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Development of Realistic Optimism Scale

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The present paper aims to develop a scale to measure realistic optimism. For this purpose, the researcher developed a preliminary scale of realistic optimism consisting of 16 items (including four reversal items), based on the definition of the realistic optimism by Magari (2013). The researcher conducted survey on 260 university students (144 boys and 116 girls) using the preliminary scale of Realistic Optimism and Saitou and Okayasu's (2010) Resilience Scale. As a result of exploratory factor analysis, 13 items and 3 factors were extracted. These 3 factors are future orientation, flexibility, and will/courage. This is the tentative Realistic Optimism Scale. Next, the researcher conducted another survey on 943 university students (478 boys and 465 girls) using the tentative scale. 12 items and 3 factors were extracted using exploratory factor analysis. Pearson's correlation coefficient was calculated between the Resilience Scale and the Realistic Optimism Scale. The scale demonstrated convergent validity as a significant positive correlation was observed between the factors of the Realistic Optimism Scale and the factors of the Resilience Scale. Furthermore, the test-retest method (N=210) was used to examine the reliability of the scale. Results of Pearson's correlation coefficients of the

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CONTEMPORARY SOCIAL SCIENCES, Vol. 30, No. 4 (October-December), 2021 Peer Reviewed, Indexed & Refereed International Research Journal test-retest method indicated high positive correlations for each factor. So, this scale is designated as the main Realistic Optimism Scale.

[Keywords : Realistic optimism, Future orientation, Flexibility, Will/Courage]

1. Introduction

Optimism is a broad concept that has attracted many scholars and researchers in recent times. Different researchers have defined it in various ways concentrating on certain characteristics and perspectives of optimism. Carver, Scheier, and Segerstorm (2010) defined optimism as the tendency to expect positive outcomes in the future and view things in a positive light, and pessimism as the tendency to expect negative outcomes and to view things in a negative light. Optimists are people who expect good things to happen to them, while pessimists are people who expect bad things to happen to them (Scheier and Carver, 1987).

Recent psychological research indicates that optimism is a coping mechanism that reduces stress in life (Hanssen et al., 2014), promotes a positive way of life, and leads to happiness (Conversano et al., 2010). In addition, optimism has a significant effect on various areas of life such as education and health (Coelho et al., 2018).

As the concept of optimism has been explored from various points of view, different scales have also been developed to measure it. Weinstein (1980) explained that people make an error in judgement while thinking about being victims of misfortune. They tend to think that others are more likely to encounter misfortunes in life than themselves. Weinstein named it unrealistic optimism. In order to examine optimism in terms of the cognitive bias of individuals rather than simply the degree of expectation they have, Weinstein (1980) developed the Unrealistic Optimism Scale. It consists of 42 items, including positive events such as "Like post-graduation job" and "Owning your own home," and negative events such as "Attempting suicide" and "Divorced a few years after married." The Unrealistic Optimism Scale was developed to examine the likelihood of these events occurring to oneself and others in the future.

Dispositional optimism is a concept proposed by Scheier and Carver (1985). Carver and Scheier (1982) developed research that hypothesized that optimism has a significant influence on human behavior. Based on this study, Scheier and Carver (1985) attempted to create a Life Orientation Test (LOT) consisting of 12 items (including four filler items) from the perspective of dispositional optimism. The LOT was designed to measure the degree of general expectation for the future.

Later, Scheier, Carver, and Bridges (1994) revised the LOT and created the Life Orientation Test Revised (LOT-R). The LOT-R consists of 10 items (six items on optimism and pessimism and four filler items), excluding two undesirable items from LOT. Chang, Maydeu-Olivers, and D'Zurilla (1997) created a new Extended Life Orientation Test (ELOT) by considering optimism (6 items) and pessimism (9 items) as separate concepts (20 items in total, including 5 filler items). These optimism scales represented by LOT, LOT-R, and ELOT are all attempts to measure dispositional optimism as an individual tendency.

Dember et al. (1989) developed an Optimism and Pessimism Scale from the perspective of both optimism and pessimism. It consists of 56 items (18 optimism items, 18 pessimism items, and 20 filler items). This scale was developed from the perspective of both Weinstein's (1980) cognitive bias and Scheier and Carver's (1985) generalized outcome expectancies for the future.

Explanatory style, which views optimism in terms of causal attribution, was developed by Seligman (1991). Depending on how people perceive events in their lives, they can be optimistic or pessimistic (Seligman, 1991). This concept is based on Seligman's own theory of "learned helplessness" (Seligman & Maier, 1967) and "attributional style" (Seligman et al., 1979). The explanatory styles of optimists and pessimists could be explained in three dimensions: temporary-permanent, specific-universal, and internal-external.

Peterson et al. (1982) developed the Attributional Style Questionnaire (ASQ) based on this perspective of explanatory style. This questionnaire provides 12 hypothetical situations (6 good and 6 bad) to the survey participants. Participants are asked to write down a major reason for each situation. Then, they are asked to rate it from the perspective of each of the three dimensions mentioned above.

Another concept explored in the study of optimism is realistic optimism. According to Schneider (2001), unrealistic optimism is a tendency to have a positive viewpoint regardless of circumstances. On the other hand, realistic optimism is hoping, and working towards positive outcome but also being aware of circumstances and limitations. Schneider (2001) pointed out that the characteristics of realistic optimists are: (1) focusing on own favorable experiences in the past, (2) moving toward the future with hope while objectively recognizing and accepting reality, and (3) having the will and making efforts toward desired outcomes.

Magari (2013) defined realistic optimism as a way of thinking and living that allows one to have a positive outlook on the future even when encountering various difficulties. He included the ideas of Schneider (2001) and the cognitive aspect represented by Seligman's (1991) explanatory style along with the philosophical perspective on optimism. In his definition, he has also covered ideas expressed by prominent personalities such as Alain, Keller, and Mandela.

Alain (1953) says, "Pessimism comes from the temperament, optimism from the will," and from a philosophical perspective, "will" is an important element of optimism. In addition, Keller (1904), a social welfare activist, states that "optimism is the faith that leads to achievement; nothing can be done without hope." Mandela (1994) also points out the importance of "future orientation."

Magari (2013) states that realistic optimism consists of three factors : "hope/future-orientation", "flexibility", and "will/ courage". These three factors are considered to be interrelated, influencing, and interacting with each other in a way that strengthens each other. Magari (2015) mentioned that the concept of resilience is at the center of realistic optimism.



Magari (2013) created a questionnaire based on these factors. However, he did not develop it into a scale to measure realistic optimism. Therefore, this study attempted to create a new scale to measure realistic optimism by revising the contents of Magari's questionnaire (2013).

2. Creating Preliminary Scale of Realistic Optimism: Study I

2.1 Methodology

2.1.1 Survey Period and Participants

274 students of a university in Tokyo participated in the research. Data from 260 participants (144 boys and 116 girls) were included in the analysis, excluding responses with missing or incorrect entries. The survey was conducted in July 2017.

2.1.2 Measures

Preliminary scale of Realistic Optimism

Based on the questionnaire made by Magari (2013), the researcher developed a preliminary scale of realistic optimism consisting of 16 items (including four reverse items). Researcher took permission from Magari to make changes to his questionnaire and develop it as a scale.

The Resilience Scale

Resilience is at the center of the realistic optimism in the concept proposed by Magari (2013). So, the researcher used the Resilience Scale developed by Saito and Okayasu (2010) to examine the convergent validity of the preliminary scale of realistic optimism.

2.2 Results

2.2.1 Examination of the Factor Structure

In order to clarify the factor structure, exploratory factor analysis (the principal-axis factor method and Promax rotation) was conducted using the raw scores of all 16 items. The reverse items (item 2, item 6, and item 10) were processed by reversing the raw score by subtracting each raw score from "6", since the 5-point Likert method was used as the response format for questions. As a result, 13 items and 3 factors were extracted, excluding the 3 items with factor loadings less than .35 (Table-1).

The items included in the first factor were those related to future orientation and hope, such as "I am living with goals for the future" and "I am living with a dream". Therefore, the first factor was named "future orientation".

The second factor consisted of items such as "Even if I fail, I am quick to recover from it", and "Even if I had an unpleasant

experience, I move on immediately", which indicated flexibility and quickness of recovery. So, the second factor was named "flexibility".

Since the third factor was related to willpower and firmness, such as "I feel anxious and frightened even for small things (reversed item)" and "I often tend to think about past (reversed item)", it was named "will/courage".

Items	Fa	ctor Loadir	ngs
	Ι	II	III
I Future Orientation ($a = .83$)		•	
12. I am living with goals for the future.	.92	14	.05
9. I am living with a dream	.83	16	.09
15. There is hope in my life.	.66	.11	.05
11. I think difficulties or hardships are rewarding for self.	.59	.22	13
13. Even if I lose once, I will not always lose.	.47	.14	.06
8. I step up for things by myself.	.37	.30	.08
II Flexibility ($a = .84$)	-	-	
4. Even if I fail, I am quick to recover from it.	06	.80	01
1. Even if I had an unpleasant experience, I move on immediately.	06	.67	.18
7. I am not worried about small things.	02	.65	.21
3. I am positive about everything.	.22	.65	03
III Will/Courage (<i>a</i> = .61)			
2. I feel anxious and frightened even for small things. (R)	02	.04	.58
6. I often tend to think about past. (R)	02	.01	.58
10. If one thing goes wrong, I think that it will happen to other things as well. (R)	.06	03	.57
(R)Reverse Item I	-		
inter-factor correlation II	.40	-	
	.22	.53	-

Table-1 : Result of Factor Analysis of the Preliminary Realistic Optimism Scale (N=260)

2.2.2 Test of Reliability (Internal Consistency)

In order to examine the internal consistency of the factors, Cronbach's alpha coefficient was calculated. The first factor, "future

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orientation (a = .83)'' and the second factor, "flexibility (a = .84)'' showed high internal consistency. The third factor, "will/courage (a = .61)'' also showed a certain level of internal consistency.

2.2.3 Test of Convergent Validity

In order to examine the convergent validity, the researcher calculated Pearson's correlation coefficient with the resilience scale. As a result, moderate to highly significant positive correlations were found between the factors of the Resilience Scale and that of Realistic Optimism Scale (r = .16 to .71), confirming convergent validity (Table-2). Only for the relationship between "social support" and "will/courage" (r = .07), no correlation was found.

Table-2 : Convergence between the Realistic Optimism Scale and the Resilience Scale (N=260)

Factors	Competence	Social Support	Positive Evaluation
I. Future Orientation	.71**	.35**	.35**
II. Flexibility	.31**	.16**	.66**
III. Will/Courage	.21**	.07	.42**
Realistic Optimism Score (Total)	.54**	.25**	.65**

**...*p* <.01

As reliability and convergent validity were confirmed, and this scale with 13-item, 3-factor was used as a tentative Realistic Optimism Scale.

3. Creating Main Scale of Realistic Optimism : Study II

3.1 Methodology

3.1.1 Survey period and participants

The survey was conducted with 961 university students (490 boys and 471 girls) at three universities in the Tokyo metropolitan area. Data of 943 students (478 boys and 465 girls) was used in the analysis, excluding those whose responses were found to be incomplete or incorrect. The survey was conducted between December 2017 and January 2018.

3.1.2 Measure

Tentative Realistic Optimism Scale

In order to create the final scale, the researcher conducted a survey with the tentative scale consisting of 13 items and 3 factors created in Study I. Five-point Likert method was used for answering the questionnaire.

The Resilience Scale

To examine the convergent validity of the realistic optimism scale, the researcher used the Resilience Scale by Saito and Okayasu (2010) as in Study I using 5-point Likert method.

3.2 Results

3.2.1 Examination of Factor Structure

When the mean (*M*) and standard deviation (*SD*) of each of the 13 items of the tentative scale were calculated, a ceiling effect was found for item 13, "Even if I lose once, I will not always lose" (M+SD=5.02). Therefore, item 13 was excluded. Then, factor analysis was conducted using the principal-axis factor method and Promax rotation on the remaining 12 items. As a result, 3 factors and 12 items were extracted. The results of the factor analysis are shown in Table-3.

Table-3 : Results of Factor Analysis of the Realistic Optimism Scale (N=943)

Items	Fa	ctor Loadir	ıgs
	Ι	II	III
I Future Orientation ($a = .83$)			•
12. I am living with goals for the future.	0.94	-0.17	0.02
9. I am living with a dream.	0.87	-0.12	0.00
15. There is hope in my life.	0.62	0.15	-0.02
11. I think difficulties or hardships are rewarding for self.	0.54	0.10	0.00
8. I step up for things by myself.	0.51	0.10	0.02
II Flexibility ($a = .84$)			
4. Even if I fail, I am quick to recover from it.	-0.05	0.86	-0.03
1. Even if I had an unpleasant experience, I move on immediately.	-0.03	0.81	-0.01

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7. I am not worried about small things.	0.02	0.65	0.11
3. I am positive about everything.	0.26	0.62	0.00
III Will/Courage ($a = .61$)			
2. I feel anxious and frightened even for small things. (R)	-0.00	-0.03	0.60
6. I often tend to think about past. (R)	-0.03	0.08	0.54
10. If one thing goes wrong, I think that it will happen to other things as well. (R)	0.03	-0.05	0.53
(R)Reverse Item I	-		
inter-factor correlation II III	.47	-	
	.20	.50	

The items in each of extracted factors were the same as in the tentative Scale of Realistic Optimism. So, the researcher named the extracted factors same as in the tentative scale that are: "future orientation" (5 items), "flexibility" (4 items), and "will/courage" (3 items).

The values of inter-factor correlations were r = .50 for "flexibility" and "will/courage", r = .47 for "future orientation" and "flexibility", and r = .20 for "future orientation" and "will/courage", indicating that the factors are related to each other. These results support the idea that the three factors of realistic optimism are interrelated, influence each other in a way that strengthens each other.

3.2.2 Test of Reliability (Internal Consistency)

Cronbach's alpha coefficient was calculated to examine internal consistency of all the factors. The values of .83 and .86, and .60 were obtained for "future orientation", "flexibility", and "will/courage" respectively. It confirmed a higher degree of internal consistency for the first two factors and a certain degree of internal consistency for the third factor.

3.2.3 Mean and Standard Deviation of the Realistic Optimism Scale and its Factors

The mean (*M*) and standard deviation (*SD*) of the factors were M = 22.54 (*SD* = 4.73) for "future orientation", M = 10.52 (*SD* = 3.43) for "flexibility", and M = 7.52 (*SD* = 2.46) for "will/courage". The *M* and the *SD* for the Realistic Optimism Scale was M = 40.59 (*SD* = 7.91) (Table-4).

Factors	Mean	Standard Deviation
I. Future Orientation (5 items)	22.54	4.73
II. Flexibility (4 items)	10.52	3.43
III. Will/Courage (3items)	7.52	2.46
Total (12 items)	40.59	7.91

Table-4: Mean and Standard Deviation of the Realistic Optimism Scale

3.2.4 Test of Convergent Validity

In addition, the researcher used the Resilience Scale to examine the convergent validity of the Realistic Optimism Scale (Table-5). In order to examine convergent validity, Pearson's correlation coefficient was calculated, and significant correlations were found for all the items. Values of r were .59 for "positive evaluation" and "flexibility", and .57 for "competence" and "future orientation", which showed a high correlation between these items. Also, there were high correlations between "positive evaluation" and "will/courage" at r = .34, "competence" and "flexibility" at r = .33, "positive evaluation" and "future orientation" at r = .45, and "social support" and "future orientation" at r = .30.

In addition, correlation between "positive evaluation" and "realistic optimism (total)" at .67 and "competence" and "realistic optimism (total)" at .56 were extremely high. The correlation between "social support" and "realistic optimism (total)" was positive at r = .28.

Factors	Competence	Social Support	Positive Evaluation
I Future Orientation	.57**	.30**	.45**
II Flexibility	.33**	.20**	.59**
III Will/Courage	.26**	.09**	.34**
Realistic Optimism Score (Total)	.56**	.28**	.67**

Table-5 : Convergence between the Realistic Optimism Scale and the Resilience Scale (N=943)

**...*p* <.01

3.2.5 Reliability test using Test-Retest Method

In order to examine the reliability of the final scale of Realistic Optimism, test-retest method was used. For this purpose, two surveys were conducted on the same participants with an interval of one month. The first survey (test) was conducted with a total of 313 students of the Department of Education at the University A in September 2019. A survey form with a random three-digit survey number was distributed to the survey participants, and they were informed that the survey number would be used for the second survey.

The second survey (retest) was conducted in October 2019 with the same students of the first survey. The total participants were 257 students. At the time of the second survey, participants were asked to write the same three-digit survey number used in the first survey on the survey form to ensure identification of the individual participants. A total of 210 participants who responded to both tests without errors were included in the analysis.

Pearson's correlation coefficient was calculated based on data of 210 university students who responded to both surveys. Result indicated high positive correlations for each factor with scores of r = .77 for "future orientation", r = .79 for "flexibility", and r = .63 for "will/courage".

In addition, the total score of the Realistic Optimism Scale was r = .80, indicating high reliability. Based on these results, the scale consisting of these 12 items was designated as the main scale of realistic optimism (Table-6).

Factors	
I. Future Orientation	.77**
II. Flexibility	.79**
III. Will/Courage	.63**
Total	.80**

Table-6: Correlation Coefficient in Test-Retest Method (N=210)

**...*p* <.01

4. Conclusion and Discussion

The present research aimed to create a realistic optimism scale. In Study I, 13 items of the tentative scale were obtained from the results of exploratory factor analysis of the preliminary scale of 16-items. Convergent validity test and internal consistency test were also performed, which showed significant positive results. In Study II, the tentative scale obtained in Study I was used for the second survey on university students at three universities. As a result, a total of 12 items and 3 factors were extracted. Further, the researcher performed a convergent validity test of the Realistic Optimism Scale with the Resilience Scale, which confirmed the correlation between the two. Also, the value of Cronbach's alpha coefficient confirmed high internal consistency, and the test-retest method confirmed the high reliability of the scale.

The first factor of the scale is the "future orientation", which consists of questions about the existence of goals and dreams for the future. The second factor is "flexibility", which consists of questions about getting out of unpleasant experiences and moving forward. The third factor is the "will/courage", which consists of items related to mental strength that is not affected by anxiety, fear, or past events. The characteristics of these three factors were considered to be consistent with the definition of each component of realistic optimism.

Realistic optimism is defined as a positive way of life that recognizes and accepts the harshness of reality but carries hope and will and maintains a positive outlook and orientation toward the future (Schneider, 2001) backed by human strength (Magari, 2013). Cleave (2012) also mentioned that realistic optimists tend to confront problems rather than avoid them and can adapt flexibly to negative situations without giving up. Realistic optimism can be expected to "broaden-and-build" positive emotions, increasing the expansion of individual activities and adaptability, as Fredrickson (2009) pointed out.

Shepperd et al. (2015) noted that sometimes people might exhibit a tendency of excessive optimism and that unrealistic optimism can lead to disappointment, regret, and other problems when expectations are not met. Optimism can also have adverse consequences, and sometimes optimism can discourage effort and persistence (Carver, Scheier, and Segerstrom, 2010). So, it is necessary that optimism has the element of reality to make it more effective as mentioned by Schneider (2001). This scale is an attempt to measure and deepen the understanding of realistic optimism.

The Realistic Optimism Scale which researcher has attempted to make in this study is based on the idea of the way of living by confronting the real difficulties of life as advocated by Alain (1953), Keller (1904), and Mandela (1994). Allport (1937) suggests that the use of will is an important personality trait and that willpower is a part of an individual personality. Fromm (1968) mentions that hope is a quintessential spiritual part of life and growth and an essential element in the process of human life. The researcher has attempted to incorporate these ideas into the realistic optimism scale in this study.

The possibilities of the use of this scale are various. Recently, the mental health environment of college students is not optimistic (Pedrelli et al., 2015). A study by Katayama, Mizuno, and Inada (2014) shows that more than half of the students are said to be in need of attention in terms of health and lifestyle. They point out that the effort to maintain and promote the mental health of college students is a challenge.

In this regard, using the Realistic Optimism Scale based on the perspective of positive psychology can be one of the effective ways to understand the positive way of life and mental health of university students.

The possibility of using this scale as an assessment instrument in psychological interviews and as a screening instrument to support adjustment in university and work environments should also be considered.

5. Future Research

In the future, it would be desirable to examine the distinctive validity of this scale using, for example, the Self-Rating Depression Scale (Zung, 1965). Also, it may be necessary to include new filler items to prevent the intention of this scale from becoming too clear.

Finally, in the process of developing this scale, the survey was conducted only on university students. So, it is necessary to examine the general applicability of the scale to various age groups by administering the scale to high school students, adults, and even the elderly.

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