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Turkish Adaptation of Generalized Expectancy for Success Scale: Reliability and Validity Studies

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Abstract

The aim of this study is to adapt the Generalized Expectancy for Success Scale, which was developed by Fibel and Hale (1978) and revised by Hale *et al.* (1992) into Turkish in terms of adaptation, reliability and adaptation. This study modelled by survey is a scale adaptation study. The scale was adapted into Turkish culture in terms of language equivalence, reliability and validity. The population of the study consisted of the students of the Kazim Karabekir Faculty of Education, Faculty of Literature, Faculty of Science and Faculty of Theology of Atatürk University. All students in the Faculty of Education, the Faculty of Literature, the Faculty of Science and the Faculty of Theology and the 4th grade students who are subject to the pedagogical formation program were tried to be reached and as a result, the research was conducted with 1450 students. The results have shown that the scale had language validity and translation period was implemented successfully. According to exploratory factor analysis's results, the structure was consisted of three factors- 21 items, which explained 46, 6% of variance. According to study results, it is determined that the adapted version of the scale is used as a reliable and valid instrument to assess the generalized expectancy for success of Turkish university students. The scale is also used to determine sub-dimensions e.g. individual expectancy, social interaction and failure as well as the generalized expectancy for success.

Keywords: Generalized expectancy for success, Scale adaptation, University students, Individual expectancy, Social interaction, Failure.

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Ethical: This study follows all ethical practices during writing.

Contents

Contribution of this paper to the literature

This study contributes to the existing literature by adapting the Generalized Expectancy for Success Scale, which was developed by Fibel and Hale (1978) and revised by Hale *et al.* (1992) into Turkish.

1. Introduction

Expectancy for success is defined as beliefs about how people will be good at their future positions (Eccles-Parsons *et al.*, 1983; Eccles and Wigfield, 1995). Another definition is that expectancy for success is a belief that people success their aims, solve the problems and be loyal to long-term career goals (Nevid and Rathus, 2007). Wigfield and Eccles (2000) said that these expectancy beliefs would be expectancies for success rather than expectancy for results.

Students' expectancies for success are affected by both their success choices and academic participations *e.g.* Struggle and persistence (Wigfield and Eccles, 2000). It reflects people's optimistic guesses about their personal futures. Optimistic opinions like these have positive effect upon physical and psychological goodness because it increases their self-confidences and values (Rathus and Nevid, 1995; Nevid and Rathus, 2007).

Wigfield (1994) stated that the relationship between expectancy for success and success performance was more in favour of the students who were talented in first years of school and thought to develop their talents via increasing struggle. When students have positive expectancies and values, they cope with changes and ambiguities in better and more active way (Wigfield and Gladstone, 2019). Students having high expectancies for success tend to internal focalization, and they show better academic performances and talents of pleasure adjournment than students having low expectancies for success. Students, who are goal and success focused, think as that they are in command of their academic and social destinies, and they show high desires and expectancies for success. They relate their successes and failures to their struggles reflecting their self-confidences and strong sense of self (Yong, 2010).

The results of study have stated that students' expectancies for mathematics success predict their mathematics grades in a strong way, and their perceived mathematics values predict their mathematics choices more and advanced mathematic courses enrollment in high school in a strong way (Parsons *et al.*, 1984; Meece *et al.*, 1990; Ethington, 1991; Simpkins *et al.*, 2006). Many research implementing in other countries show that expectancies for success of students predict their success outputs (Midkiff *et al.*, 1986; Nagengast *et al.*, 2011; Bong *et al.*, 2012; Musu-Gillette *et al.*, 2015). According to the research analyzing the relationship among expectancy for success and other variables, the relationship among expectancy for success and internal motivation (Story *et al.*, 2009) self-support (Shepherd, 2014) and hope (Snyder *et al.*, 2002) is significantly positive.

Nonetheless, students having low expectancies for success tend to their successes or failures due to outer factors e.g. destiny, luck or their ethnic origin. Low expectancy for success is related to low academic success, and students feeling weak because of their successes connect their failures to external factors like favoritism, social injustice and others (Yong, 2010). According to Pintrich and Schunk (1996) expectancy for success is supported with realistic and specialized for the course, struggling missions, positive communication and minimum social comparison.

There is no any scale about evaluating university students' expectancies for success in Turkey according to the related literature. It is thought to be significant for Turkish adaptation of the scale expectancy for success, which is an important indicator for success tendencies of students. The aim of this study is to adapt the Generalized Expectancy for Success Scale, which was developed by Fibel and Hale (1978) and revised by Hale *et al.* (1992) into Turkish in terms of adaptation, reliability and adaptation.

2. Method

2.1. Research Design

This study modelled by survey is a scale adaptation study. The scale was adapted into Turkish culture in terms of language equivalence, reliability and validity.

2.2. Population and Sample

The population of the study consisted of the students of the Kazim Karabekir Faculty of Education, Faculty of Literature, Faculty of Science and Faculty of Theology of Ataturk University. Criterion sampling method, which is one of the purposive sampling methods, was used in the study. In line with this, in parallel with the teaching areas in the Faculty of Education and based on volunteerism, all students in the Faculty of Education, the Faculty of Literature, the Faculty of Science and the Faculty of Theology and the 4th grade students who are subject to the pedagogical formation program were tried to be reached and as a result, the research was conducted with 1450 students.

2.3. Data Collection Tool

The Generalized Expectancy for Success Scale, developed by Fibel and Hale (1978) and revised by Hale *et al.* (1992) was developed to measure the general success expectations of university students. In order to implement the adaptation study, the researchers who developed the scale were contacted by electronic mail and permission was obtained. The revised scale was applied to 199 university students and examined the relationship among the Rosenberg Self-Esteem Scale, the Life Orientation Test, and Rotter's Internal-External Locus of Control Scale. The scale is a 5-point Likert-type (1= highly improbable and 5= highly probable) measurement tool and comprises of 25 items with correlations of .45 or higher with the total score and split half reliability coefficient of .92. The scale is scored cumulatively with high scores indicating high expectancy for success.

2.4. Data Analysis

Adaptation of the scale to Turkish covers the language validity, construct validity and reliability studies. Before performing the necessary procedures for adaptation to the data obtained from the scale, the necessary data

for the missing data, extreme value, normality and homogeneity were made, and the data set was made ready for the analyzes. In order to determine the construct validity of the scale, the exploratory factor analysis was carried out and the confirmatory factor analysis was performed to test the accuracy of the structure obtained. After the validity study, reliability of the scale was performed by internal consistency method. In the scope of exploratory factor analysis, KMO test was applied to test the suitability of the sample size to be factorized. Bartlett test was used to determine whether the data obtained from the multivariate normal distribution in order to determine the factor structure of the scale, varimax was chosen as the principal component analysis as the factorization method and the orthogonal rotation method as the rotation method. The variance explained by the scale study was at least 40% (Kline, 1994) It has been paid attention that the load values of the items in the scale are at least .45, that the difference between the load values of the same items that gives load to different dimensions is at least .10, and that the eigenvalues of the dimensions are at least 1 and the item-total correlation is at least .30 (Tabachnick and Fidell, 2007; Cokluk *et al*., 2012).

In confirmatory factor analysis, Chi Square Goodness, RMSEA (Root Mean Square Error of Approximation), RMR (Root Mean Square Residual), NFI (Normed Fit Index), NNFI (Non-Normed Fit Index), CFI (Relative Fit Index), RFI (Relative Fit Index), GFI (Goodness of Fit Index) and AGFI (Adjusted Goodness of Fit Index) fit indices were used. If the X^2/df ratio in the fit indices is below 3, the perfect fit; It was taken as a criterion from 0 to 5 (Kline, 2005) because it was below 5, indicating moderate compliance. RMSEA, RMR and SRMR values are good if ≤ .08 (Brown, 2006) The acceptable value for the NFI, NNFI, CFI, IFI, RFI, GFI, AGFI fit indices was used as the criterion because it was considered to be .90 and the perfect fit value as .95 (Simsek, 2007). Cronbach's Alpha internal consistency was used for the reliability of the scale. If the reliability coefficient is between .60 and .80, the scale is very reliable, and if it is between .80 and 1.00, the scale is interpreted as highly reliable (Kalayci, 2010). SPSS 22.0 and Lisrel 8.80 programs were used to analyze the data.

3. Findings

3.1. Language Validation

For the language validity studies of the scale, firstly the opinions of the experts in the field of English and Turkish were consulted. Two experts in the field of English Language Teaching first translated the scale into Turkish, and then two other experts in the field of English Language Teaching translated the Turkish version into English. Comparisons were made between the two forms and it was determined that the language validity of the scale was good.

3.2. Exploratory Factor Analysis

Because of the exploratory factor analysis conducted to reveal the structure of the Generalized Expectancy for Success Scale KMO value was found to be.78 and the data structure was found to be suitable for factor analysis. When the Bartlett test results are analyzed, it is seen that the chi-square value obtained is significant ($x^2_{(1423)}$= 5502.337; p=.00). The related values for the Generalized Expectancy for Success Scale are given in Table 1.

Table-1. Results of generalized expectancy for success scale exploratory factor analysis.

Items	First Factor (Individual Expectation)	Second Factor (Social Interaction)	Third Factor (Failure)	Item-Total Correlation
i1	.610			.447
i3	.548			.349
i4	.673			.482
i7	.666			.501
i10	.657			.478
i12	.511			.345
i13	.673			.465
i15	.559			.345
i17	.503			.357
i18	.617			.483
i20	.576			.394
i2		.476		.390
i5		.547		.426
i6		.708		.543
i9		.669		.565
i21		.697		.560
i8			.589	.351
i11			.750	.596
i14			.600	.531
i16			.717	.596
i19			.746	.591
Variance	% 31.100	% 9.848	% 5.698	
Total Variance	% 46.646			

Source: Obtained from primary data.

As a result of the exploratory factor analysis, a 3-factor structure was obtained explaining 46.646% of the variance. The first factor, which includes the 1st, 3rd, 4th, 7th, 10th, 12th, 13th, 17th, 18th and 20th items of these factors, explained 31.100% of the variance and the factor loadings of the items range from .511 to .673. The second factor, which includes the 2nd, 5th, 6th, 9th and 21th items, explains 9.848% of the variance and the factor loadings of the items vary between .476 and .708. The third factor, which includes the 8th, 11th, 14th, 16th and 19th items that need to be scored as negative because of the negative items, explains 5.698% of the variance and the factor loads of the items vary between .589 and .550. For the first factor, the factor total correlations ranged from .345 to

.501; for the second factor, ranging from .390 to .565; and for the third factor, it ranged from .351 to .596. As a result, it can be said that the variance explained by the scale with 3-factor structure and the factor loadings in the scale are at a good level. The first factor was named as "individual expectation", the second factor was "social interaction" and the third factor was named as "failure". Correlation analysis was used to determine the relationship between the factors of the generalized expectancy for success scale. Table 2 shows the correlation analysis showing the relationship between the factors of the generalized expectancy for success scale.

Table-2. Correlation between factors of the generalized expectancy for success scale.

Factors	Individual Expectation	Social Interaction	Failure	General
Individual Expectation	1	.67*	.32*	.89*
Social Interaction		1	.25*	.77*
Failure			1	.66*
General				1

*p<.01 (2-tailed).

When Table 2 is examined, it is seen that there are significant relationships between factors and there is no multicollinearity.

3.3. Confirmatory Factor Analysis

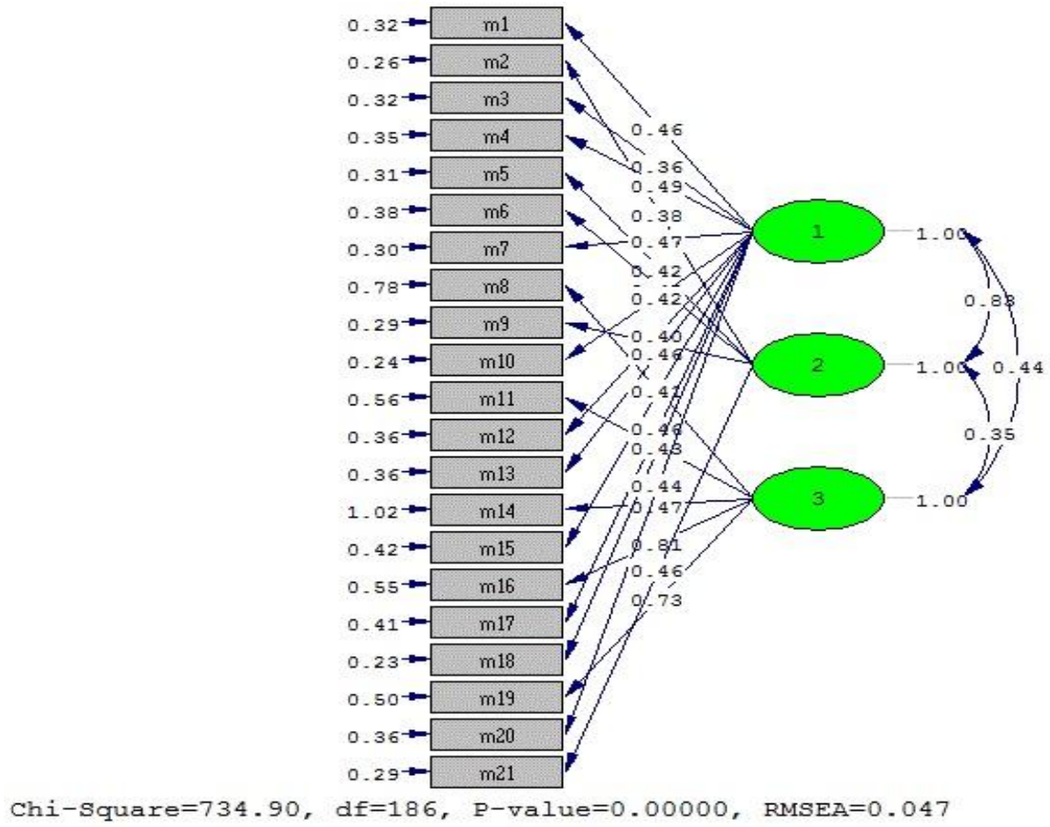

Figure-1. Confirmatory factor analysis for generalized expectancy for success scale.
Source: Obtained from primary data.

When Figure 1 is examined, it is seen that the fit indexes of the generalized expectancy for success scale consisting of 21 items and 3 factors are significant (X^2=734.90, df=186, p=.000, X^2/df=3.95). As a result of CFA, the X^2/df ratio indicates moderate fit (Kline, 2005) RMSEA is 047 and this value indicates perfect fit (Joreskog and Sorbom, 1996; Brown, 2006). Other fit indices were RMR=.026, SRMR=.038, NFI=.97, NNFI=.97, CFI=.98, IFI=.98, RFI=.97, GFI=.95, AGFI=.94. As a result of CFA, the fit indexes were found to be at a good level. The construct validity of the scale was found to be good according to the results of exploratory factor analysis and confirmatory factor analysis.

3.4. Reliability Analysis

Table-3. Cronbach's Alpha reliability coefficient of generalized expectancy for success scale.

Factors	Cronbach's Alpha Reliability Coefficient
Individual Expectation	.86
Social Interaction	.78
Failure	.71
General	.87

Source: Obtained from primary data.

When Table 3 is analyzed, it is seen that Cronbach's Alpha internal consistency coefficient of generalized expectancy for success scale is .86 for the first factor, .78 for the second factor, .71 for the third factor, and .87 for the whole of the scale.

4. Conclusion and Discussion

The adaptation of the generalized expectancy for success scale, which was developed by Fibel and Hale (1978) and revised by Hale *et al.* (1992) aiming at assessing university students' generalized expectancy for success, was done for Turkish university students in terms of language equivalence, reliability and validity. Therefore, language validity was done firstly by using rejection translation method for Turkish language and its original language. The results have shown that the scale had language validity and translation period was implemented successfully.

According to exploratory factor analysis's results, the structure was consisted of three factors- 21 items, which explained 46, 6% of variance. The first factor was called as "Individual expectancy", and it consisted of 11 items while the second factor called as "Social İnteraction" consisted of 5 items. The third factor was called as "Failure" and consisted of 5 items. The first dimension, Individual expectancy, is related to being successful, fulfilling its responsibilities, promoting, career goals, controlling yourself, achieving economic goals, managing personal life and expectancies for success at work. The second dimension –interpersonal interaction- is related to the expectancies e.g. having students listen themselves, interacting personally, first gaze, positive effect and connecting friendly. The dimension of "failure" is about negative features e.g. students' fear of failure, hopelessness, studying oneself, non-achieving goals and planning badly. It has been resulted in the study that the model was fit in terms of fit index criteria for confirmatory factor analysis. According to reliability studies, it has been determined internal consistency of the scale was high and total item correlation was adequate. According to correlation analysis results, the relationship among dimensions of the scale was significant and it was resulted that there was no any multicollinearity problem.

According to study results, it is determined that the adapted version of the scale is used as a reliable and valid instrument to assess the generalized expectancy for success of Turkish university students. The scale is also used to determine sub-dimensions e.g. individual expectancy, social interaction and failure as well as the generalized expectancy for success. It could be said that the usefulness of scale is high as implementing the scale and interpreting the results of it are easy because the scale is short. Nevertheless, exploratory and confirmatory factor analysis was done upon the same sample. Moreover, internal consistency data was analyzed for reliability studies of the scale, and reliability analysis was not done in terms of stability. However, the scale was not analyzed with comparing the similar another scale in terms of criteria validity. These limitations should be taken into consideration while using the generalized expectancy for success. It is thought that the scale should be implemented upon another sample in university, and the reliability of it should be analyzed in terms of test-retest method. Moreover, it is thought that analyzing criteria validity of the scale according to another similar scale should contribute to reliability and validity of the scale.

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