



Factor Analysis and Psychometric Characteristics of the Persian Version of Savoring Belief Inventory (SBI)

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Abstract

Background: The concept of “savoring” is the ability to regulate positive emotions through perceiving pleasurable life events. The savoring beliefs inventory (SBI) is a self-report instrument for “savoring” assessment. Objective: This study is aimed to investigate the psychometric characteristics of the Persian version of SBI in a non-clinical sample.

Methods: Factor analysis, structural, translation, divergent and convergent validities, as well as retest reliability of SBI were investigated in 365 students of Shahed University. The tools used in the present study included satisfaction with life scale (SWLS), neuroticism and extraversion subscales of NEO five-factor inventory, life orientation (LOT), Rosenberg self-esteem, Beck hopelessness scale (BHS), and prosocial tendencies measure revised (PTM-R).

Results: The results of the confirmatory factor analysis showed that 5 factors (reminiscing, not reminiscing, anticipating, not anticipating, and savoring the moment) of the Persian version of the SBI are more valid and reliable. Divergent and convergent validity of the questionnaire were evaluated by satisfaction with life scale (SWLS), neuroticism and extraversion, life orientation (LOT), Rosenberg self-esteem, and Beck hopelessness scale (BHS) were suitable. Prosaical tendencies measure was only correlated with one of the factors of savoring belief inventory. The results of confirmatory factor analysis supported the goodness of fit of the five-factor structure of the questionnaire.

Conclusions: The results indicated that the Persian version of the savoring belief inventory has good psychometric characteristics in the general population. Thus this instrument can be used in research and clinical fields with confidence.

Keywords: Savoring Beliefs Inventory, Psychometric Characteristics, Factor Analysis

1. Background

Psychology is traditionally concentrated on disturbances and malfunctions. However, there is an increasing interest towards positive performance, its causes, and consequences. The positive psychology approach was introduced in 1988 by Martin Seligman (1), and the notion of well-being was then emerged, which its meaning is not restricted to lack of psychological distress (2-4). The ability to manage negative events reduces distress while there is no guarantee that positive events could promote well-being (5). In positive psychology, “savoring” involves noticing and appreciating the positive aspects of life - the positive counterpart to coping. Savoring is more than “pleasure” - since it also involves mindfulness and conscious attention to the experience of “pleasure” (6). “Savoring” is

the self-regulation of positive emotions in an attempt to create, maintain, or increase positive affection by accompanying positive experiences in the past, present, and future (7, 8). Therefore, our “savoring” capacity depends on intentionally and voluntarily creating, strengthening, and lengthening the savoring as well as experiencing positive events. Active management of positive emotions not only entails the “savoring” capacity but also requires manipulation and perpetuation of the positive emotions. The difference in the capacity of positive delightful experiences can lead to a difference in positive well-being; for example, it is hard to enjoy predictions of positive events that we are not sure whether we will enjoy them. Therefore, understanding individual differences in terms of “savoring” might help understand differences in positive performance (8). To explain the concept of “savoring” it is impor-

tant to distinguish between conceptual components including “savoring experience”, “savoring process”, “savoring strategy”, and “savoring beliefs”. “Savoring experience” involves senses, perceptions, thoughts, behaviors, and feelings that accompany the mindfulness and perception of a positive stimulus, such as spending time with a good friend. “Savoring process” is a series of psychological and physical activities, which increase over time and turns a positive stimulus that the person enjoys into positive feelings. “Savoring strategy” deals with the components of the “savoring process” - a specific objective thinking or behavior that either increases or decreases the intensity and duration of positive emotions, such as closing eyes, focusing, and avoiding distraction once drinking a delicious beverage. “Savoring beliefs” are one’s perceptions of his ability to enjoy positive experiences (5, 6, 8). Bryant (8) developed the Savoring Beliefs Inventory (SBI) as a self-report tool for assessing savoring beliefs with respect to “enjoyment at a moment”, “savoring by reminiscing”, and “savoring through anticipating”. According to Bryant (8), “savoring” beliefs include at least 3 distinct orientations: 1. before a good upcoming event and while waiting for it, individuals may create good feelings within themselves (savoring through anticipating). 2. While a good event is happening, individuals may lengthen and strengthen their positive feelings through specific thoughts or behaviors (enjoyment at a moment). 3. After a good event, people somehow try to lengthen and strengthen their positive feelings by recalling them (savoring by reminiscing). These processes create a sense of control over the positive emotions once they are reflected in stronger “savoring” beliefs. Studies on “savoring” has been significantly increased (9). Based on these studies, the score of SBI is positively correlated with levels of positive affection, optimism, and life satisfaction, as well as has a negative relationship with neuroticism, hopelessness, and depression (8, 10, 11). The ability of “savoring” predicts the intensity and frequency of positive emotions, positive affections, and life satisfaction (8, 12, 13). In a study conducted in South Korea, the psychometric characteristics of “savoring” inventory completed by Seoul college students were examined and the confirmatory factor analysis of 5 factors including anticipation (positive and negative), present enjoyment, and reminiscence (positive and negative) was found to be more appropriate. In this study, “savoring” was positively associated with “life satisfaction”, “positive emotion”, “extroversion”, and “optimism”, as well as negatively associated with negative emotions; there was no relationship between that and prosocial (socially desirable) responses (14). Obviously, the difference in “savoring” beliefs has important clinical implications. A tool for evaluating individual beliefs regarding the “savoring” capacity helps clinicians assess the

strengths and weaknesses of their patients in managing positive affections. For example, some people may have problems in anticipating positive outcomes and be scared of the imminence of positive events. Some may not feel good about their past because they are incapable of recalling positive events in a delightful way. Others may not encounter problems in anticipating forthcoming positive events or recalling old positive events, but feel that they can’t enjoy their experiences as much as they want. The current tools are not sufficient to fully understand the positive performance (frequency, severity, and duration of positive affections). For example, consider 2 people who report a low frequency, a low intensity, and a short period of positive affection in face of positive events; one of which believes that despite all his efforts he hasn’t been able to feel positive about positive events while the other believes that he could have fully enjoyed positive events, but has temporarily chosen to eliminate such pleasure in favor of other activities. The current measurement tools, given the low positive affection reported, assume that these 2 are equally well below positive performance levels. However, it is obvious that the first person has some weaknesses in some of the necessary skills for positive performance, while the other has no such weaknesses. Therefore, it is essential to evaluate psychometric characteristics as an instrument for “savoring” beliefs measurement, so that in Iran, the levels of positive performance of the patients can be more accurately examined. In the present study, we examine factor analysis, convergent validity, and reliability of this instrument.

2. Methods

2.1. Statistical Population, Sample and Methodology

The statistical population of this study consisted of all undergraduate students of the universal program of Shahed University in 1395 - 96. The research sample was comprised of 365 students of Shahed University who were selected by the available sampling method. Questionnaires were distributed among all subjects either at the end or at the beginning of the classes, then they were asked to answer the questionnaire if they would like. To address the ambiguities, the researcher also participated in the meeting. The questionnaires were presented in such a way that each participant, in addition to completing the “savoring” questionnaire, responds randomly to one of the optimism, life satisfaction, self-esteem, hopelessness, neuroticism, extraversion, or prosocial tendencies scales as well. Therefore, in total, in addition to the “savoring” questionnaire, 57 life orientation, 54 life satisfaction, 53 self-esteem, 46 hopelessness, 52 neuroticism, 51 extraversion, and 42

prosocial tendencies questionnaires were also completed. 30 subjects were reevaluated within 2 weeks.

2.2. Research Tools

2.2.1. Savoring Beliefs Inventory (SBI)

Studies revealed that based on people's beliefs, the capacity of "savoring" positive outcomes is a form of perceived control over positive emotions, which is independent of beliefs about coping (a form of perceived control over negative emotions). The 24-item SBI is a valid and reliable scale to assess beliefs about one's capacity to savor positive experiences through anticipation, present enjoyment, and reminiscence. This scale has a positive relationship with extroversion, optimism, internal locus of control, self-control behaviors, life satisfaction, values fulfillment, self-esteem, intensity, and frequency of happiness (a correlation between 0.17 and 0.49) as well as a negative one with neuroticism, anhedonia, hopelessness, and depression (a correlation between -0.19 and -0.58) (11). The Cronbach's alpha coefficient for the whole scale was 0.90, which varied between 0.68 and 0.89 for the subscales (11).

2.2.2. Life Orientation Test (LOT)

This 8-item questionnaire evaluates the expectations one has about the outcomes of his life. The items are answered on a four-point Likert scale (strongly agree, agree, disagree, and strongly disagree). Cronbach's alpha and test-retest reliability were 0.74 and 0.87, respectively (15). Kajbaf, Oreizi and Khodabakhshi (16) performed a test on 120 subjects who resided in Isfahan and calculated percentage ratings and T scores as a norm. Cutting points were reported based on 10% and 90% ratings. The concurrent validity of LOT with depression and self-control were 0.649 and 0.725, respectively. The factor analysis also revealed 2 factors of hope for the future and positive attitude towards the events.

2.2.3. Satisfaction with Life Scale (SWLS)

This scale is a 5-item instrument developed by Diener et al. (17) to measure the cognitive component of the subjects' well-being. This scale was translated into German, Spanish, and Japanese by Suh, Diener, Oishi, and Triandis (17) in an intercultural study. Each item has 7 options and is scored from 1 to 7. In Iran, Tagharrobi, Sharifi, Sooki, and Tagharrobi (18) reported that internal consistency coefficient of this scale in nursing and midwifery faculty students varies in the range of 0.85 - 0.95. The validity of this instrument determined by the short form of quality of life enjoyment and satisfaction questionnaire (QLES-QSF) was 0.7 and 0.78, respectively. According to the Bayani, Koochaki, and Goodarzi (19) study, the reliability of SWLS in Azad University students was found to be 0.96 using the test-retest

method and 0.84 using Cronbach's alpha method. The construct validity of SWLS was estimated by convergent validity (Oxford happiness questionnaire (OHQ) and Beck depression inventory (BDI)). The correlation of SWLS with OHQ reported to be 0.78 in boys and 0.62 in girls and its correlation with BDI was 0.59.

2.2.4. Rosenberg Self-Esteem Scale (RSES)

This scale consists of 10 items, half of which are expressed by negative sentences (I wish I could have more respect for myself) and the others by positive sentences (I have a positive attitude towards myself). In the study carried out by Alizadeh (20), the reliability of RSES determined by Cronbach's alpha and retest method was reported to be 0.74 and 0.82-0.88, respectively (20).

2.2.5. Beck Hopelessness Scale (BHS)

BHS is a 20-item self-report inventory designed to measure respondents' negativity and pessimism regarding the future. BSH items are in the form of true/false questions and its total score varies between 0 to 20. The higher scores mark the more severe hopelessness. The internal consistency of BSH estimated by Cronbach's alpha in Iran was 0.79. In addition, using factor analysis 5 factors including hopelessness in achieving desires, hopelessness about the future, attitudes towards the future, future prospects, and trust in the future were extracted, which account for 48.9% of the total variance.

2.2.6. NEO Five-Factor Inventory (NEO-FFI) (Neuroticism and Extroversion Subscales)

In 1989, Costa and McCrae designed NEO Five-Factor Inventory to measure 5 main personality factors known as big main personality traits (21). NEO-FFI is composed of 60 items, which merely measure the big main personality traits. Test-retest reliability of this inventory was between 0.86 - 0.90. Moreover, the calculated internal consistency of subscales was 0.44 to 0.89 (22). The short form of NEO-FFI has been translated into many languages and has then been validated. Roshan and colleagues (22) were among Iranian researchers who sought to translate and validate NEO-FFI.

2.2.7. Prosocial Tendencies Measure -Revised (PTM-R) (Carlo et al., 2003)

The 23-item self-reported version of PTM was originally developed to evaluate 6 types of prosocial behavior among college students. Carlo and Randall (23) reported suitable model fitting coefficients using confirmatory factor analysis for college students. In the revised version of PTM, 2 items were added to the previous ones (24). According to Carlo and Randall (23) 6 subscales and their corresponding

Cronbach's alpha coefficients are: public (4 items, 0.78), anonymous (5 items, 0.85), dire (3 items, 0.63), emotional (4 items, 0.75), compliant (2 items, 0.80), and altruistic (5 items, 0.74) prosocial behaviors. In another study conducted by Carlo and his colleagues (25) the following values were obtained for Cronbach's alpha: public (4 items, 0.56), anonymous (5 items, 0.78), dire (3 items, 0.63), emotional (4 items, 0.82), compliant (2 items, 0.73), and altruistic (5 items, 0.73). PTM-R is answered on a five-point likert scale ranging from 1 (does not describe me at all) to 5 (describes me completely), which the 5th item score is reversed. The minimum and maximum scores the respondent can achieve are 25 and 125, respectively. Cronbach's alpha determined in the study carried out by Kajbaf, Sajjadian, and Noori (25) was 0.861 and the concurrent validity of PTM-R with scales including global prosocial behaviors, sympathetic concerns, altruistic values, and social responsibility motivation was found to be statistically significant.

3. Results

The studied sample was composed of 365 individuals, out of which, 248 (67.9%) were women and 117 (32.1%) were men. 310 (85.6%) participants were single and 52 (14.4%) were married. 135 (36.9%) subjects were from the faculty of humanities, 135 (36.9%) were from the faculty of engineering, and 96 (26.2%) were from the faculty of basic sciences. All subjects were undergraduate students out of which 164 (44.8%) were 18 - 20, 169 (46.2%) were 21 - 25, and 33 (9%) were 26 years old.

Table 1. Frequency Distribution and Percentage of Participants in the Study

Variables	Number	Percent
Gender		
Male	117	32.1
Female	248	67.9
Field of study		
Humanities	135	36.9
Engineering	135	36.9
Basic sciences	96	26.2
Marital status		
Single	310	85.6
Married	52	14.4
Age		
18 - 20	164	44.8
21 - 25	169	46.2
26+	33	9

3.1. Validity Evaluation

In order to investigate the validity of SBI, various methods such as translation validity, construct validity, and convergent as well as divergent validity were used.

3.2. Translation Validity

In this study, forward-backward translation validity method was applied for translation validity assessment. To this end, 2 psychologists who spoke English fluently were initially provided with SBI and were asked to translate this questionnaire independently and then resolve their translations problems and drawbacks through an efficient discussion. Then, 2 others who were fluent in both Persian and English and know nothing about the subject of the SBI were asked to retranslate the translated questionnaire into English. In addition, the new questionnaire and the original one were then given to a team of experts who were also fluent in both Persian and English with the aim of resolving the possible problems of translation to ensure the translation validity. Afterward, the obtained questionnaire was performed on a few subjects so that the probable errors can be corrected for the final application.

3.3. Structural Validity

After verifying the translation validity, exploratory and confirmatory factor analysis methods were used to assess structural validity. At first, to perform exploratory analysis, the items which reduced the adequacy of model data for exploratory factor analysis were evaluated using antimymistic matrix but in the end no item was excluded from the 24-item questionnaire. In the exploratory factor analysis, the correspondence between items and extracted factors was examined using the main component and ProMax rotation methods through 365 observations. Exploratory factor analysis led to the identification of 5 factors with a cumulative variance of 59% and the Kissman Meyer index of 0.93, both of which are good indices of exploratory factor analysis. After the exploratory factor analysis, confirmatory factor analysis was performed using maximum likelihood estimation (ML) method and Chi-square test. Since the Chi-square statistic measures the difference between the observed and estimated matrices, its high value indicate the badness of fit of the model and a significance level above 0.05, which is considered as the confirmation of the assumed model and factor analysis. These values are shown in Table 2. As shown in Table 2, it can be concluded that the goodness of fit indices are well within the acceptable range. Therefore, confirmatory factor analysis also supports the construct validity of the questionnaire.

Table 2. Results of Confirmatory Factor Analysis of Savoring Beliefs Inventory Items

Variables	Results of Confirmatory Factor	
RMSEA	0.05	Less than 0.05
GFI	0.913	Up to 0.9
χ^2/df	1.95	Less than 2
P Value	< 0.001	Up to 0.05
df	223	
χ^2	434.25	

Table 3. Factor Loading Coefficient of Confirmatory Factor Analysis

Variables	Question	Factor Loading
Anticipation	1	0.393
	7	0.676
	13	0.717
	19	0.854
Not anticipation	4	0.444
	10	0.616
	16	0.423
	22	0.667
Savoring the moment	2	0.495
	5	0.476
	8	0.568
	11	0.530
	14	0.658
	17	0.547
	20	0.605
	23	0.608
Reminiscing	3	0.677
	9	0.669
	15	0.658
	21	0.740
Not reminiscing	6	0.684
	12	0.659
	18	0.686
	24	0.645

3.4. Convergent and Divergent Validity

To evaluate convergent and divergent validity, significance and the correlation between the scores obtained from delightful experiences scales and their subscales and satisfaction with life scale (SWLS), neuroticism and extroversion subscales of NEO five-factor inventory, optimism,

life orientation test (LOT), Beck hopelessness scale(BHS), and Rosenberg self-esteem scale were examined. Based on the results, the convergent and divergent validity of the questionnaire can be verified.

3.5. Reliability

As shown in Table 5, the Cronbach's alpha of the total scale was 0.94 while it was 0.70 or higher for each subscale, which demonstrates the good internal consistency of the questionnaire.

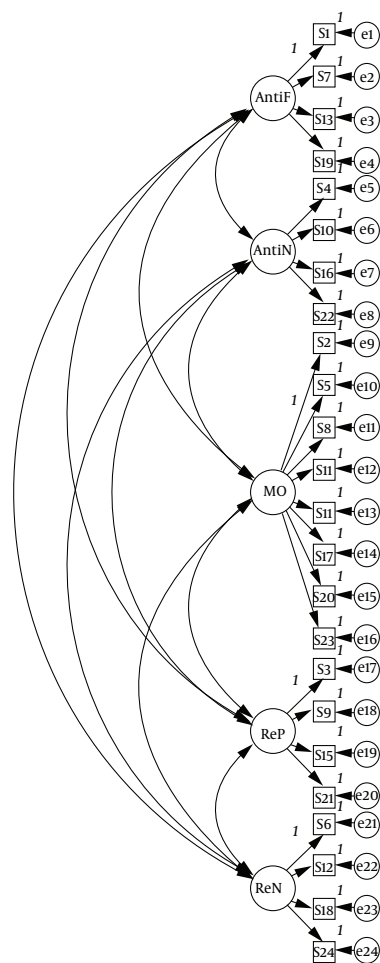


Figure 1. Factor Model Fitted for SBI Inventory Data

4. Discussion

Since there was no appropriate instrument to measure the perception of the positive aspects of life in Iran, this

Table 4. Correlation results SBI inventory and subscales with satisfaction with life scale (SWLS, neuroticism and extraversion subscales of NEO five-factor inventory ,optimism, Rosenberg self-esteem, Beck hopelessness scale (BHS), as well as prosocial tendencies measure revised (PTM-R).

Scales	Total Score	Savoring the Moment	Anticipating	Not Anticipating	Reminiscing	Not Reminiscing
Self-esteem	0.38 ^a	0.49 ^a	0.29 ^b	-0.10	0.35 ^a	0.23
Satisfaction With Life	0.47 ^a	0.55 ^a	0.25	0.35 ^a	0.35 ^a	0.21
Prosocial Tendencies	0.21	0.16	0.37 ^b	0.14	0.06	0.13
Extraversion	0.46 ^b	0.47 ^a	0.28 ^b	0.35 ^b	0.40 ^b	0.28 ^a
Neuroticism	-0.35 ^b	-0.45 ^a	-0.22	-0.36 ^b	-0.24	-0.12
Hopelessness	-0.62 ^a	-0.64 ^a	-0.55 ^a	-0.53 ^a	-0.54 ^a	-0.66 ^a
Optimism	0.53 ^a	0.59 ^a	0.32 ^a	0.45 ^a	-0.36 ^a	0.38 ^a

^aP < 0.01.
^bP < 0.05.

Table 5. The Results of Retest Reliability and Cronbach's Alpha SBI Inventory and Its Factors

Factors	Cronbach's Alpha	Retest Reliability
Anticipation	0.75	0.70
Not anticipation	0.70	0.72
Savoring the moment	0.88	0.91
Reminiscing	0.79	0.62
Not reminiscing	0.76	0.64
Total	0.94	0.87

study was carried out with the aim of determining the psychometric characteristics of “savoring” beliefs inventory. The results of confirmatory factor analysis provided robust evidences for the validity and reliability of “savoring” beliefs inventory in the Iranian society. This finding is consistent with the results of the study conducted by Kwon and Yang Jin (14). Thus, the five-factor version was used to measure this factor. The results of the convergent validity indicated that all factors of the “savoring” beliefs inventory are correlated with hopelessness and optimism while some factors are correlated with self-esteem, life satisfaction, and extraversion. These results correspond with the findings of earlier studies (8, 10-14). Prosocial tendencies scale is only correlated with one of the factors of “savoring” beliefs inventory (anticipating the “positive” pleasure). Moreover, no relationship was found between SBI factors and prosocial behaviors in previous studies (9, 15). In addition, the reliability of SBI was assessed using internal consistency and test-retest methods. The results showed that SBI is highly reliable in the students’ population. Cronbach’s alpha coefficient showed a high internal consistency between items which was consistent with the findings of Bryant (8) as well as Kwon and Yang Jin (14). Ac-

ording to the results, the 24-item version of SBI has appropriate psychometric characteristics in the Iranian society so it can be used to measure “savoring” since there is no longer any uncertainty about its efficiency.

One of the limitations of the present study is its student population. It is suggested that the psychometric characteristics of SBI be investigated in non-student populations so that it can be used for other groups if it has proper psychometric characteristics.

The “savoring” beliefs inventory is also helpful in clinical settings. For example, experts can use this tool as a means to identify people’s weaknesses in “savoring” capacity, which are most likely prevalent in depression, anxiety, schizophrenia, and life-threatening situations (8). The SBI is effective in evaluating the effectiveness of therapeutic interventions aimed at educating people about how to predict or sustain their pleasures. For example, in those who feel they are incapacitated in gaining pleasure, effective treatment may include eliminating the factors that obliterate happiness. People who are weak in reminiscing and sustaining their pleasures may wonder how they can actively create happy memories by going to their positive experiences.

Instead of reacting to positive events, people can learn to actively savor those events. To consciously anticipate positive experiences, pleasant moments should be exacerbated and perpetuated by the presence of mind and such experiences should be deliberately recalled. SBI can help experts to evaluate the effect of such treatments on “savoring” skills.

The SBI is a measurement tool in positive psychology. In contrast to other positive emotion instruments, this scale measures people’s perception of their capacity to “savor” or enjoy their past, future, and present. In the savoring process, the consciousness accompanied with the presence of mind is needed. There is no deliberate mindfulness

regarding pleasant experiences (6) and no other means to measure the positive experiences' savoring. Thus, to assess the level of positive emotional regulation of patients, it is recommended that clinicians use strategies such as "savoring" beliefs inventory along with other evaluation tools to improve their positive performance.

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