

RECEIVER-OPERATIVE CHARACTERISTICS ANALYSIS, TRANSLATION, ADAPTATION AND PSYCHOMETRIC PROPERTIES OF SOCIAL-EMOTIONAL COMPETENCE SCALE IN PAKISTAN

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Abstract

Introduction: Social-emotional competence is the ability to understand, regulate, and express emotions effectively while building and maintaining positive relationships. It is a critical skill for personal well-being, academic success, and for professional.

Objective: The present study objective was to validate the Social Emotional Competence Scale (SECS) in a Pakistani cultural context through translation and scrutiny of its psychometric properties. Cross sectional research design was used for current study.

Methods: Study planned at university of management and technology from July 2024 to January 2025. A total sample of 400 adolescents (200 boys & 200 girls) was selected using a convenience sampling technique. The participants ranged in age from 11 to 19 years. Internal consistency, test re-test reliability, and receiver operative characteristic analysis were applied to check the SEC psychometric properties.

Results: The language uniformity of the scale was assessed as 0.768 at 0.01 alpha levels significant, by applying bilingual design to the intended audience. With high levels of internal consistency and reliability (0.75), test-retest reliability (0.76), and split half (0.71) at the 0.01 level of significance.

Conclusion: the SECS showed strong psychometric qualities and appropriate for Pakistani culture. It has been revealed that the translated Pakistani version of SECS is a valid, trustworthy, and culturally sensitive tool for measuring social-emotional competency of teenagers in Pakistan. (Akhtar & Mughal, 2023).

INTRODUCTION

Social emotional competence plays a crucial role in individuals' overall well-being and functioning, making the assessment of this construct vital for understanding human behavior and development. Social and emotional competence is one of the most widely investigated areas of human social and emotional behavior. In recent decades, more emphasis has been made on study and the development of social competence (Carlton &

Winsler, 1999). Social skills and working abilities also accepted and widely affected qualities in human beings. In which social competencies play a big part in social skills and it containing the possession of diverse abilities and social skills (Argyle, 1999) and emotional content often determines the meaning of an interaction (Halberstadt et al., 2001). Social capability is an ever-changing system of social themes and social competence, which has the ability to organize social

behavior and give rise to the operation of individual elements of the system. The system of social competence consists of simple and complex abilities and their components: skills, routines, and social knowledge accumulated by the individual (Nagy 2000; 2007; Zsolnai & Józsa, 2003). The effectiveness of social behavior is highly dependent on the quality and quantity of an individual's set of social skills. Emotions are also essential for social interaction.

As dynamic processes created by relationships with others. Emotional abilities are made up of three basic components: (a) emotional expression (b) emotional understanding (c) emotional experience. Appropriate expression of emotions is of paramount importance in social interaction, and how individuals communicate their negative and positive emotions towards others is also an important factor persuading the development of their relationships. Another factor of emotional competence understands of emotions. Young people and adults who understand their own feelings and the feelings of others are much more likely to be successful in relationships than those without the ability (Denham et al., 2003; 2004). The third component is the emotional experience in which the individual perceives and controls emotions of varying intensities. This includes all external and internal processes responsible for monitoring, evaluating, and modifying emotional responses when pursuing specific social goals (Thompson, 1994).

The Social-Emotional Competence Scale developed by CASEL (Collaborative for Academic, Social, and Emotional Learning) in 2008 is designed to assess the emotional competence of children and adolescents. This scale encompasses items that inquire about their ability to acquire skills related to recognizing and managing emotions, developing empathy and concern for others, making responsible and ethical decisions, fostering positive and healthy relationships, and effectively coping with challenging or difficult situations (Durlak & Weissberg, 2011). In essence, this scale aims to measure the level of social-emotional competence in individuals, which is the capacity to understand and regulate one's emotions, as well as to interact positively with others, communicate effectively, and handle various social situations constructively. The scale can be used as a valuable tool for educators, psychologists, and researchers to assess and support the development of social-emotional

skills in young people. By promoting social-emotional competence, it is believed that children and adolescents can experience improved well-being, academic success, and healthier relationships throughout their lives. (Greenberg, 2003).

In various non-English-speaking countries, there is a prevailing issue with the use of psychological instruments that are primarily developed and standardized in Western cultures. This poses a challenge as the cultural differences between the Western context and the local context can influence how respondents interpret and respond to various items within the scales, potentially leading to inaccurate or misleading results. Moreover, language differences may also contribute to invalid findings, especially in societies where English is not the primary language (Akhtar & Shahid, 2022). Experts have expressed serious concerns about the use of existing standardized tests or scales across different cultures. Cultural variations, such as social norms, environmental factors, and social needs, can significantly impact how individuals perceive and respond to various psychological issues. People in different societies may experience and express problems differently based on their unique cultural perspectives.

Furthermore, using Western-based instruments in non-English-speaking societies may inadvertently introduce social desirability bias. Respondents may feel compelled to answer in a manner that aligns with Western norms, rather than expressing their genuine beliefs or experiences. To overcome these cultural limitations, a process of translation and validations is necessary. This involves not only translating instruments into the native language but also considering the cultural context, norms, and values of the target population.

METHODS

Study Design and Settings

The cross-sectional study was conducted in different cities of the District of Sialkot, Pakistan from July 2024 to January 2025 after approval from the Office of Research, Innovation, and Commercialization (ORIC), University of Management and Technology. The methods and materials included in the current study reviewed, permitted, and endorsed by the Board. Four important ethics of individual human

rights; self-esteem, skill, responsibility, and integrity are addressed in the study (Lindsay, 1999).

Participants selection Criteria

Participants selected only who were without any medical, psychological or mental illness. During the cross-language validation and reliability estimation process, a total of 400 adolescents, consisting of 400 (200 boys & 200 girls) were recruited from various schools and colleges in Sialkot (SGS, Classic School, learning zone, BQ and Islamic school) Pakistan. The age range of the participants was between 11 to 19 years, with a mean age of 15 years.

Social-Emotional Competence Scale

Social-Emotional Competence Scale developed by CASEL in (2008). It measures the children's and adolescent's emotional competence. In general, the scale includes those items that ask about the name the acquisition of skills to recognize and manage emotions, develop care and concern for others, make responsible decisions, establish positive relationships, and handle challenging situations effectively. The scale of social-emotional competence is comprised of 25 items. It based on five different subscales measure the ability of self-awareness, social awareness, relationship management with others, self-management of one's own emotions, and responsible decision making. Each of these dimensions consists of five items, the items' response on a 6-point Likert scale ranges from 1(not at all true for me) to 6 (very true of me). The cut of score of scale is 75. A high score on the scale shows high competency. The alpha reliability of the instrument was 0.77 and good construct validity (Zhou & Ee, 2012). The scale was translated in Urdu for the use of the adolescents' population, the alpha reliability of the scale is $\alpha=0.96$ and split-half reliability is 0.92 with the current study of 400 adolescents.

PROCEDURE

Step: 1 Formulation of the Translation Committee

To facilitate the translation and adaptation of the Social-Emotional Competence Scale for use in Urdu-speaking populations, an expert committee was established comprising three faculty members from the Psychology department UMT Lahore. These experts were proficient in both the source language

(English) and the target language (Urdu), the scale content was shared with committee.

Step: 2 Forward, Backward Translation and adaptation

All the standard procedures of forward and backward translation as given by Hambleton in (2005) were followed. After completion of forward and backward translation the bilingual expert panel examined and review the final draft of back translation and compared it with the original version of SECS the unsatisfactory items were rephrased by committee to enhance the construct, linguistic, and the technical equivalence of the scale. In the adaptation procedure first, two items of the self-awareness Sub-scale category were found double-barrel questions (1. I know what I am thinking and doing 2. I understand what I do why I do). Double barrel questions were divided into separate main questions to make it more understandable. The process of translating the Urdu version of the social-emotional competence Scale involved several steps to ensure accuracy and equivalence. After the initial forward translation, a backward translation was conducted by six bilingual subject experts, including four PhDs and two PhD scholars. These experts, selected based on their subject knowledge and language fluency, were tasked with translating the Urdu version back into English while preserving the content and intent of the items. The aim was to create a final Urdu version that maintained content consistency and accuracy of scale.

Step: 3 Cross Language Validation and pilot study.

To ensure the highest quality, a final proofreading of the translated scale was conducted. This comprehensive process aimed to produce a reliable and culturally appropriate English version of the social-emotional competence Scale for use in research, maintaining fidelity to the original content while making it accessible and meaningful in an English-language context. After the translation and adaptation processes were finished, research was carried out to determine whether or not the translated version is conceptually equivalent to the original. The study was carried out with a single bilingual group. According to this concept, a single group of bilinguals given two separate language versions of the scale. The original and the targeted version (Sierci, 2005). At this stage of

the study, a sample of 120 bilingual adolescents, 70 boys and 50 girls, ranging in age from 11 to 19 (mean age = 15 years), were chosen using the purposive sampling technique. Participants received both the Pakistani and original versions of SECS after a 15-day break.

Step: 4 Reliability Estimation

In this stage, to check the test-retest reliability with the inter test interval of fifteen days, split half reliability was calculated on the same sample of 120 adolescents between the age range of 11 to 19 years, with the mean age of 15 years. Internal consistency of the five subscales of self-awareness, social awareness, relationship management with others, self-management of one's own emotions, and responsible decision making was figure out and described in the following table. Urdu version was finalized after making changes and proof reading.

Step: 5 Establishment of criterion validity of scale by using Receiver- Operative Characteristic Analysis (ROC)

Establishment of criterion validity of scale by using Receiver- Operative Characteristic Analysis (ROC) ROC analysis used to find out the optimal threshold score of the scale. Performance indices were measured against sensitivity, specificity, and cut-off points. All the performance indices were calculated by ROC analysis. Translated scale validated with English version scale and administered on 400 adolescents.

RESULTS

Tables (1 & 2) show the findings of the equivalency calculation between Urdu and the original English version of SECS. At the.01 alpha level, there is a substantial association between all of the elements in the Urdu and the original English version.

Table-1: Linguistic Equivalence (Inter Item Correlation)) of Urdu and English Version of SECS (N=400)

| Item | Correlation |
|------|-------------|
| 1 | .515** |
| 2 | .506** |
| 3 | .563** |
| 4 | .468** |
| 5 | .567** |
| 6 | .603** |
| 7 | .728** |
| 8 | .615** |
| 9 | .740** |
| 10 | .696** |
| 11 | .781** |
| 12 | .715** |
| 13 | .506** |
| 14 | .463** |
| 15 | .568** |
| 16 | .467** |
| 17 | .603** |
| 18 | .528** |
| 19 | .615** |
| 20 | .440** |
| 21 | .696** |
| 22 | .615** |
| 23 | .540** |
| 24 | .696** |
| 25 | .640** |

Note. N =400, 15 days interval, ** p<.01 Correlation table explained 25 items of Social-emotional competence English and Urdu version.

Table-2: Alpha Reliability of Translated Version of Social-Emotional Competence Scale

| Subscale | Items | A |
|--------------------------|-------|------|
| Self-awareness | 05 | 0.52 |
| Social awareness | 05 | 0.62 |
| Relationship, management | 05 | 0.61 |
| Self-management | 05 | 0.72 |
| Decision making | 05 | 0.75 |
| SEC total | 25 | 0.98 |

The above table indicated the translated version of the social-emotional competence scale found reliable and appropriate for field administration.

Table 3: Split Half Reliability of SECS

| Scale | <i>r</i> | Significance |
|-------------------------------|----------|--------------|
| Cronbach's Alpha Part a | .912 | .01 |
| Part b | .943 | .01 |
| Correlation between Forms | .858 | .01 |
| Spearman-Brown Coefficient | .924 | .01 |
| Gutman Split-Half Coefficient | .924 | .01 |

Note. N=400 ** P<.01

Above table showed split half reliability of scale that is significant at the level of <0.01 Cronbach alpha part one revealed $r=0.91$ and part two presented 0.94 that's

indicate much prettiest application and criteria for measuring social-emotional competence in adolescents

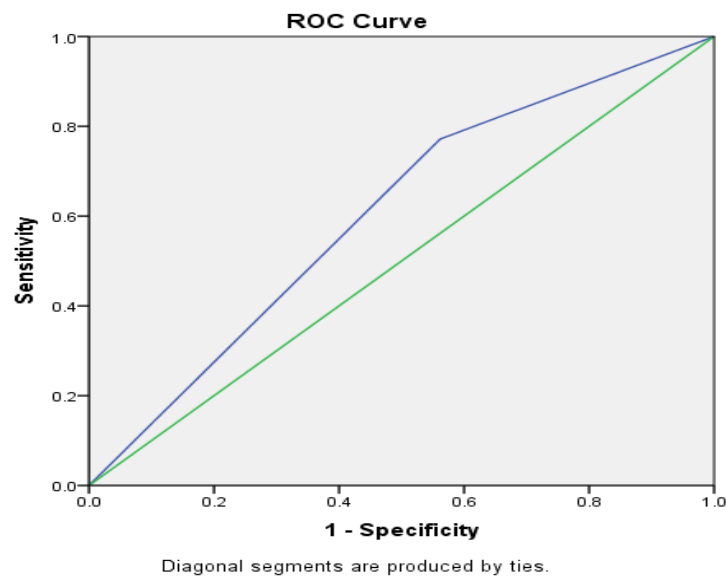


Figure 1: ROC sensitivity specificity and cut-off points for Social-emotional competence scale

The Receiver Operating Characteristic (ROC) analysis, the area under the curve (AUC) provides a measure of the discriminative ability of a diagnostic test or assessment tool (Akhtar & Khan, 2021). In this study, the results indicate that the Social-emotional

competence Scale demonstrated a strong discriminative ability with an AUC value of 0.68 showed appropriateness for scale. This suggests that the Urdu version of Social-emotional competence Scale is effective tool for adolescent's use.

Table 4

Table 4: Test Results of variables in SECS Urdu version

| Area | SE | AsySig. (b) | 95% CI LB | 95% CI UB |
|-------|-------|-------------|-----------|-----------|
| 0.605 | 0.032 | 0.001 | 0.54 | 0.66 |

The test result variable(s): Urdu SECS has at least one tie between the positive actual state group and the negative actual state group.

Table5: Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity SECS

| KMO | Bartlett's Test of Sphericity | | |
|-----------------------------------|-------------------------------|----|------|
| | Chi-Square | Df | Sig. |
| Social-emotional competence Scale | 0.926 | 1 | .000 |

Note: ** P<.01

Exploratory Factor Analysis loading for SECS

In order to determine whether the factor loading is acceptable, the Kaiser-Meyer-Olkin (KMO) index is first used to assess the sample adequacy and sphericity statistics examine whether the correlation among the variables is too low (Tabachnick & Fidell, 2013). The KMO measure is sufficient if it is less than 0.5 and should be larger than 0.7. The analysis of the gathered data revealed a highly significant KMO 0.92, indicating adequate sampling.

DISCUSSION

The findings of current study provide strong evidence supporting the psychometric properties of the Urdu version of the Social-Emotional Competence Scale (SECS). The results indicate that the translated version maintains linguistic equivalence with the original English version, as demonstrated by significant inter-item correlations. These findings align with previous research emphasizing the importance of linguistic and cultural adaptation in psychological assessments to ensure construct validity (Hambleton et al., 2005).

The reliability analysis revealed high internal consistency, with an overall Cronbach's alpha of 0.96, supporting the scale's strength. Subscale-level reliability coefficients ranged from 0.51 to 0.72, which are within acceptable limits for psychological measures (Nunnally & Bernstein, 1994). This aligns with previous research on social-emotional competence measures, where internal consistency values above 0.70 are considered reliable for applied psychological assessments (Denham et al., 2003). The split-half reliability results further confirm the scale's stability, with strong correlations between test halves

and high Spearman-Brown and Gutman Split-Half Coefficients. These findings support the scale's consistency across different administrations (Schmitt, 1996).

Furthermore, the ROC analysis demonstrated an AUC value of 0.68, indicating that the Urdu version of SECS has a moderate ability to discriminate between varying levels of social-emotional competence. This level of discriminative power suggests that the scale is effective for use in adolescent assessments, aligning with previous studies on the application of ROC analysis in psychological and educational measurements (Fawcett, 2006 & Swets, 1988).

The factor structure was supported by Exploratory Factor Analysis (EFA), with a KMO value of 0.926, indicating excellent sample adequacy, and a highly significant Bartlett's Test of Sphericity ($p < 0.01$), confirming the suitability of the data for factor extraction. These results align with previous psychometric studies suggesting that KMO values above 0.90 indicate outstanding factorability (Kaiser, 1974; Tabachnick & Fidell, 2013). The findings also support the multidimensional nature of social-emotional competence, consistent with theoretical models emphasizing distinct but interrelated competencies such as self-awareness, self-management, and relationship management (CASEL, 2005).

Overall, these findings provide strong evidence that the Urdu version of SECS is a valid and reliable tool for assessing social-emotional competence in adolescents. Future research should focus on confirmatory factor analysis (CFA) to further establish construct validity and investigate the scale's predictive

validity in diverse cultural and educational settings. Additionally, cross-cultural comparisons with other validated versions could provide deeper insights into the universality and cultural sensitivity of social-emotional competence constructs (Masten & Coatsworth, 1998).

Implementations

Current adapted version of SECS would be helpful and can be used with different backgrounds adolescents in Pakistan. The translated version of the scale helps individuals understand social-emotional competence and distinguishes adolescents based on their social-emotional skill levels. The results will provide valuable insights, along with recommendations on how to apply the scale across different cultures and in relation to other variables in Pakistan. Future researchers will also be able to continuously evaluate the scale's reliability and effectiveness over time.

Limitations and strengths

One potential limitation of adapting the Social-Emotional Competence Scale (SECS) for use in Pakistan might face challenge of ensuring cultural equivalence and linguistic accuracy during the translation and adaptation process. Despite efforts to capture the cultural nuances and context-specific relevance, certain aspects of social-emotional competence may not be fully acceptable across cultures, potentially leading to discrepancies in interpretation or measurement. However, a significant strength of this study lies in its potential to address the need for culturally sensitive and contextually relevant measures of social-emotional competence in Pakistan. By adapting the SECS, researchers can facilitate a deeper understanding of social-emotional development within the Pakistani context, thereby enhancing the assessment and promotion of these crucial skills in diverse cultural settings. Moreover, adapted version SECS, paving the way for its effective utilization in research, clinical practice, and educational settings and fostering social-emotional well-being in Pakistan.

Conclusion

Researchers in Pakistan tried to investigate social-emotional competence within their population for

various academic, educational and clinical, purposes. Having validated and adapted tool allows for meaningful research that can contribute to the understanding of social-emotional development and its implications in Pakistani society. To address this issue and fill the gap, the current study, provides, validated version of SECS for adolescents between the ages of 11 and 19 in Urdu, the national language of Pakistan. First, the "single group bilingual design" was used to strictly follow the forward and backward translation procedures. Next, a team of psychology experts identified the variations in the scale's statements based on Pakistani culture. Careful content comprehensions were also analyzed. According to the Pakistani version of SECS's appropriate estimations of reliability; it can be regarded as a helpful tool for evaluating and serves as a foundation for the creation of scales that assess social-emotional competence in children and adolescents in Pakistan.

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