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Development and Initial Validation of the Social-Emotional Skills Questionnaire (SESQ): An Exploratory Factor Analysis Among University Students

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Abstract

Social-emotional skills (SES) are practical life skills, including intrapersonal, interpersonal, and performance-based abilities, that are crucial to an individual's overall development. In higher education, students are required to attain life skills to become refined citizens. Social-emotional skills hold significant value from this perspective. This study accounts for development and initial psychometric validation of the Social-Emotional Skills Questionnaire (SESQ) for university students in Pakistan. The instrument was originally comprised of 47 items sifted from a pool of 93 items. After refinement, however, followed by item analysis, 26-item version was retained. Data were collected from 211 university students. Exploratory Factor Analysis (EFA), using Principal Component extraction with oblique Promax rotation ($\kappa = 4$), was conducted. Sampling adequacy was confirmed (Kaiser-Meyer-Olkin = .885), and Bartlett's Test of Sphericity was significant, $\chi^2(325) = 1813.97$, $p < .001$. A five-factor solution emerged as a result of Exploratory factor analysis, explaining 52.10% of total variance: factors or sub-scales were specifying as; 1. Relationship Skills and Responsible Decision-Making, 2. Self-Awareness, 3. Self-Management, 4. Decision-Making Under Pressure, and 5. Self-Reflection. Internal consistency reliability (Cronbach's alpha) ranged from .55 to .84 across subscales, with an overall alpha of .90. Findings provide initial evidence supporting the construct validity and reliability of the SESQ as a multidimensional measure of social-emotional skills among university students. Confirmatory factor analysis on an independent sample is recommended as a subsequent phase of validation.

Keywords: Social-emotional Skills, Instrument Development, Exploratory Factor Analysis, University Students, Self-awareness, Self-management, Social-awareness, Relationship Skills, Responsible Decision-making.

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Introduction

Social-emotional skills (SES) are practical life skills, including intrapersonal, interpersonal, and performance-based abilities, that are crucial to an individual's overall development. When incorporated into academic activities, they influence lifelong attitudes, values, behavioral patterns, self-esteem, resilience, and a well-rounded perspective on life (Zulfqar, Syed, and Latif, 2019).

It enables individuals to understand and manage emotions, regulate feelings, build balanced relationships, make meaningful life decisions and plays a central role in holistic development across the lifespan (Weissberg, Durlak, Domitrovich, & Gullotta, 2015). The Collaborative for Academic, Social, and Emotional Learning (CASEL) proposed the framework of five interrelated domains: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2020). It is a widely recognized framework among numerous available theoretical models for its balanced focus on all dimensions of the skills and competencies. It provides a more comprehensive and integrated perspective compared with age-specific or personality-based models. (Li & Liu, 2026). The higher education period is highly challenging for students, with demands of increased autonomy, maintaining self-discipline, high academic pressures, interpersonal relationships, and complex decision-making. The comprehensiveness of the CASEL model made it suitable for developing a new measurement scale for higher education with this much diversity (Li and Liu, 2026).

In Pakistan, there is a very limited number of locally developed instruments on social-emotional skills for university students. Foreign-adopted scales and instruments without adequate validity checks for local culture and educational realities often lead to compromised results. This gap motivated the development of the Social-Emotional Skills Questionnaire (SESQ), a self-report questionnaire based on a framework of five skills and competencies provided by CASEL.

This study aimed at the development of the Social-Emotional Skills Questionnaire (SESQ) for university students. It covers two main objectives: first, to establish an item pool to evaluate whether the questionnaire replicates the five-factor structure proposed by CASEL. Second, to assess the reliability and establish construct validity using exploratory factor analysis (EFA) of the respective instrument after administration.

The present study reports the exploratory factor analysis (EFA) results generated during the initial validation of the SESQ.

Literature Review

Social-emotional competence, the construct, grew from two roots: first, the emotional intelligence theory presented by Mayer and Salovey (1997), defined as the capacity to understand individuals' personal and others' emotions and feelings. Discriminate them and use this information to balance thinking and actions. This perspective views emotional intelligence as a real collection of cognitive-emotional skills like perceiving, using, understanding, and managing emotions rather than just a static personality trait. This approach is the direct predecessor to tools like the Trait Meta-Mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995).

Second is the Social and Emotional Learning (SEL) theory by the Collaborative for Academic, Social, and Emotional Learning (CASEL) defined SEL as the process of acquiring the knowledge, skills, and attitudes needed to develop strong personality, regulate emotions, attain personal and shared goals, feel and express compassion, maintain sympathetic relationships, and make responsible decisions. Durlak, Domitrovich, Weissberg, and Gullotta (2015) underpinned this

comprehensive definition into a set of five interrelated competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making.

CASEL (2020) framework is a more education-oriented model and proposes models of development within academic settings. Durlak, Weissberg, Dymnicki, Taylor, and Schellinger (2011) reported a large-scale meta-analysis of 213 school-based SEL programs, covering over 270,000 students. Research has demonstrated that interventions aimed at enhancing these competencies lead to significant improvements in social and emotional skills, attitudes, and behaviors. This evidence not only provides robust support for the framework but also solidifies its position as the leading applied model in the field. showed that interventions targeting these competencies produced measurable gains in social and emotional skills, attitudes, and behavior, advancing the framework strong empirical support and strengthening its status as the dominant applied model in the field

There are several instruments available based on both of these models. As mentioned earlier, the CASEL framework and interventions mostly cover school-level activities. However, there is a need at the university level to assess students' social-emotional skills. Most available instruments assess social competencies and emotional competencies separately: for example, the Social Skills Rating System (Gresham & Elliott, 1993) evaluates social behaviors such as cooperation, empathy, and self-control, while instruments such as the TMMS-24 and TAS-20 assess emotional attention, clarity, and repair, or alexithymia, without addressing social functioning. Many researchers in the world are working on the development of social-emotional skills questionnaires and scales at the university level. In Pakistan, the CASEL-based Social-Emotional Competence Questionnaire originally developed by Zhou and Ee (2012) has been translated into Urdu and validated for use with school-going adolescents, confirming a five-factor structure consistent with the original English version (Jabeen & Maqsood, 2023). However, no comparable psychometrically validated instrument currently exists for university-level students in Pakistan, representing a gap the present study aims to address.

Methodology

Research Design

The study used a quantitative, cross-sectional survey approach, grounded in a positivist research framework, which aligns with the typical methods employed in developing psychometric tools. (Tabachnick & Fidell, 2019).

Participants

Data were collected from 211 university students from three districts of Punjab (Gujranwala, Lahore, and Gujrat) using Google Forms. A purposive sampling technique was used to select the study sample. Students were selected from different classes offered in different groups: science, humanities, and computer science subjects. Data were collected from two public and one private institution. Participants were enrolled university students from BS to PhD on campus, and the demographic composition was an age range between 20 and 35. The gender ratio was 57% female and 43% male participants.

Instrument

The Social-Emotional Skills Questionnaire (SESQ) development was started with the generation of a pool of items after a thorough literature review, consisting of 93 items rooted in the key competencies of the CASEL framework, which includes self-awareness, self-management, social

awareness/relationship skills, and responsible decision-making. It also included questions about making decisions under pressure. At the second stage, items were narrowed from 93 to 47 after interviews with 10 university students, 8 at the BS level and 2 at the MPhil level. This instrument was initially administered as a 47-item self-report tool. Participants rated each item on a 5-point Likert-type scale, where 1 meant "unlikely" and 5 meant "absolutely yes". After conducting an initial exploratory analysis of all 47 items, it was found that some items had weak ($< .32$) or inconsistent loadings, including some reverse-worded items that didn't perform well. As a result, these items were eliminated in the first round of data refinement to a new version consisting of 26 items; Cronbach's alpha and exploratory factor analysis (EFA) details are given below.

Procedure

Data was collected through online Google survey forms. Informed consent was given at the start of the form, and willingness to participate was verified prior to collecting responses.

Data Analysis

Data were analyzed using IBM SPSS Statistics (Version 25). Prior to extraction, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were examined to confirm the suitability of the correlation matrix for factor analysis. Principal Component (PC) extraction was used, and given the theoretical expectation that social-emotional competencies are intercorrelated, an oblique Promax rotation ($\kappa = 4$) was applied (Costello & Osborne, 2005; Field, 2018). The number of factors to retain was fixed at five, consistent with the five core competency domains posited by the CASEL framework. Internal consistency of subscales was measured using Cronbach's alpha.

Results

Sampling Adequacy

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .885, which is sufficiently above the prescribed threshold value of .60 and comfortably sits in a commendable range (Kaiser, 1974). Moreover, Bartlett's Test of Sphericity showed a highly significant result, $\chi^2(325) = 1813.97$, $p < .001$, indicating that the correlation matrix is significantly different from an identity matrix and making it appropriate for factor analysis.

Factor Extraction

Principal component extraction was performed using a fixed five-factor solution, followed by an oblique Promax rotation on the 26-item SESQ. In Table 1, the initial and extraction communalities for each item are given. The extraction communalities varied from .29 for Item 38 to .72 for Item 47, suggesting that the five-factor solution acquired an appropriate value of variance in most of the items.

Table 1: Communalities

Item	Initial	Extraction
Item 02	1.000	0.575
Item 03	1.000	0.624
Item 04	1.000	0.630
Item 06	1.000	0.455
Item 07	1.000	0.575
Item 08	1.000	0.583
Item 09	1.000	0.475
Item 11	1.000	0.458
Item 14	1.000	0.522
Item 15	1.000	0.598
Item 17	1.000	0.510
Item 21	1.000	0.383
Item 29	1.000	0.544
Item 32	1.000	0.553
Item 33	1.000	0.404
Item 36	1.000	0.518
Item 39	1.000	0.479
Item 40	1.000	0.504
Item 41	1.000	0.526
Item 42	1.000	0.621
Item 43	1.000	0.374
Item 44	1.000	0.544
Item 46	1.000	0.664
Item 31	1.000	0.423
Item 38	1.000	0.286
Item 47	1.000	0.717

Table 2 shows the initial eigenvalues along with the sums of square loadings from both extraction and rotation. The five factors that were extracted had eigenvalues of 7.83, 1.66, 1.63, 1.34, and 1.08, which together explain 52.10% of the total variance.

Table 2: Total Variance Explained

Component	Total	% Var.	Cum. %	Extr. Total	Extr. % Var.	Extr. Cum. %	Rot. Total
1	7.827	30.10%	30.10%	7.827	30.10%	30.10%	5.936
2	1.664	6.40%	36.50%	1.664	6.40%	36.50%	5.507
3	1.630	6.27%	42.77%	1.630	6.27%	42.77%	4.963
4	1.342	5.16%	47.93%	1.342	5.16%	47.93%	3.768
5	1.082	4.16%	52.10%	1.082	4.16%	52.10%	2.544
6	1.042	4.01%	56.10%				
7	0.941	3.62%	59.72%				
8	0.864	3.32%	63.05%				
9	0.848	3.26%	66.31%				
10	0.797	3.07%	69.37%				
11	0.756	2.91%	72.28%				
12	0.696	2.67%	74.96%				
13	0.682	2.62%	77.58%				
14	0.658	2.53%	80.11%				
15	0.631	2.43%	82.54%				
16	0.568	2.19%	84.72%				
17	0.548	2.11%	86.83%				
18	0.529	2.04%	88.87%				
19	0.447	1.72%	90.59%				
20	0.422	1.62%	92.21%				
21	0.405	1.56%	93.77%				
22	0.383	1.47%	95.24%				
23	0.372	1.43%	96.67%				
24	0.310	1.19%	97.86%				
25	0.294	1.13%	98.99%				
26	0.262	1.01%	100.00%				

Note: Principal Component Analysis was used as the extraction method, and Promax with Kaiser Normalization for rotation. When it comes to oblique rotation, only the “Total” sum of squared loadings for the rotated solution is reported. As percentages of variance and cumulative percentages lose their significance once we allow the factors to correlate.

Table 3: Rotated Pattern Matrix (Promax, $\kappa = 4$)

Item	Loading	Communality
Factor I: Relationship Skills and Responsible Decision-Making		
Item 29 – I am a good listener	0.816	0.544
Item 31 – I can calmly listen and understand others' perspectives even if I don't like their point of view	0.747	0.423
Item 36 – I offer help to others when they need it	0.719	0.518
Item 42 – I take full responsibility for my decisions even if their consequences get worse	0.703	0.621
Item 44 – I usually consider the impact of my decisions on my family, friends and society	0.591	0.544
Item 32 – I recognize and acknowledge the strengths of my fellows	0.531	0.553
Item 41 – I can understand the potential consequences of my decisions	0.496	0.526
Item 21 – Others often consult me when they need advice	0.413	0.383
Factor II: Self-Awareness		
Item 04 – I understand the reasons behind my emotions	0.761	0.630
Item 03 – I can identify and name my emotions	0.685	0.624
Item 02 – I know what my strengths are	0.536	0.575
Item 33 – I maintain my personal space in my relationships	0.316	0.404
Factor III: Self-Management		
Item 14 – I can maintain my focus with multiple distractions	0.883	0.522
Item 15 – I can manage my time efficiently between academic and personal responsibilities	0.812	0.598
Item 17 – I can easily handle if circumstances are changed in my planned schedule	0.674	0.510
Item 40 – Before decision-making, I often discuss my concerns with a more experienced person	0.625	0.504
Item 39 – I gather information and evaluate my options before making important decisions	0.462	0.479
Item 38 – I feel comfortable collaborating with others on group projects	0.434	0.286
Item 43 – I can foresee the long-term effects of my decisions	0.422	0.374
Factor IV: Decision-Making Under Pressure		
Item 47 – It's really hard for me to make quick decisions in an emergency (R)	0.870	0.717

Item 46 – I don't make impulsive decisions even in emergencies	0.719	0.664
Factor V: Self-Reflection		
Item 09 – I have a habit of rethinking my regular deeds	0.675	0.475
Item 07 – I know the situations in which I unnecessarily got emotional	0.657	0.575
Item 08 – I know how my strengths contribute to my achievements	0.621	0.583
Item 06 – I tried to overcome my weaknesses	0.531	0.455
Item 11 – I often learn from my past experiences	0.479	0.458

Note. Loadings below .30 suppressed for clarity, consistent with Promax rotation output with full items wording.

Table 4: *Factor Correlation Matrix*

Factor	I	II	III	IV	V
I	1.000	0.500	0.483	0.347	0.295
II	0.500	1.000	0.489	0.369	0.332
III	0.483	0.489	1.000	0.372	0.215
IV	0.347	0.369	0.372	1.000	0.187
V	0.295	0.332	0.215	0.187	1.000

Note. All inter-factor correlations were positive and ranged from .19 to .50, supporting the appropriateness of oblique rotation solution.

Table 5: *Internal Consistency Reliability of SESQ Subscales*

Subscale	No. of Items	Cronbach's α
Factor I: Relationship Skills and Responsible Decision-Making	8	0.838
Factor II: Self-Awareness	4	0.691
Factor III: Self-Management	7	0.777
Factor IV: Decision-Making Under Pressure	2	0.550
Factor V: Self-Reflection	5	0.703
Overall Scale (26 items)	26	0.900

Note. Factor IV (Decision-Making Under Pressure) comprises only two items, which limits its internal consistency estimate; expansion of this subscale is recommended in future revisions of the SESQ.

Discussion

The exploratory factor analysis revealed some initial insights, suggesting a five-factor solution behind the 26-item SESQ. This finding aligns well with the CASEL framework of social-emotional competencies (CASEL, 2020; Weissberg et al., 2015), while also adding a new layer of understanding.

Factor I, Relationship Skills and Responsible Decision-Making, bring elements like empathic listening, supporting behaviors, and acknowledging others' strengths, self-accountability of the personal choices and bearing consequences; together in one factor. Unexpectedly, while the CASEL framework views relationship skills and responsible decision-making as separate domains, our results indicate that for university students, these skills might blend into integrated capability, signifying that interpersonal sensitivity and ethical reasoning in decision-making are perceived as interconnected rather than distinct constructs. This is a strong factor with 8 items and Cronbach's $\alpha = 0.83$. Factor II, Self-Awareness, was comprised of 4 items that focus on recognizing and understanding personal emotions and strengths. Factor loading on these items showed that this construct closely reflects the self-awareness aspect of the CASEL model. Cronbach's alpha for this factor was 0.69. Factor III, Self-Management, included 7 items, with Cronbach's $\alpha = 0.77$ related to focus, time management, adaptability, and thoughtful planning before making decisions. These traits are in alignment with the traditional understanding of self-regulation and organizational skills. Factor IV, Decision-Making Under Pressure, projected as a unique, narrower factor. Comprising of just two items, this factor assesses the ability to make sound decisions in urgent or time-sensitive situations. While it is statistically distinct from the broader responsible decision-making items in Factor I, its limited scope (only two items) raises concerns about its reliability ($\alpha = .55$) and requires the need for more items to effectively measure this aspect in future modification of the instrument.

Conclusively, the factor V, emerges as self-reflection. This factor comprises of 5 items that encourage one to think meaningfully on actions and experiences. Not specifically labelled, it closely relates to self-awareness and self-management components of CASEL taxonomy. The characteristic feature of metacognition justifies its space in the instrument considering the significance of reflective learning among university students. Cronbach's $\alpha = 0.70$ for this factor.

Overall, the internal consistency for the 26-item scale was impressive ($\alpha = .90$), and four out of the five subscales showed reliable results ($\alpha = .69$ to $.84$). This gives us promising initial evidence that the SESQ effectively measures social-emotional skills in this group of university students.

Conclusion and Recommendations

This study lays the groundwork for understanding the factor structure and internal consistency of the Social-Emotional Skills Questionnaire (SESQ) among university students. Analysis found a five-factor solution: comprising relationship skills and responsible decision-making, self-awareness, self-management, decision-making under pressure, and self-reflection—that explained just over half of the total variance in responses. The reliability estimates we observed were generally acceptable to good.

As this research marks the exploratory first phase of a multi-phase validation process, there are a few limitations and suggestions for future research worth mentioning. First it is recommended to conduct Confirmatory Factor Analysis (CFA) on a separate sample to confirm the five-factor structure this study has identified. Additionally, the two-item Decision-Making Under Pressure subscale could benefit from expansion and re-evaluation in future iterations. Since this sample was taken from three universities two public and one private, replicating this study across a more diverse range of university populations in Pakistan would enhance the generalizability of our findings. Lastly, looking into convergent and discriminant validity against established measures of emotional intelligence and psychological well-being would further bolster the construct validity of the SESQ.

Despite these limitations, the SESQ stands out as a promising, contextually developed tool for assessing social-emotional skills among university students. It holds potential for use in student counseling, curriculum design, and educational policies aimed at promoting holistic student development.

Conflict of Interest

The authors showed no conflict of interest.

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