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# DEVELOPMENT AND VALIDATION OF SELF REPORT MEASURE OF GRATITUDE SCALE FOR PAKISTANI YOUTH

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**Abstract**

In today's fiercely competitive society, the expression for genuine gratitude is diminishing. The focus is on what we need rather than on what we have. Despite, gratitude being a crucial aspect of humanity, has received recognition recently. Gratitude is not merely a passing emotion rather it is a practice that can transform lives and can improve overall well-being. Gratitude plays a crucial role in the growth and development of young people as their transition from being dependent on their families in childhood to becoming independent adults who actively participate in society. Gratitude is less practiced by youth making them susceptible to many mental health problems.[1] It has been acknowledged through literature that gratitude has multiple dimensions that are not measured through a single construct in Pakistan. The purpose of the study was to develop a culturally promising, well-founded, valid, reliable and indigenous measure of Gratitude for Pakistani Youth. In the first phase, the item pool of 33 items was generated by extensive literature review, semi structured interviews and focus groups. Content Validity index (CVI) Lynn`s [2] was established on six experts rating. The total CVI calculated was 0.84 and 27 items were retained. Pilot study was conducted on *n*=40 participants on pre liminary scale to check its face validity. In the next phase Exploratory Factor Analysis *(N=370)* emerged three factors such as Gratitude towards God, Social Gratitude and Expression of Gratitude with significant internal consistency α=.92, α=.91 and α=.89. To confirm the emerged factors Confirmatory Factor Analysis (*N=534*) was run on youth sample with age range 15-24 years (*M*=19.76, *SD*=2.35) which revealed the consistent factor structure as EFA. Psychometric Properties of the SRMG were also established. Convergent validity (*N=534*) was established by using Positive Emotions Scale (r=.65, p<.01) whereas Discriminant validity(*N=534*) was established through DASS-21 (r=-.10, p<.05). [3, 4] The Test–retest reliability(*N=45)* of the Gratitude Scale was established by re administering the test after two weeks of interval (r=.80, p<.001). Finally, the 27 items Self Report Measure of Gratitude scale measuring three factors was developed. The value added by this study encourages educationists, School and college counselors, and clinicians to design better development programs to inculcate gratitude in youth.

***Keywords:*** gratitude, flourishment, youth, self-report measure

## 1. Introduction

Measurement is a core practice in social science, enabling researchers to deepen their understanding of social phenomena and human behavior through structured data collection and analysis. Utilizing measurement scales is highly effective in this pursuit.[5] Measuring gratitude in youth is important for unraveling its developmental, psychological, and social significance, informing interventions, and enhancing our understanding of its role in youth well-being and social dynamics.[6] Researchers have reported gratitude to be an integral part of flourishment in youth. During this stage, the youth idealize the societal norms and peer influences which may contribute to multiple mental health issues.[7] To maintain sustainable well-being, it is imperative to consider not only positive emotions such as pleasure, gratitude, and resilience but also to effectively handle and navigate life's negative and challenging emotions.[8]

Based on Fredrickson's [9] broaden and build theory**,** negative emotions narrow our focus and limit our engagement in physical activities. The theory highlights that positive emotions trigger wide-ranging cognitive and behavioral responses, enhancing individuals' lasting resources across physical, intellectual, and social aspects. These feelings of positive emotions can enhance well-being and personal growth in times of adversity.[10] In line with the current research, gratitude is a positive emotion that, when experienced positivity it enhances well-being and builds resilience. Further**,** the moral affect theory explains the concept that emotions felt from moral affect are a stimulant and a consequence of moral behavior. It has been supported by McCullough et al. [11] explain that gratitude serves three functions; as a moral reinforcer, a moral motive, and a moral barometer. As a moral barometer, gratitude helps measure the degree of benefit received from others or moral entities, thus enhancing receiver's well-being. Gratitude typically arises when individuals recognize significant benefits, efforts, and sacrifices made on their behalf, manifestation of a genuine appreciation, rather than just reciprocal exchanges in relationships.

Most of the measures of gratitude have been developed in the West like The Gratitude Scale which was criticized as being too abstract and difficult to be understood by the youth.[11] Further, the GRAT scale by Thomas and Watkins [12] only consisted of three factors which were simple appreciation, lack of sense of deprivation, and appreciation of others. In contrast, gratitude as a construct is defined beyond these measures encompassing behavioral, cognitive, and affective components.[13] The 12-dimensional scale by Wood et al. [14] is available and commonly used in literature. Similarly, many scales have been developed in the East such as the positive emotion scale in which positive emotions have been measured along with the religious dimension of gratitude.[3] The religious gratitude scale also encompasses the concept of religion and thankfulness without referencing any Islamic scriptures.[15] The Gratitude Scale covers various aspects in life, world and others but fails to address its cultural expressions.[16] Although these scales have been developed for different groups and demonstrate adequate performance in various dimensions, they lack in terms of validity and psychometric properties across diverse cultural groups. The literature review points out the need for a more culturally relevant tool to avoid misidentification of behaviors that could lead to psychopathologies.

Based on the aforementioned perspective this is a significant empirical attempt to develop a scale in Pakistan that is multi-dimensional and culturally relevant. According to Buja et al. [17], a multidimensional scale has more precision as it maps the relative location of the object depicting how variables are similar and differ across individuals. This sort of assessment measure is more effective and comprehensive in research use. [18, 19] The scale highlights the importance of incorporating cultural nuances as the scales developed in the West fail to reflect the expression of gratitude in indigenous cultures.[20]

Therefore, this scale would serve as valuable tool for the analysts, clinical professionals, and broader community, highlighting the need for an indigenous measure. It was designed and

operationalized to assess gratitude as a dispositional trait of acknowledgment and cultural expression of self, others, and God. The developed scale is a single comprehensive measure that the intensity, frequency and duration of gratitude among Pakistani youth, particularly in an era of relentless pursuit of material possessions that leads to constant self-comparison and a heightened risk of mental health issues. Developed in Urdu, the scale is culturally relevant with the Urdu language being widely spoken and understood by over a hundred million people globally including in Pakistan and other eastern countries with Pakistani communities.[21] Lastly, this scale can function as a valuable tool for early diagnosis and interventions in terms of the development of culturally tailored counseling and therapeutic interventions.

### 1.1 Method and Methodology

The current investigation aims to advance in developing a culturally appropriate multidimensional self-report measure of Gratitude for Pakistani youth. For this purpose, the present research was a multiphase project conducted in four stages. In stage I, the concept of gratitude was conceptualized in a form that completely operationalizes the construct so that it can consistently and accurately represent the idea of the measure. A thorough investigation into the concept was conducted by reviewing the literature, engaging in focus groups, and interviewing experts to establish the foundation for drafting the initial item content. content validity index was assessed. In addition, a pilot study was conducted on 40 students from different colleges and universities in Lahore ranging between 15 and 24 years (20 males and 20 females). In stage II exploratory factor analysis (EFA) with varimax rotation was conducted to assess how variables in Gratitude Scale are clustered. In stage III, Confirmatory Factor Analysis (CFA) was run to validate the findings of EFA. The sample consisted of 534 students, whose ages ranged from 15-24 years (M=19.76, SD=2.35). The Cronbach's alpha coefficients for gratitude towards God, social gratitude, and expression of gratitude were 0.92, 0.91, and 0.89 respectively, and 0.96 for an overall gratitude scale.

During stage IV, the gratitude scale's convergent validity was established with positive correlations ($r = 0.65$) with the Positive Emotion Scale score, while discriminant validity was established with a negative correlation ($r = -0.10$) with the DASS score.

## 2. The Study and its Results

### 2.1 Stage I-Item Generation of Self Report Measure of Gratitude Scale (SRMG) for Pakistani Youth

The items generation at this stage was done by using a combination of both inductive and deductive approaches, informed by a thorough review of literature, seven semi-structured interviews with experts, and four focus groups involving youth of both genders, all with a specific emphasis on aspects relevant to Pakistani culture. While gratitude factors were largely consistent globally, this study aimed to develop an indigenous scale that was more culturally considerate. In order to achieve this goal, interviews were carried out, and insights were obtained from focus groups.

An informal semi-structured interview protocol was prepared in consultation with the supervisor and other psychology faculty. Seven semi-directed interviews were held with homogenous sampling technique was utilized to recruit experts from the researcher's social network.[20] Experts were selected from two domains which were Religious Scholars, psychologists who are in practice with gratitude therapy, and the Faculty of Psychology having expertise in Positive Psychology and Clinical Psychology. The study included religious scholars with a Ph.D. in Islamic studies or those holding positions as a Mufti, Alima, or Alim in a recognized religious university, with a minimum of 10 years of teaching experience. Simultaneously, the other experts were considered from the field of Clinical and Applied Psychology including health and positive psychology with a teaching, research, or practical experience of at least 10 years. The ethical guidelines of consent, confidentiality, and privacy were followed and the participants who agreed to participate were further interviewed based on a semi-structured interview designed to gain maximum information about the perceptions, experiences,

and expressions of gratitude in Pakistani Culture from the respondents. The participants were ensured that the interviews were successfully recorded and transcribed. The relevant themes were thoroughly reviewed and reflected.

To further explore the domain of Gratitude among the general population four focus group discussions were held with boys, girls, and a diverse group of students between the ages of 15-24 years. The participants were recruited using convenient sampling from different private and public colleges/universities of Lahore. The interviews were carried out online on Google Meet to avoid any inconvenience. Permission to audio record was taken from the participants and ethical guidelines about confidentiality, protection from harm, and the right to withdraw were ensured. In the first focus group, there were four girls' participants between the ages of 16 to 21(*M*=19.25, *SD*=2.22). The conversation went on for thirty-five to forty minutes. A second focus group was carried out with four boys ranging from 15-24 years with a (*M*= 21.50 and *SD* = 1.92). The meeting was carried out for forty minutes. A third focus group was carried out with girls between the ages of 15-24 years (*M*= 22.4, *S.D.*= 2.99). The conversation went on for one hour and thirty minutes. The discussion was quite fruitful as the participants were enthusiastic and shared their experiences. The fourth focus group comprised an equal number of boys and girls between the age of 15-24(*M*=19.75, *SD*=2.61).

The focus group was conducted for 30 minutes. Each of the focus groups comprised of four to six participants. The dropout rate of the participants in the third group was the highest as two participants dropped out right before the interview thus the two held as back up were recruited for the interview. For all focus groups, there has been one moderator. Participants in all groups were encouraged to give their perspectives and experiences of gratitude in both receptive and expressive aspects. The audio-taped records and interviews were transcribed. The above sources pooled together a list of continued 33 items. The items of the scale were written in Urdu language. A total of 33 items were assembled for confirmations from Six experts to establish content validity.

### 2.1.1 Empirical Validation through Experts

This significant phase involved finding Content Validity by approaching six experts with having minimum experience of 15 years and a maximum of 30 years in the field of Positive and Clinical Psychology. Experts were familiar with tool development in one way or another as a part of their teaching and research-based knowledge. Experts were requested to assess each item's relevance to its intended construct, as well as its clarity and readability, using a four-point Likert scale ranging from 1 (Not related) to 4 (Most highly relevant). These ratings provided by experts formed the basis for establishing the content validity index (CVI), as shown in Table 1. To calculate the item-level CVI (I-CVI), the standard practice involves dividing the number of agreements by the total number of experts. As per the criteria by Lynn [2] when there are six or more number of experts I-CVI should not be less than .78. The scale content validity (S-CVI) is calculated as
Total item CVIs/Total No. of items. The SRMG scale content validity is calculated as follows:
27.8/33=0.84

**Table 1** *Experts rating on No. of agreement and Items CVI for Self-Rated Measure of Gratitude Scale (N=6)*

| Item No | Expert 1 | Expert 2 | Expert 3 | Expert 4 | Expert 5 | Expert 6 | No. of Agreements | I-CVI |
|---|---|---|---|---|---|---|---|---|
| **1** | 3 | 3 | 4 | 4 | 4 | 3 | 6 | 6/6= **1** |
| **2** | 3 | 3 | 3 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **3** | 4 | 4 | 4 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **4** | 4 | 4 | 1 | 4 | 4 | 4 | 5 | 5/6= **0.83** |
| **5** | 4 | 4 | 2 | 4 | 4 | 3 | 5 | 5/6= **0.83** |
| **6** | 4 | 4 | 4 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **7** | 4 | 4 | 3 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **8** | 3 | 3 | 3 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **9** | 3 | 3 | 3 | 3 | 3 | 3 | 6 | 6/6= **1** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **10** | 4 | 3 | 3 | 3 | 3 | 3 | 6 | 6/6= **1** |
| **11** | 4 | 3 | 3 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **12** | 4 | 3 | 3 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **13** | 4 | 3 | 3 | 4 | 4 | 3 | 6 | 6/6= **1** |
| **14** | 4 | 4 | 3 | 4 | 4 | 3 | 6 | 6/6= **1** |
| **15** | 4 | 4 | 4 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **16** | 3 | 2 | 3 | 2 | 3 | 3 | 4 | 4/6= **0.66** |
| **17** | 3 | 2 | 4 | 4 | 4 | 3 | 5 | 5/6= **0.83** |
| **18** | 4 | 4 | 4 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **19** | 4 | 3 | 3 | 2 | 3 | 3 | 5 | 5/6= **0.83** |
| **20** | 2 | 3 | 4 | 2 | 4 | 2 | 3 | 3/6= **0.5** |
| **21** | 3 | 4 | 4 | 4 | 4 | 4 | 6 | 6/6= **1** |
| **22** | 4 | 3 | 4 | 4 | 3 | 4 | 6 | 6/6= **1** |
| **23** | 4 | 3 | 3 | 4 | 4 | 3 | 6 | 6/6= **1** |
| **24** | 3 | 4 | 3 | 2 | 4 | 3 | 6 | 6/6= **1** |
| **25** | 4 | 2 | 3 | 2 | 4 | 2 | 3 | 3/6= **0.5** |
| **26** | 3 | 3 | 3 | 4 | 2 | 3 | 5 | 5/6= **0.83** |
| **27** | 3 | 4 | 3 | 4 | 3 | 3 | 6 | 6/6= **1** |
| **28** | 3 | 3 | 3 | 4 | 3 | 3 | 6 | 6/6= **1** |
| **29** | 3 | 3 | 4 | 4 | 3 | 3 | 6 | 6/6= **1** |
| **30** | 2 | 2 | 3 | 2 | 4 | 2 | 2 | 2/6= **0.33** |
| **31** | 3 | 3 | 4 | 4 | 4 | 3 | 6 | 6/6= **1** |
| **32** | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0/6= **0** |
| **33** | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0/6= **0** |

*Note*. CVI = .78 or above are considered; the highlighted items were removed. Total number of items = 27.8/33 = .84. Following Lynn [2] criteria above .80 is Good

According to Waltz et al [23] & Lynn [2] score of S-CVI was .84 reflecting the scale has good and acceptable content validity.

### 2.1.2 Pilot Study

A pilot study was performed with 40 participants (20 males, 20 females) aged 15-24 years. Participants for the scale's face validity testing and understandability were selected via purposive sampling. The participants responded to the five-point Likert scale and reported no ambiguity, leading to the retention of all 27 items in the final measure.

### *2.2 Stage II-Factor Structure, Construct Validity, and Internal Consistency of the Scale*

Varimax rotation was used at this stage to carry out EFA. A purposive sampling strategy was used to select an independent sample (n=374). The sample consisted of a youth age range between 15 and 24 years (*M*=19.72, *SD*=2.48) Sample comprised of participants from diverse educational institutes 37.3% were males and 61.9% were females.

### 2.2.1 Procedure

Initially consent was taken from all research participants. Permission was taken from the institutions (schools, colleges, and universities) before the collection of the data. Participants were instructed regarding filling out the forms. The purpose and the participant confidentiality were ensured followed by acknowledging their time and cooperation.

### 2.2.3 Results:

After checking all the assumptions for Factor Analysis, 27 items of the SRMG scale were subjected to EFA. The total number of components rotated through varimax rotation were three, based on the Eigenvalues over 1 criterion, and specifically examined through a scree plot. Following the rotation, the first component accounted for 23.77% of the variance, the second component accounted for 22.65% of the variance and the third component accounted for 16.28% of the variance respectively. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was .97 and Bartlett's Test of Sphericity was significant ($p < .001$). The joint PCA solution resulted in a three-factor solution with 62.72% explained variance.

Factor 1 labelled as Gratitude towards God consisted of eight items (2, 3,4,6,7,13,17and 27) and showed higher loadings in factor 1 with 23.77 % of variance accounted. These items theoretically represent the feelings of thankfulness, appreciation, and acknowledgment directed towards God. It involves recognizing and expressing gratitude for the blessings, experiences, and aspects of life that individuals attribute to a spiritual or religious understanding. This expression of gratitude often involves a sense of appreciation for the positive elements in one's life.

Factor 2 was labeled as Social Gratitude as it included ten Items (1,19,25,8,9,10,11,14,15,16) having higher loadings in factor 2 with 22.65 % of the variance was accounted for this factor. These items represent Gratitude the feelings of appreciation, thankfulness, and acknowledgment directed specifically at individuals in their life for their positive actions, kindness, support, or contributions. It involves recognizing and expressing gratitude for the positive influence that others have on one's life, either through specific actions or ongoing support.

Factor 3 was labeled as an Expression of gratitude comprised of Nine Items (18,20,21,22, 23,24,26,05,12) loaded independently with 16.28% of the variance was accounted for this factor. These items represent the various methods or actions individuals can use to convey their feelings of thankfulness, appreciation, or acknowledgment towards God and towards someone who has positively impacted their lives.

In items of this scale reflects expression of gratitude based on the religion context such as spending quality time in religious practices (Prayers, Recitation of Holy Quran) and in context of social gratitude, item reflects gratitude by giving gifts, verbal expression and acts of kindness. This factor is distinctive characteristic of this scale which depicts different types of cultural expression of gratitude in Pakistani Youth.

**Table 2.** *Factor Loadings of 27 items of SRMG (N= 370)*

| | Items | Components | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| 1. | Item no. 18 | -.087 | .473 | **.639** |
| 2. | Item no. 19 | .389 | **.603** | .405 |
| 3. | Item no. 20 | .330 | **.479** | **.424** |
| 4. | Item no. 21 | .311 | .368 | **.624** |
| 5. | Item no. 22 | .393 | .356 | **.527** |
| 6. | Item no. 23 | .419 | .175 | **.689** |
| 7. | Item no. 24 | .408 | **.461** | **.416** |
| 8. | Item no. 25 | .407 | **.537** | .381 |
| 9. | Item no. 26 | **.476** | .342 | **.403** |
| 10. | Item no. 27 | **.644** | .396 | .259 |
| 11. | Item no. 1 | .450 | **.564** | .059 |
| 12. | Item no. 2 | **.623** | .462 | .262 |
| 13. | Item no. 3 | **.759** | .420 | .146 |
| 14. | Item no. 4 | **.733** | .277 | .326 |
| 15. | Item no. 5 | .457 | .094 | **.686** |
| 16. | Item no. 6 | **.680** | .256 | .442 |
| 17. | Item no. 7 | **.703** | .259 | .387 |
| 18. | Item no. 8 | .387 | **.463** | .407 |
| 19. | Item no. 9 | .472 | **.654** | .265 |
| 20. | Item no. 10 | .342 | **.675** | .231 |
| 21. | Item no. 11 | .362 | **.656** | .296 |
| 22. | Item no. 12 | .237 | **.512** | **.496** |
| 23. | Item no. 13 | **.595** | .344 | .183 |

| | | | | |
|---|---|---|---|---|
| 24. | Item no. 14 | .268 | **.652** | .241 |
| 25. | Item no. 15 | .536 | **.585** | .241 |
| 26. | Item no. 16 | .277 | **.691** | .302 |
| 27. | Item no. 17 | **.644** | .391 | .280 |

*Note: Factor loadings > .4 are given in bold phase against pertinent factors. Principal component analysis with a varimax rotation method was used.*

**Table 2** shows the maximum loadings on the second factor and equal loadings emerged on the first factor and third factor. Dual or multiple loadings were found in the second factor and third factor for item number 12, item number 20, item number 24, and item number 26 So, based on conceptual understanding these items were considered in the third factor. Given that all items assess the same construct, they are inherently interrelated. When interpreting the structure, emphasis was placed on higher loadings, construct relevance, and conceptual differentiation. The self-report measure of gratitude comprised of 27 items in total with three factors retained. Kaiser [24] criterion was used to retain factors.

**Table 3** Inter-correlations among the Sub-scales and Scale (*N* = 370).

| *Factors* | *1* | *2* | *3* | *4* |
|---|---|---|---|---|
| *1- Gratitude Towards God* | - | *.85*** | *.84*** | *.94*** |
| *2- Social Gratitude* | - | - | *86*** | *.95*** |
| *3- Expression of Gratitude* | - | - | - | *95*** |
| *4- Overall Gratitude* | - | - | - | - |

Note: **p < .001.

The results in Table 3 indicates the significant correlations between the subscales and over all Gratitude scale. However, all three subscales Gratitude towards God, Social Gratitude, and Expression of Gratitude are significantly correlated with each other. Therefore, it is indicated that construct is an appropriate measure of Gratitude.

**Table 4** Reliability and variance of Final Factors with the no. of items (N = 370)

| Factors | Factor Labels | Items | % variance | α |
|---|---|---|---|---|
| 1 | Gratitude towards God | (2, 3,4,6,7,13,17,27) (8 items) | 23.77 | .92 |
| 2 | Social-Gratitude | (1,19,25,8,9,10,11,14,15,16) (10 items) | 22.65 | .91 |
| 3 | Expression of Gratitude | (18,20,21,22,23,24,26, 05,12) (9 items) | 16.28 | .89 |
| 4 | Overall Gratitude scale | 27 items | 62.72 | .96 |

Note. α = Cronbach's alpha (or Alpha Coefficient)

Table 4 highlights that a significant proportion of variance was accounted by retained three factors. The first factor Gratitude towards God accounted for 23.77% of the variance, Social Gratitude accounted for 22.65% of the variance and Expression of Gratitude accounted for 16.28% of the variance respectively.

All the factors and total scale showed reasonable internal consistency, ranging from .89 to .96. Alpha coefficient for Gratitude towards God was .92 and for social gratitude was .91 and for expression of gratitude was .89 and for overall scale was .96.

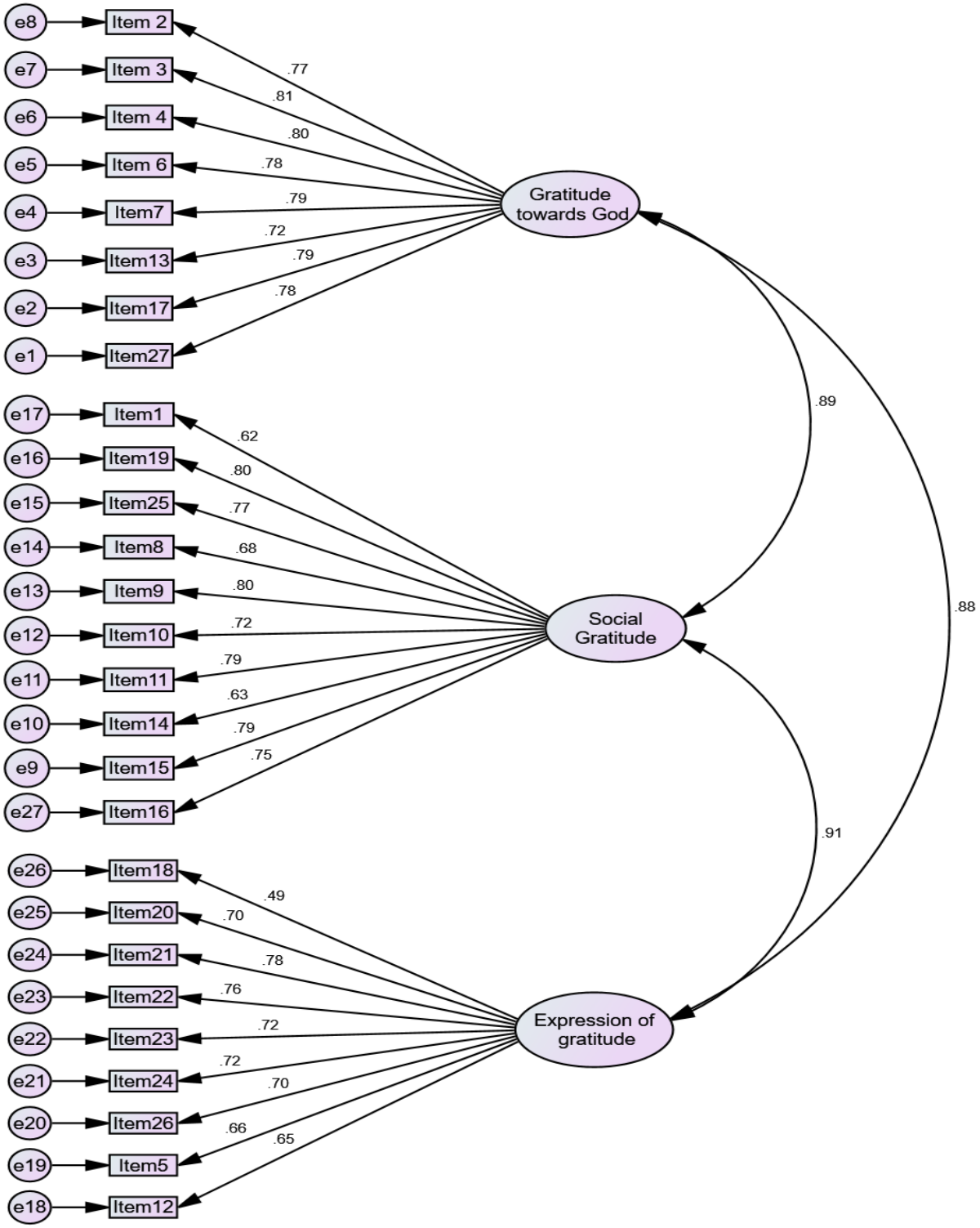


**Figure1. The final model to confirm the Factor Structure of self-report measure of Gratitude**

### *2.3 Stage III-Confirmatory Factor Analysis*

To evaluate the factor structure of 27 items of SRMG, sample of 534 participants including both men (*n*=250) and women (*n*=284) were selected through purposive sampling technique from different Government and Private diverse academic institutes of Lahore. The participants' age range was 15-24 years (*M*=19.76, *SD*=2.35). 46.8% of the sample comprised men and 53.2% of the participants comprised women. In addition, 34.4% were participants from private institutes, 46.4% were from government institutes and 19.3% were from semi-government institutes of Lahore.

### 2.3.1 Instrument

**Self-Report Measure of Gratitude (SRMG)**

The self-report measure of Gratitude developed in the Urdu language for Pakistani youth was applied to the factor structure and its dimensionality. The scale comprised of three factors; Gratitude towards God, Social Gratitude, and Expression of Gratitude.

### 2.3.3 Procedure

Participants were told about the purpose of the research. They were assured about data confidentiality. Informed consent and guidelines were provided to the participants. Participants who were willing were made part of the research. The SRMG and demographic sheet were provided to the participants. Each participant approximately took 15 minutes to fill in the questionnaire. A total of 550 forms were distributed from which 16 forms were not filled and incomplete and 534 forms were returned. Participants were thanked at the end for their cooperation and valuable time.

### 2.3.4 Results

In order to re confirm the factor structure of SRMG (which emerged in EFA) the CFA was used. To confirm the factors identified in EFA AMOS 21 was utilized. The CFA demonstrated a strong fit to the data with chi square=789, df=316, goodness of fit index (GFI)=0.90, Root mean square error of Approximation (RMSEA) =0.05, and comparative fit index (CFI)=0.95. The criteria for assessing model fit were: CFI> 0.90, GFI>0.90, and RMSEA < 0.08. Findings indicate a very good model fit.[4]

### 2.4 Stage IV -Convergent and Discriminant Validity of SRMG

This phase of the study evaluated the Convergent and Discriminant validity of self-report measures of the Gratitude Scale. The convergent and discriminant validity of the scale were established using two scales; the Positive Emotions Scale and DASS21 respectively. [3, 25] Urdu versions of both scales were used for data collection.

### 2.4.1 Sample

The data for this section of research was gathered from the previous data for CFA. The purpose of research was briefed by the researcher with the guarantee of research ethics. The willing participants were distributed the sets of questionnaires.

### 2.4.2. Material

The study utilized the following measures; The Self Report Measure of Gratitude Scale (SRMG) developed by Haroon, Khawar and Moazzam (2024), Positive Emotions Scale (PES) developed by Shamim and Muazzam [3] and the Depression Anxiety and Stress Scale (DASS 21) developed by Lovibond and Lovibond.[4]

### 2.4.3. Results

To test the hypothesis that SRMG is positively correlated with the PES and negatively correlated with DASS. The findings presented in Table 4 reveal a moderate positive correlation (r= .65, p<.01**) between Gratitude and Positive emotion scale (convergent validity). Thus, the negative correlation (r= -.10, p<.05*) exists between the indigenous Gratitude scale and DASS (discriminant validity).

**Table 4** Correlation of SRMG with Positive Emotion Scale and Depression Anxiety Stress Scale(N=534)

| Variables | 1 | 2 | 3 |
|---|---|---|---|
| **1. Gratitude** | --- | -.10* | .65** |
| **2. DASS** | | --- | |
| **3. Positive Emotion Scale** | | | --- |

*Note. DASS=Depression Anxiety Stress Scale*
***P<.01 *p<.05*

**Test-retest reliability**

| No. | Times | *RGTG* | *RSG* | *REOG* | *ROG* |
|---|---|---|---|---|---|
| 1. 6 | Gratitude towards God | .67** | | | |
| 2. 3 | Social Gratitude | . | .68** | | |
| 3. 2 | Expression of gratitude | | | .66** | |
| 4. 4 | Overall Gratitude | | | | .80** |

To assess the test–retest reliability of the Gratitude Scale and subscales which are 1) Gratitude towards God, 2) Social Gratitude 3) Expression of Gratitude and Pearson product-moment correlation coefficients (r) and intraclass correlation coefficients (ICCs) were computed using data from Time 1 (initial test) and Time 2 (retest) with two weeks of duration. The chi coefficient was calculated for the Gratitude Scale and Subscales both from Time 1 and Time 2. To calculate ICCs, a two-way mixed model analysis of variance with consistency was employed. [26, 27]

**Table 3.12***Test-retest results for each sub-scale and total of the Gratitude scale*
***Test-retest Correlations between Gratitude overall scale and subscales both from Time 1 and Time 2***

| | Scales/Sub-scales | *α* | *ICC* | *95% CI* |
|---|---|---|---|---|
| 1. 6 | Gratitude towards God | .80 | .66*** | .46 _ .80 |
| 2. 3 | Social Gratitude | .81 | .69***. | .50 _ .81 |
| 3. 2 | Expression of gratitude | .79 | .66*** | .45 _ .79 |
| 4. 4 | Overall Gratitude | .89 | .80*** | .67 _ .88 |

*Note:* RGTG: Retest score of Gratitude towards God; RSG: Retest score of Social Gratitude; REOG: Retest score of Expression of gratitude; ROG: Retest score of Overall Gratitude

The test-retest reliability based on a ICC calculation and Cronbach's Alpha for each of the three subscales (for Gratitude towards God, Social Gratitude, Expression of Gratitude) and overall scale of Gratitude is detailed in Table3.12 and all achieved good ICC reliability values as per the following criteria to interpret the test–retest reliability coefficients: ≥.90 = very high; .80 to .89 = high; .70 to .79 = adequate; .60 to .69 = marginal; ≤.59 = low. [28]

## 3. Discussion

Scales are manifestations of the latent construct as they assess attitudes, behaviors, and hypothetical scenarios that researchers anticipate based on their theoretical understanding of the world, though these constructs cannot be directly assessed.[29] As scientific knowledge evolves and new research inquiries emerge, the development of additional scales becomes essential. Hence, the purpose of this research was to formulate native and culturally sensitive tool of gratitude using a standardized set of procedures that can preserve cultural heritage along with promoting cultural continuity and pride.

The current study generated robust primary evidence for the reliability as well as the validity of the self-assessment measure of gratitude. The developed scale reflected a very sound factor structure with satisfactory discriminant and convergent properties. The items of SRMG were generated through deductive and inductive approaches and further tested through content and construct validity. Shaughnessy [30] says that the face and content validity of a scale shows how transparent it is because the items seem to show what they claim to measure. Similarly, Arias et al. [31] suggested that about the new scale's content validity that the items developed initially reflect the desired construct.

EFA using varimax rotation was used, that reflected three distinct factors having 27 items. The Alpha coefficient of overall and three factors showed high internal consistency and significant intercorrelations among factors. (see Table 3&4). To validate the EFA results across different contexts, an independent sample of (*N*= 534) was employed. The final model depicts very good fit indices (see Figure 1) having 27 items. These results all together offer a definitive, three meaningful factor structure of the SRMG scale (Gratitude towards God, Social Gratitude, and Expression of

Gratitude). These key findings shape our conceptualization, understanding and measurement of gratitude in Pakistani Youth in different ways.

The reliability of each factor was in the acceptable range of 0.70.[32,33] Moreover, the present research further highlights the discriminant and convergent validity of the SRMG. Therefore, the convergent and discriminant validity of the scale were established using two scales; the PES and DASS21 respectively. [3,4] It was proposed that the validity would be demonstrated if there is a significant positive correlation between scores on PES and SRMG, and a significant negative correlation between scores on DASS21 and SRMG. The established test re-test reliability of gratitude scale was adequate indicating that scores are consistent over time. There is no indigenous measure of gratitude for youth inclusive of an expression of gratitude subscale and thus the findings of this research highlight that gratitude is expressed differently in the context of Pakistan, underscoring its cultural significance.

**Limitations**

This research is limited to data from educational institutions solely in Punjab and increasing the sample size of the study could have increased its generalizability. Additionally, this scale was developed exclusively in consideration for gratitude in youth and other populations including children, adults or the elderly could have been taken into account for a comparative analysis.

## 4. Conclusion and Recommendations

Given the limitations of the existing gratitude scales, this research aimed to develop an indigenous scale on gratitude for the Pakistani Youth. This scale is a culturally promising and valid tool for fostering gratitude, helping the clinicians as well as counselors to tailor effective interventions to promote well-being along with alleviating psychological burden. Moreover, determining the psychometric properties of the scale can give directions to the current dimensions that have been incorporated and be used in future research to identify trait gratitude. The norms of the scale can be established among clinical and non-clinical samples. By incorporating the scale practice in daily life youth can develop a more grateful mindset for promoting well-being, life satisfaction and strong social connections. The present research is also beneficial in terms of creating a positive youth development program where parents, teachers, coaches and other relevant parties can foster gratitude in the children from an early age.

## References

1. Chopik WJ, Newton NJ, Ryan LH, Kashdan TB, Jarden AJ. Gratitude across the life span: Age differences and links to subjective well-being. The Journal of Positive Psychology. 2017 Dec 15;14(3):292–302.
2. Lynn MR. Determination and Quantification of Content Validity. Nursing Research. 1986 Nov;35(6):382–6.
3. Shamim A, Muazzam A. Positive Emotions Scale: Construct Development and Validation. Pakistan Journal of Psychological Research. 2020 Sep 11;35(3):429–54.
4. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. Behavior Research and Therapy [Internet]. 1995;33(3):335–43. Available from: https://pubmed.ncbi.nlm.nih.gov/7726811/
5. Liu L, Jones BF, Uzzi B, Wang D. Data, measurement and empirical methods in the science of science. Nature Human Behavior [Internet]. 2023 Jun 1;1–13. Available from: https://www.nature.com/articles/s41562-023-01562-4
6. Froh JJ, Fan J, Emmons RA, Bono G, Huebner ES, Watkins P. Measuring gratitude in youth: Assessing the psychometric properties of adult gratitude scales in children and adolescents. Psychological Assessment. 2011;23(2):311–24.

7. Senf K, Liau AK. The Effects of Positive Interventions on Happiness and Depressive Symptoms, with an Examination of Personality as a Moderator. Journal of Happiness Studies. 2012 May 20;14(2):591–612.
8. Gärling T, Jansson M. Sustainable Investment: Consequences for Psychological Well-Being. Sustainability. 2021 Aug 18;13(16):9256.
9. Fredrickson BL. The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. American Psychologist. 2001;56(3):218–26.
10. McCullough ME, Kilpatrick SD, Emmons RA, Larson DB. Is gratitude a moral affect? Psychological Bulletin. 2001;127(2):249–66.
11. McCullough ME, Emmons RA, Tsang JA. The grateful disposition: A conceptual and empirical topography. Journal of Personality and Social Psychology. 2002;82(1):112–27.
12. Diessner R, Lewis G. Further Validation of the Gratitude, Resentment, and Appreciation Test (GRAT). The Journal of Social Psychology. 2007 Aug;147(4):445–7.
13. Morgan B, Gulliford L, Kristjánsson K. A new approach to measuring moral virtues: The Multi-Component Gratitude Measure. Personality and Individual Differences. 2017 Mar; 107:179–89.
14. Wood AM, Maltby J, Stewart N, Linley PA, Joseph S. A social-cognitive model of trait and state levels of gratitude. Emotion. 2008;8(2):281–90.
15. Amjad, N., Ahmad, S., & Zaidi, G. (2013). Exploring gratitude in a Muslim Pakistani context.
16. Anas MA, Husain A, Khan SM, Aijaz A. Development and Standardization of the Gratitude Scale. Journal of Educational, Health and Community Psychology. 2017 Apr 2;5(3):1.
17. Buja A, Swayne DF, Littman ML, Dean N, Hofmann H, Chen L. Data Visualization with Multidimensional Scaling. Journal of Computational and Graphical Statistics. 2008 Jun;17(2):444–72.
18. Young FW. Multidimensional Scaling. 2013.
19. Park N, Peterson C. Character Strengths and Happiness among Young Children: Content Analysis of Parental Descriptions. Journal of Happiness Studies. 2006 Sep;7(3):323–41.
20. Wang J. Culture Differences and English Teaching. English Language Teaching [Internet]. 2011 Jun 1;4(2):223. Available from: https://files.eric.ed.gov/fulltext/EJ1080734.pdf
21. BBC (2014). Languages - Urdu - A Guide to Urdu - 10 Facts About the Urdu Language. Available online at: http://www.bbc.co.uk/languages/other/urdu/ guide/facts.shtml.
22. Qualitative research: introduction, sampling and approaches - Part II - Lynn Gertiser [Internet]. Gfmer.ch. 2014 [cited 2024 Aug 27]. Available from: https://www.gfmer.ch/SRH-Course-2013/Geneva-Workshop/Qualitative-research-2-Gertiser-2014.htm
23. Waltz CF, Strickland OL, Lenz ER. Measurement in Nursing and Health Research. 2016 Jul 1;
24. Kaiser HF. The Application of Electronic Computers to Factor Analysis. Educational and Psychological Measurement. 1960 Apr;20(1):141–51.
25. Norm O'rourke, Hatcher L. a Step-By-Step Approach to Using SAS for Factor Analysis and Structural Equation Modeling, Second Edition. 2013.
26. McGraw KO, Wong SP. Forming inferences about some intraclass correlation coefficients. Psychological Methods. 1996;1(1):30–46.
27. Weir JP. Quantifying Test-Retest Reliability Using the Intraclass Correlation Coefficient and the SEM. The Journal of Strength and Conditioning Research [Internet]. 2005;19(1):231. Available from: https://pdfs.semanticscholar.org/d99a/790cce43f7f20d742f9d379b79de4f767740.pdf
28. Slick D. Psychometrics in neuropsychological assessment. In: Strauss E, Sherman E, Spreen O, editors. A compendium of neuropsychological tests. 3rd ed. New York, NY: Oxford University Press; 2006. p. 1–43.
29. Wu B. Analysis of a Large-Scale Cold Air Weather Process in China during January 2021. Journal of Geoscience and Environment Protection. 2023 Jan 1;11(09):54–63.
30. Shaughnessy JJ, Zechmeister EB, Zechmeister JS. Research methods in psychology. Boston; London: Mcgraw-Hill Higher Education; 2009.

31. Arias, M. R. M., Lloreda, M. J. H., & Lloreda, M. V. H. (2014). Psicometría. S.A.: Alianza Editorial.
32. Nunnally JC. Psychometric theory. 2nd ed. New York: Mcgraw-Hill; 1978.
33. Colombo L, Chiara Ghislieri. The work-to-family conflict: Theories and measures. 2008 Jan 1;15(1):35–55.