

Psychometric Properties of the Urdu Translation of Problem-Solving Style Scale

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Abstract

Problem Solving is an art of identifying a problem, thinking of an ideal solution and then taking the appropriate action thus this skill is one of the necessities of life. Long and Cassidy developed the scale of Problem-Solving Styles initially with five subscales and later added two more dimensions (Cassidy & Long, 1996). Problem Solving Style Questionnaire has originally been developed in English language with 28 items, 4 items in each subscale. Despite the importance of problem-solving skill, it has not been translated into any other language so this study is the first attempt to translate the scale in Urdu Language. Purposive sampling was used to get the sample of 205 Pakistani married couples and the findings showed good reliability of subscales and confirmatory factors. In the evaluation of the instrument, it showed up to be an accurate measure to measure problem solving dimensions.

Keywords: *Problem solving, Married couples, Urdu language, Translation.*

Introduction

The concept of problem solving is a relatively newer one. Whereas, the first model of problem-solving styles was appertaining to the concept of psychological functions (Jung, 1923; Ghodrati., 2014). Problem-solving style model was established having specific attention towards depression. However, it is evident that it can be applied to the stress process as a whole. The earlier work (1985-1991) stressed the use of predominantly behavioral framework on problem-solving skills. But the recent work has shifted the focus over identifying the problem-solving styles. However, slight contradiction between the concepts of problem-solving skills and problem-solving style do exist in the literature.

Billings and Moos established the framework of the idea of problem-solving style in their examination on coping styles (Billings & Moos, 1981). Cassidy and Long (1996) built up a multidimensional model of problem-solving style. Correspondingly, William James (1890) related accomplishment inspiration with mental capacity, through crafted by Henry Murray (1938) and David McClelland (McClelland, 1965; McClelland et al., 1953).

It apparently is identified with confidence (Tanwar & Sethi, 1986), wellbeing (Bryant & Veroff, 1982), emotional development (Verma, 1986), misconduct (Thilagaraj, 1984), uneasiness (Basu & Ray, 1990) and mental prosperity (Emmons & Diener;1986). Thereof, in close to home viability during emergency circumstances the significance of cognitive styles in regard to problem-solving and inspiration endeavoring rank high on the rundown of significant competitors.

An enormous number of studies bolster the utility of problem-solving intercessions. For instance, Denham and Almeida (1987) in a meta-investigation of the hypothesis and practice of problem-solving abilities intercessions with kids report a strong connection among mediations and social modification.

Malouff, et al., 2007, in a survey of the writing, infer that the methodology has been fruitful with maladjusted kids, emotionally upset young people and grown-up mental patients and propose that problem-solving abilities are prescient of effective life changes for the most part.

The in-depth examination, recommends that problem-solving style is certainly not a unitary idea. Other work by Heppner and Petersen (1982) and Heppner, Kampa and Brunning (1987) likewise distinguishes the multidimensional idea of the build. Heppner and Petersen (1982) built up a Personal Problem-solving Inventory which estimates three variables, problem-solving certainty, approach style and individual control.

They will in general discuss coping reactions, however one can see from their Coping Responses Scale (Billings & Moos, 1981) that they are in reality estimating problem-solving styles. It would show up from the research proof that problem-solving style and a scope of different factors, for example, attributional style, accomplishment inspiration, locus of control and emotional reactivity are causally ensnared in the pressure procedure.

Some research exists which has recognized an association between a portion of these factors. For instance, Dixon, Heppner and Anderson (1991) connected problem-solving style with misery and saw feelings of anxiety in the expectation of suicide ideation in understudies. Attributional style and accomplishment inspiration have been demonstrated to be connected in crafted by Weiner (1985).

According to our best knowledge, till date no attempt has been made to translate PSSS scale in Urdu language. No previous research is present which has utilized the Urdu version of PSSS. Thus, there was a dire need to translate the scale for native people. The research question was:

Does the Urdu translated scale of PSSS provide support for reliability and validity of the construct?

Method

Sample

Purposive sampling technique was used to collect 103 sample of married couples for cross language validation of PSSS and sample of 205 was collected for confirmatory factor analysis (CFA) as well as exploratory factor analysis (EFA).

Purposive sampling is a non-probability sampling option where everyone does not have the chance to be selected instead the researchers approaches only the required population as married couples in this study. The data for quantitative study was collected in three phases, first phase included sample of 103 married couples for cross language validation. In second phase, 205 sample was taken for EFA and then 205 couples for CFA.

Problem Solving Style Questionnaire (PSSQ).

The Problem Solving Style Questionnaire (PSSQ) was developed for assessing various problem solving styles by Cassidy and Long (Cassidy and Long, 1996). This scale has seven factors of problem solving styles. Which include Problem-Solving Control (items 5, 6,7,8), Helplessness (items 1,2,3,4), Creative Style (items 9, 10,11,12), Problem Solving Confidence(items 13, 14, 15, 16), Avoidance Style (items 17, 18, 19, 20), Support Seeking (items 25, 26, 27,28) and Approach Style (items 21, 22, 23, 24). Four items of the scale are reverse coded, item 5, 6, 7 and 25.

Procedure

For the research, the sample of married couples was taken through Purposive sampling. The sample of study varied by 103 participants for assessing the cross-language validity of PSSS whereas sample of 205 was collected for confirmatory factor analysis (CFA) as well as exploratory factor analysis (EFA).

The consent of the participants was taken after briefing them about the aim of the research. They were requested to be honest in the filling the forms as their data would be kept confidential. Moreover, at the beginning of the study it was announced that they have a right to quit the examination at any moment of the study if they feel like, but none of them left.

Procedure of Brislin was followed for the Urdu translation of Problem Solving Style Scale (Brislin, 1979). Three independent bilingual experts were taken, who were familiar with the both Urdu and English language.

The experts translated the scale into Urdu and then it was given to another two experts to translate it back in the original (English) language. Both versions were assessed by the committee for the equilance in meaning and evaluated how well they convey the actual meaning of English items. The most appropriate Urdu translated items of the scale were retained.

Results

Table 1: Descriptive Statistics and Alpha Reliability Coefficients of the Subscales of Urdu Version of Problem Solving Style Scale (PSSS) (N = 103)

| Variables | No. of Items | M | SD | α | Range | |
|-----------------|--------------|------|-----|----------|-----------|--------|
| | | | | | Potential | Actual |
| Helplessness | 4 | 1.97 | .68 | .72 | 4-12 | 4-12 |
| Control | 4 | 1.97 | .64 | .70 | 4-12 | 4-12 |
| Creativity | 4 | 1.75 | .64 | .71 | 4-12 | 4-12 |
| Confidence | 4 | 1.73 | .62 | .70 | 4-12 | 4-12 |
| Avoidance | 4 | 1.98 | .63 | .70 | 4-12 | 4-12 |
| Approach | 4 | 1.75 | .61 | .70 | 4-12 | 4-12 |
| Support Seeking | 4 | 2.07 | .64 | .72 | 4-12 | 4-12 |

Table shows that the Cronbach’s Alpha of each dimension under PSSS scale is greater than 0.70. Hence, reliability of the construct is satisfied.

Table 2: Correlation among Subscales of Original, forward and backward Versions of PSSS (N = 103)

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|------------|---|-------|-------|---|-------|-------|---|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|
| Help Org | 1 | .71** | .85** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Help Urdu | | 1 | .74** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Help Eng | | | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cont Org | | | | 1 | .61** | .82** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cont Urdu | | | | | 1 | .56** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cont Eng | | | | | | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Creat Org | | | | | | | 1 | .43** | .73** | - | - | - | - | - | - | - | - | - | - | - | - |
| Creat Urdu | | | | | | | | 1 | .57** | - | - | - | - | - | - | - | - | - | - | - | - |
| Creat Eng | | | | | | | | | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Confi Org | | | | | | | | | | 1 | .47** | .66** | - | - | - | - | - | - | - | - | - |
| Confi Urdu | | | | | | | | | | | 1 | .51** | - | - | - | - | - | - | - | - | - |
| Confi Eng | | | | | | | | | | | | 1 | - | - | - | - | - | - | - | - | - |
| Avoid Org | | | | | | | | | | | | | 1 | .58** | .57** | - | - | - | - | - | - |
| Avoid Urdu | | | | | | | | | | | | | | 1 | .39** | - | - | - | - | - | - |
| Avoid Eng | | | | | | | | | | | | | | | 1 | - | - | - | - | - | - |
| Appr Org | | | | | | | | | | | | | | | | 1 | .80** | .85** | - | - | - |
| Appr Urdu | | | | | | | | | | | | | | | | | 1 | .70** | - | - | - |
| Appr Eng | | | | | | | | | | | | | | | | | | 1 | - | - | - |
| SS Org | | | | | | | | | | | | | | | | | | | 1 | .49** | .62** |
| SS Urdu | | | | | | | | | | | | | | | | | | | | 1 | .36** |
| SS Eng | | | | | | | | | | | | | | | | | | | | | 1 |

Note: **p < 0.01

The result indicated a significant correlation between all the three versions of PSSS. The relationship between the Original-Urdu and Original- English was significant, moderate and high respectively; and for Urdu-English the correlation was strong.

Table 3: Item Total Correlation of Urdu Problem Solving Style Scale (PSSS) (N = 103)

| Subscales and items | R | Subscales and items | r |
|---------------------|-------|---------------------|-------|
| Helplessness | | Avoidance | |
| 1 | .51** | 17 | .48** |
| 2 | .60** | 18 | .54** |
| 3 | .51** | 19 | .43** |
| 4 | .52** | 20 | .51** |
| Control | | Approach | |
| 5 | .46** | 21 | .44** |
| 6 | .57** | 22 | .37** |
| 7 | .47** | 23 | .58** |
| 8 | .47** | 24 | .59** |
| Creativity | | Support Seeking | |
| 9 | .40** | 25 | .46** |
| 10 | .51** | 26 | .65** |
| 11 | .60** | 27 | .40** |
| 12 | .50** | 28 | .55** |
| Confidence | | | |
| 13 | .48** | | |
| 14 | .51** | | |
| 15 | .54** | | |
| 16 | .42** | | |

Note: **p < .01

Table 3 shows item to item total correlation for each element, the results highlight the existence of a highly significant positive relationship between each of the items. Through this we can underscore the internally consistent nature of the Problem Solving Style Scale (PSSS).

Table 4: Factor Loadings for Exploratory Factor Analysis with Varimax Rotation of Urdu Problem Solving Style Scale (PSSS) (N = 103)

| Item No. | Helpless- ness | Control | Creativity | Confidence | Avoidance | Approach | Support Seeking |
|---------------|-------------------|---------|------------|------------|-----------|----------|--------------------|
| 1 | .74 | | | | | | |
| 2 | .78 | | | | | | |
| 3 | .73 | | | | | | |
| 4 | .74 | | | | | | |
| 5 | | .61 | | | | | |
| 6 | | .76 | | | | | |
| 7 | | .60 | | | | | |
| 8 | | .79 | | | | | |
| 9 | | | .57 | | | | |
| 10 | | | .73 | | | | |
| 11 | | | .81 | | | | |
| 12 | | | .70 | | | | |
| 13 | | | | .66 | | | |
| 14 | | | | .66 | | | |
| 15 | | | | .77 | | | |
| 16 | | | | .64 | | | |
| 17 | | | | | .62 | | |
| 18 | | | | | .78 | | |
| 19 | | | | | .62 | | |
| 20 | | | | | .73 | | |
| 21 | | | | | | .57 | |
| 22 | | | | | | .50 | |
| 23 | | | | | | .76 | |
| 24 | | | | | | .84 | |
| 25 | | | | | | | .67 |
| 26 | | | | | | | .83 |
| 27 | | | | | | | .62 |
| 28 | | | | | | | .78 |
| Eigen Values | 3.94 | 3.04 | 2.43 | 2.21 | 1.59 | 1.41 | 1.24 |
| % of Variance | 8.31 | 8.15 | 8.13 | 8.10 | 8.03 | 7.99 | 7.90 |
| Cumulative % | 8.31 | 16.46 | 24.59 | 32.68 | 40.71 | 48.71 | 56.61 |

Note. Factor loadings > .30 are in boldface

Factor analysis is done on the data collected through a questionnaire which has 28 items about dimensions on PSSS. This analysis is performed by using Principal components analysis extraction method. The results of the factor analysis show that there are seven components which explain 56.67% of variance. It means that these seven components show the difference of one and other from mean value. As shown in the scree plot below (figure3), seven components are having the Eigen value of greater than one hence the results indicate that there are seven distinct constructs in this instrument on which factors can be loaded.

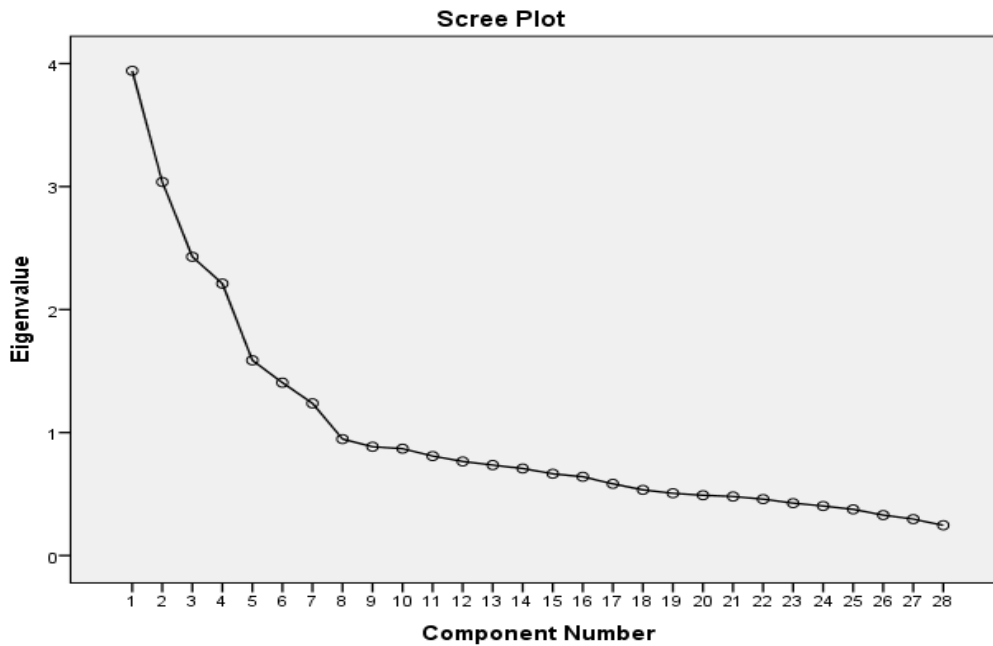


Figure 1: Scree plot for PSSS scale

Rotated Component Matrix

The exploratory factor analysis provided seven constructs for the given 28 items instruments. A rotated component matrix is obtained by using varimax rotation method whereas the extraction method is principal component analysis. According to the results for helplessness, items are bonded together on this dimension with factor loadings between 0.727 to 0.780, of control, items are loaded together on this dimension with factor loadings between 0.619 and 0.827, of creativity, items are glued together on this dimension with factor loadings between 0.640 and 0.772, of confidence, items are loaded together on this dimension with factor loadings between 0.503 and 0.838, of avoidance, items are loaded together on this dimension with factor loadings between 0.572 and 0.809, of approach, , items are loaded together on this dimension with factor loadings between 0.620 and 0.738, and of support seeking, items are loaded together on this dimension with factor loadings between 0.599 and 0.791.

CFA

In order to verify the validity of the Urdu version of PSSS a number of analyses were performed. Among others, confirmatory factor analysis using structural equation modeling (SEM) techniques were performed for factorial validity (Byrne, 2001). Furthermore, AMOS 18.0 software was used to perform the maximum likelihood estimation (MLE) method.

Table 5: Model fit indices of CFA for of Urdu Problem Solving Style Scale (PSSS) (N = 205)

| Indexes | Chi square | df | CFI | RMSEA | GFI | TLI | RMR |
|---------|------------|-----|-----|-------|-----|------|------|
| Model | 377.18 | 329 | .96 | 0.03 | .89 | .953 | .046 |

As per the seven-factor model of PSSS, this model is showing consistent behavior of being a good-fitting model. As the three parameters GFI, CFI and IFI have values close to, or higher than 0.9, and RMSEA has value 0.03, which is below the 0.08 threshold.

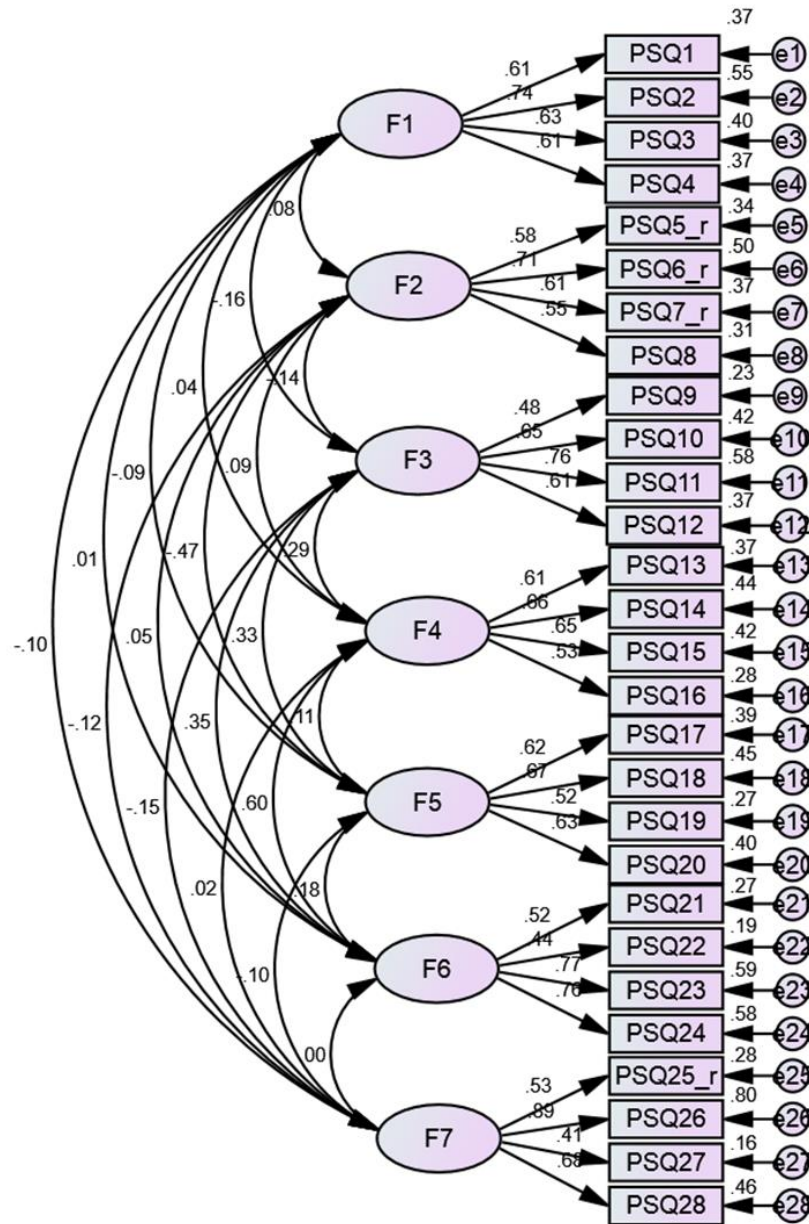


Figure 2: Confirmatory factor analysis of the PSSS

Discussion

This study is the first attempt to translate Problem Solving Style Scale in any language other than English. The cronbach's Alpha reliability of each subscale of PSSS is greater than 0.70. The item total correlation shows highly significant positive relationship between each item to item total correlation, it means that the PSSS Scale is an internally consistent measure of problem Solving.

Factor analysis is done on the data collected through a questionnaire which has 28 items about dimensions on PSSS. This analysis is performed by using Principal components analysis extraction method. The results of the factor analysis show that there are seven components which explain 56.67% of variance. It means that these seven components show the difference of one and other from mean value. Seven components are having the Eigen value of greater than one hence the results indicate that there are seven distinct constructs in this instrument on which factors can be loaded. In this study, the KMO value is 0.722 greater than the minimum level as significance level is achieved when the value of KMO is greater than 0.5.

The results of rotated component matrix factor of various items including helplessness, control, creativity, confidence, avoidance, approach, support seeking when loaded together on this dimension comes between the following factor loadings 0.727 and 0.780, 0.619 and 0.827, 0.640 and 0.772, 0.503 and 0.838, 0.572 and 0.809, 0.620 and 0.738, and 0.599 and 0.791 respectively. All the results, as seen above, are positive, which proves that we can use the Urdu translated version of Problem-Solving Style Scale into our culture and daily life.

Recommendations & Implications

Problem Solving Style Scale should be translated into other languages also so that comparisons can be made on reliability and validity. Different population should be used other than married couples to bring diversity of sample. Consideration of the larger sample would bring generalization to the results. The present effort of translation would be helpful to determine the problem-solving styles of the population living in Pakistan. As it is in native language of Urdu, it is easy for the people to understand and answer it.

References

- Basu, A., & Ray, B. (1990). Women's Struggle a History of the All India Women's Conference, 1927-1990.
- Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of behavioral medicine*, 4(2), 139-157.
- Bryant, F. B., & Veroff, J. (1982). The structure of psychological well-being: A sociohistorical analysis. *Journal of personality and social psychology*, 43(4), 653.
- Cassidy, T., & Long, C. (1996). Problem-solving style, stress and psychological illness: Development of a multifactorial measure. *British journal of clinical psychology*, 35(2), 265-277.
- Denham, S. A., & Almeida, M. C. (1987). Children's social problem-solving skills, behavioral adjustment, and interventions: A meta-analysis evaluating theory and practice. *Journal of applied developmental psychology*, 8(4), 391-409.
- Dixon, W. A., Heppner, P. P., & Anderson, W. P. (1991). Problem-solving appraisal, stress, hopelessness, and suicide ideation in a college population. *Journal of Counseling Psychology*, 38(1), 51.
- Emmons, R. A., & Diener, E. (1986). Influence of impulsivity and sociability on subjective well-being. *Journal of Personality and social psychology*, 50(6), 1211.
- Ghodrati, M., Bavandian, L., Moghaddam, M. M., & Attaran, A. (2014). On the relationship between problem-solving trait and the performance on C-test. *Theory and practice in language studies*, 4(5), 1093-1100.
- Heppner, P. P., & Petersen, C. H. (1982). The development and implications of a personal problem-solving inventory. *Journal of counseling psychology*, 29(1), 66.
- Heppner, P. P., Kampa, M., & Brunning, L. (1987). The relationship between problem-solving self-appraisal and indices of physical and psychological health. *Cognitive therapy and research*, 11(2), 155-168.
- James, W. (1890). *The Principles of Psychology: The Principles of Psychology*. Hansie old and expensive.
- Jung, C. G. (1923). Psychological types (HG Baynes, Trans.). London: Kegan Paul.
- McClland, D. C. (1965). Achievement motivation can be developed.[40] Harvard Business Review.

- Murray, H. A. (1938). Explorations in personality: A clinical and experimental study of fifty men of college age.
- Tanwar, S., & Sethi, A. S. (1986). The relationship of sex-role orientation, locus of control and achievement motivation to self-esteem among college females. *Journal of Psychological Researches*.
- Thilagaraj, R. (1984). Achievement motivation of delinquent and non-delinquents. *Social Defence*.
- Verma, O. P. (1986). Achievement motivation: A multivariate study. *Indian Psychological Review*.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological review*, 92(4), 548.

