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VALIDATION OF THE INSTRUMENT FOR MEASURING SOCIAL EXCLUSION IN FEMALE-HEADED HOUSEHOLDS AS A BASE OF POVERTY IN SINGLE-PARENTS FAMILY"

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ABSTRACT

Nowadays, social exclusion approach is a critical and applied perspective for studying the status of people in the society. This multi-dimensional approach to the study of deprivation makes it possible to identify all the aspects of this phenomenon. This study examined the reliability and validity of social exclusion measurement tool in female-headed households. After translating, editing and appropriating the Hoff and Vrooman's questionnaire (2012), face validity and content validity were conducted.Test-retest of the questionnaire was carried out to measure the reliability. Construct validity was conducted through known-groups method; and both exploratory and confirmatory factor analyses were performed.The results of content validity ratio (CVR) revealed that all questions were equal to or higher than 0.78 and none of the questions was found to be less than 0.79 in the content validity index (CVI) results. The Impact score of all questions was more than 1.5. Cronbach's alpha was 0.887. test – retest shows that the questionnaire has high and significant correlation. ICC was equal to 0.942. the results of known group's method show that the questionnaire was well able to separate the two groups. The results of factor analyses (exploratory and confirmatory) show that the exploratory model has an acceptable fitting.

Keywords: *Instrument, Social Exclusion, Validity, Reliability, Female-Headed Households.*

INTRODUCTION

In the recent years, it has been tried to provide conceptual definitions and measurement methods for social exclusion in various societies because this concept and its measurement is very important in analyzing the positions of individuals (particularly the vulnerable), finding the causes of their problems, making right social policies and evaluating previous programs. And it is necessary for any society to have certain programs to provide scientific definition, measurement tool and monitoring of social exclusion over time.True measurement of social exclusion, especially vulnerable groups of society, makes effective interventions possible.
While social exclusion is an old concept and had been used in its official and public forms in the past such as being exiled or kept away from the society but today, due to the diverse and complex forms of exclusion in society and also its unseen and intangible nature, there is no general agreement on the concept and its dimensions yet. Seemingly, providing a definition for

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exclusion is both easy and very difficult at the same time. For these reasons, application of this concept and maintaining the accuracy of its measurement require scientific studies in any society. Making the social exclusion measurement tools valid and reliable in every society is one of the ways to properly measure social exclusion in that society. This will also pave the way to conceptualization and measurement based on the requirements of each society.

After the conceptualization of social exclusion, measuring it by using a valid and reliable tool is very important. These tools, to a large extent, shouldn't have the limitations of previous tools, and include measuring social exclusion dimensions based on the most recent assessment studies. This study tries to validate, for the first time, Hoff and Vrooman's instrument for measuring social exclusion in Iran in order to provide a valid instrument for researchers and also to help develop the concept of social exclusion in Iran.

The concept of social exclusion

The French writer, Rene Lenior (1974), made the social exclusion concept popular for the first time in his book "L' excluses". His definition of this concept included different groups of individuals such as: "the elderly, handicapped, socially maladjusted individuals, discordant groups such as young people involved in problems, parents incapable of meeting the needs of their families, isolated and lonely individuals, individuals more susceptible to suicide, alcoholics and drug addicts". He was mainly obsessed with the effect than the cause. In other words, he paid more attention to situations that individuals were in than the processes that separated them from the society (Firoozabadi, 2013, p. 18; Byrne, 2008, p. 263; Mathieson et al. 2008; Xiberras 1998, p. 12). Hilary Silver (1994) in her well-known article "Social exclusion and social solidarity: Three paradigms" provided triple paradigms to explain the sources and nature of social exclusion. These included: solidarity, specialization and monopoly (Silver, 1994, p. 539).

Solidarity paradigm deals with the dissociation of social bonds between individuals and society and paradigm of specialization is a reflection of discrimination. If the outcasts are free to move between the borders, then social differences will not result in economic division of labor market nor will the separation of areas lead to social class hierarchy. Monopoly paradigm considers exclusion as the result of the monopolization of resources for the benefit of powerful groups (Silver, 1994, p. 570). Silver's paradigms point out important aspects of the concept of social exclusion including: being relational, being dynamic, being multifaceted and cumulative (Madanipour et al,. 2015, p. 726). The common thread through all of the mentioned definitions refers to the situations of individuals who are separated, for different reasons, from public and main flow of the society in different aspects. The unique structure of social exclusion in analyzing poverty and inequality provides the ability to explain this situation in several major personal and social perspectives of individuals' lives. Today, one-dimensional analyses based on financial dimension, to a large extent, are no longer feasible and the continuous assessments of avoidable inequalities that are based on social reality are taking their place. As global and national changes occur, new forms of inequality emerge. Social exclusion is a term used to describe new forms of inequality (Atkinson and Davoudi, 2000, Copeland and Daly, 2012; Madanipour et al., 2003, as cited in Madanipour and Weckm, 2015). For this purpose, it benefits from a multi-dimensional approach, based on sectors and areas of life. This subject is associated with various fields of integration and solidarity such as: participation in the labor market as an important cornerstone of social inclusion, the amount

of exclusion and access to the state welfare, proper housing conditions or the right of political participation as the subsequent cases (Madanipour and Weck, 2015, p.715). With respect to the local specific patterns and integration strategies, the location plays an important role in this field (Bentley and Pugalis, 2014 as cited in Madanipour and Weck, 2015, p.715). It seems that the concept of social exclusion covers a wide range of economic and social issues (Sen, 2000: 1). The perspective of social exclusion reinforces – rather than competing with– the understanding of poverty as a kind of capability deprivation (Sen, 2000, p. 46).Peace's definition of exclusion is much broader than poverty and income inequality, deprivation or lack of job. It is a multidimensional concept that shows the lack of resources or civil rights and a dynamic process during the life of deprived individuals. Dynamism includes multiple deprivation, breakdown of family bonds and social relations, loss of identity and purpose. This definition is widely accepted today (Peace, 2001).

Multiple definitions and analyses are needed to understand the real and main roots of inequality, because emphasizing the economic inequalities alone and measuring and providing results prevent a proper understanding of other areas. Resultantly, this makes it difficult to reduce inequalities or plan for it.Social exclusion explains the structures and the dynamic levels of inequality in society. This phenomenon refers to the inability of certain groups or individuals to participate fully in the society, therefore reduces their access to social, political, economic and cultural resources due to structural inequalities. These inequalities are created in terms of race, social class, gender, disability, immigration, religion and ethnicity (Galabuzi, 2002).

Gijsbers & Vrooman (2007) believe that it is worthwhile to try to combine the two scientific disciplines in order to enhance the theoretical and methodological development of social exclusion concept. They believe that social exclusion concept refers to two main aspects:

1. The structural-economic exclusion which refers to the distributional aspect in the Anglo-Saxon and American approach. In this section, they introduce two distributional aspects, namely, income and product and an immaterial aspect named social rights.
2. The socio-cultural exclusion which refers to a relationship aspect following French school. This aspect itself is divided into two different aspects: social integration which refers to social connections and social networking; and cultural integration which attends to the values and norms.

Finally, their approach is a combination of two ideas: social exclusion and poverty are the results of structural factors; and specific social settings and subcultures are the basis of poverty and social exclusion (Vrooman and Gijsbers., 2007: 16). They believe that social exclusion is a multi-dimensional phenomenon and distinguish between risk factors and the phenomenon of social exclusion (Vrooman and Gijsbers., 2007). Gijsbers et al. (2009) did an extensive review of the recent literature on social exclusion (e.g. Room 1992, 1997; Silver, 1994; Gough, 1997; Burchard, 2000; Hills et al., 2002; Tsakloglou and Papadopoulos., 2001; Pantazis et al., 2006; Levitas, 2006; Poggi, 2007). Based on these studies, this concept has four dimensions theoretically. Social and cultural exclusions are two of these aspects. Limited social participation means that individuals have limited social networks, barely contact with others, and their social interaction is low. Normative integration refers to failure to comply with the main norms and values of the society. Two other aspects are economic and structural

exclusions. material deprivation refers to the main deficiencies that people really experience such as: the lack of essential goods and services for financial reasons, arrears and troublesome debts. Insufficient access to basic social rights means that people don't have appropriate health care, adequate education and suitable living environment. Theoretically, social exclusion occurs when a person is deprived simultaneously of several of these dimensions (Vrooman and Hoff., 2012).

Hoof and Vrooman's social exclusion measurement questionnaire (created by J. Cok Vrooman and Stella J. M. Hoff., 2012)

This questionnaire is one of the recent tools in measuring social exclusion. It was made by professor J. Cok Vrooman and Dr. Stella J.M. Hoff in 2012. The questionnaire consists of 15 items and 4 sections (dimension) including: limited social participation, lack of normative integration (social, cultural exclusion), inadequate access to basic social rights and material deprivation. Making of this tool is based on the multidimensional nature of social exclusion.

Tool makers (Vrooman and Hoff) point out the following advantages of the questionnaire:

- It measures social exclusion directly. All previous tools considered risk factors in addition to measuring social exclusion. As a result, the true amount of exclusion could not be estimated.
- Many questions are about the behavior of the people, such as when they speak about the normative integration, the audience are themselves not others.
- Another point that should be mentioned about the simple and clear questions such as, putting the bottle in the container and doing charity is that these questions are not intimidating therefore they reduce the likelihood of socially desirable but fake answers.
- In the questions selected for the evaluation of normative integration, it is extremely important to note that the questions are about attitudes and positive actions that are voluntary and there is no obligation and legal commitment for doing them, and rejecting them does not mean law breaking and not subject to sanctions and there are not certain advantages to them. And this is associated with the cultural-social aspect of social exclusion because people are not obliged and forced to think and do anything; they do it only due to internal demand and real relationship with their living environment (Vrooman and Hoff, 2011).

Dimensions, questions about every dimension and measurement methods are given in Table 1:

Tsble 1: Dimensions, questions about every dimension and measurement methods are given in

Dimension	Assessment method
Limited social participation	Questions 1, 2, 3 Yes - No. Question 4 Likert scale
Lack of normative integration	Questions 5, 6 Yes-No. Questions 7 and 8 Likert scale
inadequate access to basic social rights	Questions 9 and 10 Likert scale. Question 11 Yes - No
Material deprivation	Questions 12, 13, 14 Yes - No. Question 15 Likert scale

METHOD (RELIABILITY AND VALIDITY)

Place

Tabriz is the most populated city in Iranian Azerbaijan. one of the historical capitals of Iran and the present capital of East Azerbaijan province. With a population of over 1.73 million (2016), Tabriz is the largest economic hub and metropolitan area in Northwest Iran. The

population is overwhelmingly Azerbaijani, though Persian is spoken by residents as a second language. Tabriz is a major, heavy industrial hub for automobiles, machine tools, refineries, petrochemicals, textiles and cement production industries. The city is famous for its handicrafts, including hand-woven rugs and jewellery. Local confectionery, chocolate, dried nuts and traditional Tabrizi food are recognised throughout Iran as some of the best. Tabriz is also an academic hub and a site for some of the most prestigious cultural institutes in Northwest Iran. Tabriz contains many historical monuments, representing Iran's architectural transition throughout its deep history.

Translation

After obtaining permission from the original creators of the tool (Vrooman and Hoff), translation process was carried out in standard forward-backward manner. At first the English version was translated by two experienced and proficient English-Persian translators. Some questions were modified to fit social and cultural conditions of Iran. Also, there had been some coordination with the original tool makers to make the changes. This initial copy was reviewed by10 experts and their recommendations were taken into account. The translated and modified copy of the questionnaire was translated into English by another proficient Persian-English translator. Finally, the translation was compared and matched with the original version. Then the final English version of the questionnaire was sent to the original creators and the final copy was reviewed and approved by tool makers.

Editing the linguistic aspects of the tool by reviewing the tool in among 30 individuals of the population and making necessary revisions

After preparing the initial version of the translation, the language of the tool was edited by distributing the tool among 30 women who were the heads of their households. They were asked to read the questionnaire carefully and answer the questions. Ambiguous points were resolved at the end of the interview and the response time was recorded. In general, the views of the participants showed that the questionnaire was valid and unclear points were scarce.

Face Validity

Face validity: in this study, the initial version of the tool that was prepared during the aforementioned process was reviewed by 10 experts, and their comments and suggestions were collected and reviewed. Finally, the necessary changes were made and the final version with minor modifications was prepared. The impact score was calculated for every question and the overall impact score was calculated to be more than 1.5. In addition to calculating and assessing the impact scores of the questions, a meeting consisting of 10 subject women was formed for collecting the comments and reviews. Every question was evaluated separately.

Content Validity

Content Validity Ratio (CVR): this index was calculated using Lawshe table and views of experts in the field of exam content. Finally, the calculation was performed using the answers from 9 experts. All questions regarding the number of experts and based on the Lawshe table were equal or greater than 0.78.

Content Validity Index (CVI): Waltz & Bausell method was used to assess the CVI. The minimum acceptable value for CVI index is 0.79 and if an item's CVI index is less than 0.79 it should be omitted. For calculating CVI, the tables were designed based on aforementioned items and sent to expert for review. Results were calculated separately for any question. None

of the questions had a value less than 0.79 and according to the results all the questions obtained acceptable scores.

Reliability

- **Homogeneity or internal consistency method:**

Cronbach's alpha coefficient was used to determine the internal consistency. This method is used for calculating the internal consistency of measurement tools including questionnaires. Since the questionnaire has four dimensions, alpha coefficient was measured for the whole questionnaire and for every 4 dimensions separately.

Cronbach's alpha was calculated 0.887 for the whole social exclusion assessment questionnaire and since this value is greater than 0.7, the overall reliability of the questionnaire is approved and desirable. Cronbach's alpha coefficient elements (dimensions) of the questionnaire were measured and given in Table 2.

Table 2. Values of Cronbach's alpha for social exclusion questionnaire

Dimensions	Cronbach's alpha
Limited community participation	0.764
Inadequate normative integration	0.624
Inadequate access to basic social rights	0.779
material exclusion	0.946

- **test-retest Reliability**

Time stability is achieved when the questionnaire yields the same results every time it is administered. This kind of reliability is known as reliability in retest and it is the correlation value among the scores of every individual in different administrations. There are two important points in administration of this method: adequate time intervals between two administration sessions and elapsing of sufficient time since the first phase of administration (Rafiei et al., 2008).At the beginning of this phase, 30 women heading households were requested to answer the questionnaire. Then, the second phase was administered after elapsing of two weeks since the first phase, i.e. the same participants answered the same questions under the same condition. Then correlation coefficients for every question and intraclass correlation coefficient were calculated. Comparing the correlation coefficient between the two times of administration revealed that the questionnaire, as a whole, and for every question has a high and significant correlation.

Table 3: Correlation between the results of two times of administration for every question

Question	Spearman's correlation coefficient
1	0.733
2	1
3	1
4	0.941
5	1
6	0.932
7	0.944
8	0.995
9	0.896

10	0.986
11	0.935
12	1
13	1
14	1
15	1

Calculating ICC was another method for assessing test-retest reliability in this study. The questionnaire has appropriate reliability according to the following results:

Table 4: ICC between two times of administrating the social exclusion assessment questionnaire

ICC	CI 95/0	p- value
0/942	0/878-0/972	0/001

- **Known- groups method**

One of the ways to verify construct validity of this study was to compare known- groups. This method is used to determine the questionnaire's capability in separating different subgroups. In other words, this type of validity determines the capability of a tool in differentiating participants according to specified criteria and assumptions. This study compares each of the 4 dimensions of the questionnaire in the women of female-headed households and non-female-headed households. The statistic values of mean and standard deviation in each of the four dimensions of female-headed groups and non-female-headed are shown in Table 5.

Table 5. The mean and standard deviation of social exclusion dimensions in head females and non-head females

Dimension	Mean ± SD (head females)	Mean ± SD (non-head females)	Mean ± SD (total of two groups)
Limited social participation	3.54 ± 0.58	2.52 ± 0.33	3.03 ± 0.70
Lack of normative integration	3.37 ± 0.73	1.78 ± 0.69	2.57 ± 1.07
Inadequate access to basic social rights	3.52 ± 1.00	1.44 ± 0.54	2.48 ± 1.32
Material deprivation	4.88 ± 0.36	1.56 ± 0.64	3.22 ± 1.75

Mann-Whitney test was used to compare the groups. The results are shown in Table 6. According to this table, the average rating for components in the head females is more than non-head ones.

Table 6. The results of Mann-Whitney test

Dimension	Mann-Whitney U	W Wilcoxon	Z statistic	P-value
Limited social participation	72.5	537.5	-5.74	0.0001
Lack of normative integration	71	536	-5.63	0.0001
Inadequate access to basic social rights	29	494	-6.29	0.0001
Material deprivation	0	465	-6.97	0.0001

According to the results, the assumption of same significance level of five percent for both groups of head females and non-head females is rejected. Since the average of the four

components is greater in head females, therefore the average scores of the components of limited social participation, lack of normative integration, inadequate access to basic social rights and material deprivation, and in general, the rate of social exclusion in head females is higher than non-head females. As it can be seen, the questionnaire has been well able to differentiate the known groups, and the instrument's items are structurally valid.

Construct validity through exploratory and confirmatory factor analyses

To determine construct validity, this study used two methods of factor analysis which analyze the interrelationship between a large numbers of variables in addition to the aforementioned methods, including content validity, face validity and discriminant validity by comparing the known groups.

- **Exploratory factor analysis**

This step includes:

1) Determining the adequacy of the model using Kaiser Meier Olkin (KMO) and Bartlett's test parameters as well as the adequacy of the model using the aforementioned percentage of variance.
2) Determining the number of factors using Scree Plot test.
3) Determining specific factor loads after applying the appropriate rotation and checking if they are basically reasonable; and naming output factors.

To classify the questionnaire, exploratory factor analysis was used to check whether the defined logical structures for the questionnaire are extracted from the questions in culture related to the population of the study. If these structures existed, the construct validity of the questionnaire could be approved. Exploratory factor analysis was done according to the data of 200 women randomly selected from the population of female-headed households in the city of Tabriz.

Table7. Profile of participants in Exploratory Factor Analysis

Age	frequency	education	Frequency	number of children	Frequency	Spouse's Status	Frequency	Employment status	Frequency	Housing status	Frequency
		Illiterate	87	1	49	Deceased	100	Employed	66	Rent	42
20-30	20	Elementary	41	2	49	Divorced	56	Unemployed	134	Private	92
31-40	43	Pre-Middle school	34	3	38	Out of service	15			Paternal house	32
41-50	46	Middle school	9	4	17	fugitive	9			Relatives	19
51-60	54	Diploma	18	5	17	handicapped	4			Other	15
61-70	37	Associate Degree	4	6	13	patient	9				
		Bachelor	7	More than 6	17	addicted	7				

Kaiser Meier Olkin (KMO) measure of sampling was evaluated prior to factor analysis to ensure the adequacy of samples and correlation of data. Bartlett's Test of Sphericity was also conducted. The result of Kaiser Meier Olkin test (KMO=0.711) and Bartlett's Test of Sphericity (646/482) indicated the adequacy of the samples for factor analysis. So, it can be concluded that the data are suitable for factor analysis.

To determine the number of instrument making factors, the method of calculating the amount of Eigen value and scree plot test were used. In addition to the importance of the aforementioned methods on making decision about the number of factors, considering the background of the phenomenon under study for logical and theoretical interpretation of the factors is also a valuable and important method for making decisions about the number of factors. The second phase of exploratory factor analysis is factor rotation. Principal Axis Factoring (PAF) method was used to extract factors (structures) and Oblimin rotation method was used for item rotation. Since the factors of the present study were correlated, Oblimin rotation method was used to achieve a simple structure and also maintain the orthogonality of the factors' axis. Items with aligned correlation were summarized in the form of new variables called factors. After extracting the factors, each of them were named according to variables (phrases) of each factor, and the extent to which these factors were consistent with concepts and dimensions of social exclusion were evaluated.The following results showed that there is a correlation between most of the extracted factors and this confirmed the choice of Oblimin rotation.

Table 8. The correlation between the factors of exploratory model

Exploratory factors	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Factor 1	1.000	-.072	.256	-.075	.187	.119
Factor 2	-.072	1.000	-.032	-.068	-.005	.000
Factor 3	.256	-.032	1.000	-.069	.231	.036
Factor 4	-.075	-.068	-.069	1.000	-.008	-.066
Factor 5	.187	-.005	.231	-.008	1.000	.081
Factor 6	.119	.000	.036	-.066	.081	1.000

Communalities

If the amount of item factor load is less than 0.2, it will have a weak relation with a set of extracting factors and candidates are removed though their removal is not mandatory. According to table 9 all items of the questionnaire have a Communalities factors load greater than 0.2, therefore all the items remained in the questionnaire.

Table 9.Communalities

Question	Communalities
1	.696
2	.716
3	.634
4	.721
5	.631
6	.721
7	.809

8	.697
9	.822
10	.563
11	.561
12	.593
13	.595
14	.664
15	.697

Table 10. Factor structure matrix and coefficients resulting from factor analysis

	Exploratory factor analysis		
Factors	Eigenvalue	Percentage Distribution explained	The cumulative percentage of variance explained
1	3.575	23.831	23.831
2	1.584	10.560	34.392
3	1.449	9.658	44.049
4	1.278	8.522	52.572
5	1.182	7.877	60.449
6	1.052	7.010	67.459

According to Table 10, six significant factors with eigenvalue more than 1 were obtained that could explain 67.459 percent of variance of The social exclusion index. The scree plot of the factors and eigenvalues are given below.

The amount of explanation performed for each factor individually and collectively is provided in the above table. Factor 1 has the maximum eigenvalue therefore can predict the concept of social exclusion more than other predictors, but its explanatory power is 23.831 percent. The total explanatory power for 6 factors of this questionnaire was 67.459. In other words, 67.459% of the changes in the questionnaire were determined by 6 extracted factors.

According to scree plot diagram, factors that are on top of a steep plunge and in a gap between all factors are suitable for extraction. According to scree plot diagram, 6 factors in the present data were separated and the results of the factor analysis (6-factor structure) were justified. Based on the explained variance, the total power of the model was equal to 67.459.

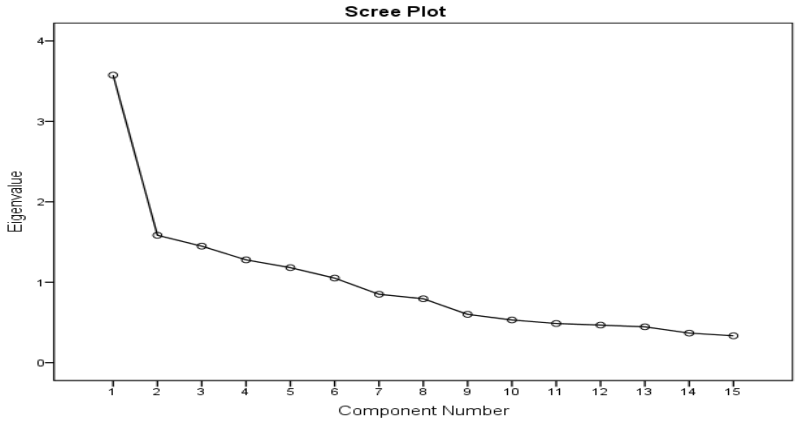

Figure 1: Scree Plot of the factors and eigenvalues

The factor load of any question in a rotated matrix must be at least 0.30, otherwise candidates whose removal are not mandatory, might be removed. The results of specific factor loads for this questionnaire are presented in the Table 11. As seen in the table, exploratory analysis results in the extraction of 6 factors none of which are candidates for removal.

Results of exploratory factor analysis

A 6-factor structure is achieved and its factor 1 includes 4 questions (12, 13, 14 and 15) and is called as " Material deprivation "; Factor 2 includes question 9 alone as " Insufficient access to basic social rights 1 (Health and treatment)"; Factor 5 includes questions 10 and 11 as " Insufficient access to basic social rights 2 (housing conditions and living environment)"; Factor 3 includes questions 1, 2, 3 and 4 as " Limited social participation "; Factor 4 includes questions 5 and 6 as " Lack of normative integration 1 (Helping and collaborating with others)"; and factor 6 includes questions 7 and 8 as " Lack of normative integration 2 (trying to improve society)".

Table 11: Rotated factor loadings of exploratory factor analysis with extraction of six factors of social exclusion questionnaire

Items	1	2	3	4	5	6
EC15	.802					
EC14	.736					
EC13	.701					
EC12	.644					
SB9		.886				
SP1			.826			
SP2			.822			
SP3			.723			
SP4			.340			
SI5				-.771		
SI6				-.665		
SB10					.679	
SB11					.589	
SI8						.763

Confirmatory factor analysis

Evaluating the outcome factors of exploratory factor analysis needs fitting the model through confirmatory factor analysis, so it can be determined if the exploratory model is approved or not theoretically and in terms of the relationship between the factors. This study used the data from 300 women heading households in the city of Tabriz to perform confirmatory factor analysis.To evaluate model fitting, the fitting indices were used including absolute fitting indices such as Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Root Mean Squared Residual (RMR); and frugal fitting indices such as Root Mean Squared Error of Approximation (RMSEA), CMIN / DF, LO 90 and HI 90.Indices with acceptable values confirming this model are presented in Table 12.

Table 12: fitting indicators with Favorable rating

RMSEA	LO 90	HI 90	GFI	AGFI	CMIN/DF
.061	.047	.075	.938	.91	2.112
Favorable rating					
<0.08	<0.05	<0.08	over 90	over 90	< 3

Table 13. The profile of participants in confirmatory factor analysis (n = 300)

Age	frequency	education	Frequency	number of children	Frequency	Spouse's Status	Frequency	Employment status	Frequency	Housing status	Frequency
		Illiterate	127	1	74	Deceased	72	Employed	70	Rent	85
20-30	59	Elementary	78	2	99	Divorced	36	Unemployed	230	Private	148
31-40	60	Pre-Middle school	46	3	44	Out of service	7			Paternal house	22
41-50	74	Middle school	24	4	38	fugitive	70			Relatives	30
51-60	79	Diploma	19	5	16	handicapped	6			Other	15
61-70	28	Associate Degree	1	6	15	patient	10				
		Bachelor	5	More than 6	14	addicted	49				

Results of confirmatory factor analysis

According to the above results, the fitting of exploratory model is acceptable and is more desirable and appropriate in comparison to theoretical model. The verified 6-factor model has been explained in the results of exploratory factor analysis. The final model is presented as follows:

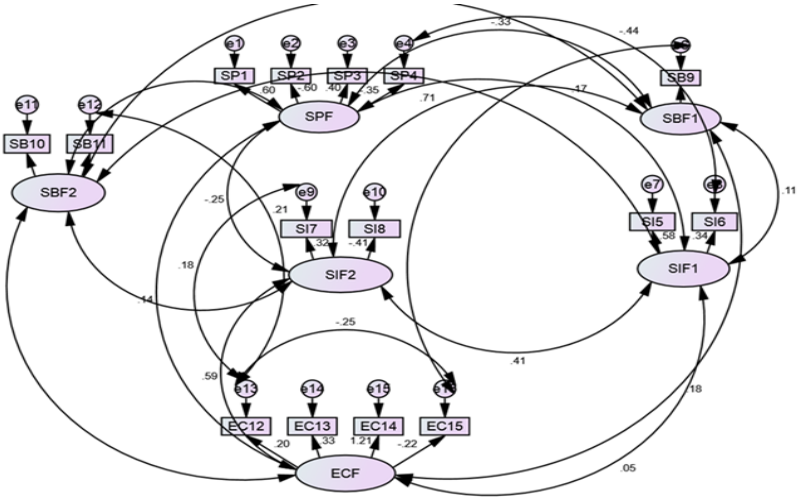

Figure 2: final model of confirmatory factor analysis

DISCUSSION AND CONCLUSION

This study tried to validate Hoff and Vrooman's instrument for measuring social exclusion in female-headed households. The instrument had not been checked for validity nor reliability. Based on our study, there has not been much study on social exclusion and particularly on its assessment in Iranian female-headed households.

The literature review shows that this tool has not yet been evaluated in other countries. Bayram et al. (2011) used another tool to measure social exclusion, which was designed by Gijsbers and Vrooman (2007), in a study entitled Measuring Social Exclusion: a Study from Turkey. This tool, which was not used before in Turkey, was completed by 50 volunteers, all of which were university students, and, because there were no reports of any problems in participants' perceptions and inferences, the tool was used in the study.

Bayram et al. (2012) in another study entitled: "Social Exclusion and Quality of Life: An Empirical Study from Turkey" used the same tool that was translated in the previous study.

The questionnaire that has been validated in this study using various methods and with 500 participants is a tool that was developed during research using the Hoff and Vrooman's combination method. They attempted to overcome the disadvantages and limitations of previous tools, including the tools of Gijsbers and Vrooman (2007), and our study results show that the tool can be utilized and developed in other countries according to social conditions.

Statistical analyses of the Persian version of Hoff and Vrooman's instrument (2012) show that the instrument is valid and reliable. This is the latest instrument translated into Persian and validated which can be utilized in policymaking processes for female-headed households and evaluating social exclusion in these women.

Various methods were used to validate the instrument. This is one of the advantages of this study. Researchers were in contact with the original instrument makers and considered their comments in the process of translating and editing the instrument. Researchers made an attempt to take Iran's social and cultural conditions into account, for this reason some changes were made to the questionnaire as follows:

1. **Give to good causes**

There is no clear explanation for this expression in Persian, but after consultations with instrument makers, translators, research team members and even some native English speakers it was concluded that the meaning of this expression has something to do with "make a donation to charity", so the question was presented in this way: "I would donate to charity."

2. **I put glass items in the bottle bank**

This question can be asked only in communities where recycling and separation of garbage, and in this specific case putting glass bottles in specific recycle bins, is a norm and law. This question is presented at the "lack of normative integration " section where adherence to the norms is considered. For this reason, and because of lack of the mentioned norm in Iranian society, the question was presented as: I put the garbage out on time.

3. The expression "mark your own opinion about this sentence" was added to the beginning of question 8.
4. The expression "mark your opinion about this sentence" was added to the beginning of question 10.
5. **I have enough money to heat my home**

This question was presented in this way: "I can cover my water, electricity, telephone and gas bills.

6. I have enough money for club memberships

This question was presented in this way: "I can afford to pay for training classes/ pool and gym membership fee".

7. I have enough money to visit others

This question was presented in this way: "I have enough money to socialize with others (such as hosting a party and going to a party / visiting friends and relatives)".

The results of the exploratory factor analysis showed that six significant factors were obtained that could explain 67.459 percent of variance the social exclusion index. The six factors were named as follows:

factor 1 includes 4 questions (12, 13, 14 and 15) and is called as " Material deprivation "; Factor 2 includes question 9 alone as " Insufficient access to basic social rights 1 (Health& treatment)"; Factor 5 includes questions 10 and 11 as " Insufficient access to basic social rights 2 (housing conditions & living environment)"; Factor 3 includes questions 1, 2, 3 and 4 as " Limited social participation "; Factor 4 includes questions 5 and 6 as " Lack of normative integration 1 (Helping & collaborating with others)"; and factor 6 includes questions 7 and 8 as " Lack of normative integration 2 (trying to improve society)".

Factor 1 (Material deprivation) and factor 3 (Limited Social Participation) seem to have remained unchanged. But Questions 9, 10 and 11, which relate to the "Insufficient access to basic social rights", were separated. For this reason, they were named separately, and the dimension of (insufficient access to basic social rights) was named in two domains of 1 and 2. This issue can be explained by considering the social, economic, and utilitarian nature of basic services in Iran. Now healthcare services are available through health insurance covering a wide range of areas and services with low costs and are not proportionate to the housing situation, neighborhood and neighbors. (Questions 10 and 11 on the status of the home and the neighborhood).

In the Dimension (Lack of normative integration), the questions 5 and 6, and 7 and 8 were put together and re-named under new titles. Questions 4 and 5 specifically refer to volunteering to help others, and therefore, they are more consistent, but questions 7 and 8, as well as minor changes in the translation into Persian are related to the observance of other social norms that are strongly linked to the cultural, social context of each society and are defined in a different way in each community, for example, the subject of question 7 is to observe the rules for the collection of waste that has different levels in every society.

Theoretically, the concept of social exclusion in any society is based on cultures, norms, economic conditions, social welfare, social policy, laws and customs of the society, and the validation of its means of measuring in different societies, observing the conditions of those societies, yields a more wider, correct and realistic understanding. To examine the six-factor model derived from exploratory factor analysis, a confirmatory factor analysis was performed with 300 female-headed households.

According to both factor analyses with a population of 500 female-headed households, the final model is valid enough to be accepted. Considering the novelty of the concept in Iran and lack of a standardized instrument to measure it, this study paves the way for further studies

and considers social exclusion as a measurable concept. It also allows for the use of the results of social exclusion measurement in policy making processes and planning.

The limitations of this study included: difficulty of extracting and collecting data from the women heading households; and also taking into account all cultural and social considerations in translating, editing and appropriating the questionnaire.

It seems that more research is needed on the conceptualization and measurement of social exclusion with regard to the cultural and social considerations.

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