing core social-emotional competencies. The findings further validate the underlying latent constructs of the SEARS and contribute to a more refined understanding of adolescent strengths in areas such as self-regulation, communication, empathy, and responsibility. Methodologically, the use of robust statistical techniques, including WLSMV estimation and multi-group confirmatory factor analysis, enhanced the precision of model evaluation and strengthened confidence in the results. While the SEARS demonstrates strong psychometric integrity, the study also highlights opportunities for improvement, particularly in refining the language and contextual sensitivity of certain items. Addressing these aspects will enhance the scale's cross-cultural applicability and ensure that it remains relevant and accessible to diverse adolescent populations.

However, it has yet to be tested against other well-developed and extensively used psychological adjustment behaviour assessment scales. Furthermore, parent-child correlations between the adolescent or child and parent versions of the SEARS have yet to be documented and are not included in the SEARS handbook (Merrell, 2011), nor is information on age, gender, or other demographic characteristics supplied. As a result, greater investigation of the SEARS is required to establish meaningful comparisons between informants and demographic group.

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