

# A Study on Factor Structure and Validation of Social Reward Questionnaire in Iranian Youth

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## Abstract

**Introduction:** The present study was carried out with the aim of investigating the reliability, validity, and standardization of Social Reward Questionnaire (SRQ) in the Iranian youth.

**Method:** This is a descriptive (correlative) study for which 419 youth of 18 to 36 years responded to the SRQ. The data was studied using exploratory factor analysis, Cronbach's Alpha and Pearson correlation coefficient.

**Result:** The analysis of exploratory data showed that 18 items of SQR have been loaded on four factors of "acceptance", "prosocial interactions", "sexual/abusive relations" and "negative social potency". The Cronbach's Alpha coefficients obtained for the four items stood at 0.75, 0.67, 0.61 and 0.38, respectively.

**Conclusion:** The results of the present study confirm the stability of factor structure and the validity of social reward questionnaire for measuring this concept in the Iranian youth.

**Keywords:** Reward, Factor Analysis, Validation Studies, Reproducibility of Results

## Introduction

In the highly social life of humans, rewards that are sought and experienced are intertwined with social relationships and interactions between people. As we value non-social rewards, we also value socially-favored results (e.g., encouragement by others). We use our social information to evaluate and shape the expectations we have from others so that we can make a decision[1].

Some of the first attempts to measure the rewarding of social interactions were those of Mason, Hollis and Sharpe[2], Normansell, Panksepp [3], and Ikemoto and Panksepp [4] on animals. The history of research on social rewards in humans returns to the social exchange theory[5, 6]. According to this theory, social behaviors result from the high tendency of individuals to experience more social rewards than social costs. Therefore, engagement of people in a specific social behavior (for example, helping others) depends on how much the benefits of doing so outweigh the cost. This benefit is not only material rewards, including money and food, but also of more abstract rewards such as social approval from others [7].

The experimental studies performed so far were inclined to show social reward based on just one type of driver or experience. However, the expression "social reward" is widely used concerning any type of social driver or interpersonal relations for the rewarding/enjoyable individuals. For example, laughing with anyone is along with a bigger social reward of intimacy and positive emotions in further social relations regardless of the fact that whether we communicate with the same person or anyone else [8].

The study conducted by Buss in 1983 is one of the first studies defining a wide range

of social rewards from the most primary definitions (for example the presence of others) to more complex rewards (the chance of self-disclosure)[9]. However, classification of rewards has not been experimentally evaluated. Experimental classification of social objectives might provide good clues on the structure of social rewards. The mentioned classifications are associated with social rewards since objectives are influenced by reward value [10]. However, these classifications are not equivalent with social reward. Thus, Foulkes et al. designed a questionnaire to measure this concept which is capable of classifying different kinds of social reward, and deal with individual differences in the value of each reward[11].

Social reward could be considered as motivational (wanting) and enjoyable (liking) dimensions of social interactions with others [12]. Concerning various studies in this area, Ventero Medial Pre Frontal Cortex (VMPFC) codes the subject value of the person who rewards [13]. The reward processing is one form of emotional procession that especially includes emotional expression in relation with others [14].

In fact, lack or reduction of reward value of social relations is usually accompanied with mental disorders [11]. Experimental evidences show that psychopathic traits might be associated with unusual experiences of social reward [15, 16]. Generally, it seems that individuals with high levels of psychopathic traits (compared to other individuals) do not equally value dependency, relations and long-term friendships. Exhibiting prosocial behaviors might seem less rewarding to these individuals than other ordinary individuals [12]. Various studies have investigated the role of social reward in various disorders including autism spectrum [17, 18], eating disorders [19], post-traumatic stress disorders [20], and psychotic disorders [21]. Generally, previous studies indicate some abnormality in reward and punishment processing in mental disorders. Individuals with high scores in mental disorders showed reduced reward valuation of prosocial inclination, and increased reward valuation of cruelty toward others [22]. Perception of individual differences in different valuations of social reward could be a good and beneficial clue for common social behaviors and inefficient social behaviors.

Considering the importance of the concept of social rewards and the lack of proper measuring instrument for this structure in Iran, choosing a new comprehensive tool is necessary. Since there were no self-report instruments specifically for social rewards, preparing the SRQ by Foulkes et al., prompted researchers to select it for use in Iran.

Another concern about the evaluation tool of social reward is that it is designed in a certain cultural area. In order to make it usable in Iran, it is required to be standardized according to the culture of our society. Thus, the present study aims at reporting SRQ through a systematic study of psychometric specifications based on local standards.

## Method

The statistical population of the present study included

all those living in Tehran with an age range of 18-36 years with at least a diploma degree. From this population, 500 subjects were selected through available sampling. However, only 419 questionnaires (242 females and 177 males) were considered as the sample as some questionnaires were defaced. The mean age of the female participants was 26.7 years with a standard deviation of 5.6, and the mean age of the male participants was 25.7 year with a standard deviation of 6.3.

Concerning the sample size, Bryant and Yarnold proposed at least five subjects in respect to each item as the required sample size concerning the number of items of scale whose factor structure is to be studied [23].

After being translated to Persian language, the social reward questionnaire got revised by several professors of the University of Tehran and Shahid Beheshti University. Then, two English language experts were asked to retranslate it back to English. The translated and original texts were compared and their problems were studied.

In the next stage, a preliminary study was performed on 20 qualified youth. After the questionnaires got completed, an interview was held with every participant and the problem related to responding to each question was reconsidered and refined.

The SRQ was constructed in 2014 by Foulkes et al. This questionnaire includes 23 items that were reduced to 18 questions in translation and standardization of the Persian form by removing 5 items. To respond to each question, 7-point Likert scale was used including "extremely agreed", "agreed", "to some extent agreed", "neither agreed not disagreed", "to some extent disagreed", "disagreed" and "extremely disagreed". The scoring of the questions was 7 for "extremely agreed" and 1 for "extremely disagreed" and the only questions that were inversely scored were items 8 and 14.

In Foulkes et al.'s study, reliability and validity of this questionnaire were evaluated and accepted [11]. In the present study, the reliability of the questionnaire was determined through retest with the time interval of one month for two test administrations. The obtained correlation coefficients for acceptance, prosocial interaction, sexual/abusive relations and negative social potency were 0.51, 0.71, 0.87 and 0.86, respectively, which is meaningful in 0.05 for acceptance subscale, and in 0.001 for other subscales. The internal consistency of the questionnaire was calculated through Cronbach's alpha and the obtained coefficient stood at 0.71.

Moreover, to evaluate the validity of SRQ, it was given to five professors of psychology with a PhD degree to study and evaluate it in terms of its capability in evaluation of the intended concept. Finally, based on the preliminary studies and professors' opinions, some conceptual and literal changes were applied to the questionnaire and the final version was used.

The research data were statistically analyzed using confirmatory and exploratory factor analysis, Cronbach's alpha and Pearson correlation coefficient using SPSS and Amose.

## Result

In this study, the construct validity was investigated by factor analysis method. For this purpose at first the confirmatory factor analysis was used (Table 1).

As seen in Table 1,  $\chi^2/df$  is greater than 2 (8.06). Also, CFI (0.41), RFI (0.32), TLI (0.35), all three are smaller than 0.90 and the RMSEA index is greater than 0.05. These findings show the weak fit of the model in the sample of the Iranian youth.

The calculation of Kaiser Mayer Olkin measure and Bartlett's test of sphericity on the data obtained from the implementation of social reward questionnaire showed that KMO of 0.764 and Bartlett's test of sphericity of 153 (degree of freedom) were meaningful in  $P < 0.001$ . Thus, there is a required condition for exploratory factor analysis of this scale.

The foregoing table presents the output of total variance explained by five factors whose special values were above 1. In the results obtained from factor

circulation, the fifth factor only explains a variance of 5.95 which is not a considerable value. Moreover, as only two questions were loaded in the fifth factor of the five-factor model, thus the four initial factors were considered as the main factors and infrastructural factors in this analysis.

In the study of factor content, the first factor is called acceptance which includes 6 items of 1, 6, 7, 11, 15 and 18. The second factor is called prosocial interactions that includes 5 items of 8, 14, 16, 19 and 22. The third factor, sexual/abusive relations, includes 4 items of 5, 9, 13 and 20; and the fourth factor which is called negative social potency is composed of 3 items of 10, 12 and 23.

After obtaining the existing items of each factor, for the evaluations of internal consistency, the Cronbach's alpha was calculated for each item that stood at 0.75, 0.67, 0.61 and 0.38 for acceptance, prosocial interactions, sexual/abusive relations and negative social potency, respectively.

**Table 1.** Confirmatory factor analysis results for Social Reward Questionnaire(SRQ)

Model	$\chi^2$	Df	$df^2/\chi^2$	CFI	RFI	TLI	RMSEA
Single factor model	1855.2	230	8.06	0.41	0.32	0.35	0.13

**Table 2.** Total explained variance through exploratory factor analysis for six factors extracted from SQR

Special values	Total coefficient of non-circulated factors			Total coefficient of circulated factors		
	Total	Variance%	Density%	Total	Variance%	Density%
Selected factors						
1	3.89	21.61	21.61	3.89	21.61	21.61
2	2.28	12.67	34.29	2.28	12.67	34.29
3	1.51	8.37	42.66	1.51	8.37	42.66
4	1.27	7.04	49.70	1.27	7.04	49.70
5	1.07	5.95	55.64	1.07	5.95	55.64

**Table 3.** Circulated matrix of components in five-factor model of SRQ

Question	Factors			
	1	2	3	4
1. I enjoy being around people who think I'm an important and exciting person.	0.664			
6. I enjoy feeling emotionally connected to someone.	0.363			
7. I enjoy it if others look up to me.	0.740			
11. I enjoy being around people who are impressed with who I am and what I do.	0.781			
15. I enjoy many people wanting to invite me to their social events.	0.577			
18. I enjoy achieving recognition from others.	0.643			
8. I enjoy tricking someone out of something.		0.641		
14. I enjoy embarrassing others.		0.629		
16. I enjoy keeping promises I make to others.		0.723		
19. I enjoy it if someone accepts me as I am, no matter what.		0.515		
22. I enjoy making someone feel happy.		0.709		
5. I enjoy being nice to someone only if I gain something out of it.			0.615	
9. I enjoy having erotic relationships.			0.853	
13. I enjoy having many sexual experiences.			0.479	
20. I enjoy having an active sex life.			0.648	
10. I enjoy being a member of a group/club.				0.727
12. I enjoy letting someone else tell me what to do.				0.681
23. I enjoy following someone else's rules.				0.400

## 4. Discussion

Consistent with some experimental evidences, a considerable amount of studies has been carried out on social rewards including those by Ogoshi, Ogoshi, Takezawa, (24) & Mitsuhashi, Tobler et al. [25] and Spielmann, Maxwell, MacDonald, & Baratta,[26]. Thus,

accessibility to dynamic and valid instrument in various cultural textures is unavoidable for measuring the social reward structure.

The present study has been carried out with the aim of determining factor structure and psychometric features of SRQ. This 23-item questionnaire is a comprehensive scale

to measure individual differences in the valuation of social rewards. This questionnaire was translated to Persian language such that it was appropriate for Iranian culture and respondents could answer to it with the least inhibition.

Recent studies have provided new experimental studies concerning factor validity and psychometric features of SRQ. Deletion of items 2, 3, 4, 17 and 21 leads to a considerable increase in internal consistency, and this indicates that the participants interpret these questions differently. By using confirmatory and exploratory factor analysis, 18 out of 23 items of SRQ will be located on four factors of acceptance, prosocial interactions, sexual/abusive relations, and negative social potency. The results showed that the Cronbach's alpha coefficient was acceptable for the total score of SRQ and its four subscales.

In addition, the results of the present study showed that women, in comparison with men, are of higher scores in acceptance and prosocial interactions. According to Reid's study, relation - as the essential female characteristic - is defined by focusing on others and confirming relations with others[27].

This is while the main male feature is specified by self-focusing and confirming separation from others. Based on this, it seems that women show more collectivist inclinations than men. They try to seek confirmation and acceptance of others through performing positive social behaviors and engaging in group activities [19].

In Foulkes et al.'s study, the scores of sexual relationships had no correlation with negative social potency[12]. This is while, in the present study, item 12 (I enjoy being good with others if I benefit from it) is located beside three sexual items and is called, "sexual and abusive relations." These four questions, being considered as a separate factor, could show the taboo nature of sexual issues and people's different approach towards these issues in the Iranian culture.

## 5. Conclusion

To conclude, this study provided evidence that the SRQ is a reliable and valid measure for assessing social reward in the Iranian society. Some limitations of this study make the generalizability of the results problematic and limited. At first, the results of the present study, similar to those of many other studies, might encourage participants in social confirmation seeking behavior and avoidance of bad reputation due to lack of individual competency for using self-report instruments instead of real study of behavior. Secondly, the statistical population being limited to young people living in Tehran makes the generalization of the results to other populations problematic.

The study and comparison of factor structure and psychometric specifications of this questionnaire among clinical and non-clinical samples in different age groups could be considered as a research priority. Clinical interviews and structured observations beside

questionnaires are recommended in future studies for achieving more generalizable results.

The use of this questionnaire for obtaining standard tables for various age groups from teen to elderly ages and for various Iranian cultures and ethnic groups as well as considering the gender variable could offer new and interesting findings to psychology.

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