Psychometric Evaluation Of The Turkish Version Of The Defensive Pessimism Scale

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Abstract

Problem Statement: Much theoretical interest and attention has been given to the cognitive strategies that individuals use in achievement related domains. Defensive-pessimism is a functional strategy in a demanding academic setting for those who easily become anxious. However, this is a new concept for Turkish researchers and there is currently no instrument for defensive pessimism. Therefore, an instrument is needed to measure defensive pessimism.

Purpose of Study: The purpose of this study was to provide construct validation and normative data for the Turkish adaptation of Defensive-Pessimism Scale (DPS) in a sample of Turkish university students. In the educational settings, many teachers are not aware of defensive pessimism as a cognitive strategy because it is not included in their education. The use of this scale may have many implications in the educational setting.

Method: First, translation and back translation of the questionnaire were carried out. Thereafter, LISREL 8.30 was used to perform a confirmatory factor analysis. Confirmatory factor analysis was used as this is a theory-driven method for assessing the fit of a-priori-specified model. SPSS 17.0 was also used for descriptive statistics.

Findings and Results: Confirmatory factor analysis was conducted for both single and two-factor models of the Turkish version of the DPS. For the single model, after a slight modification, the following indices were obtained: \( \chi^2 (51) = 121.04, p <.01; \chi^2/df = 2.37; GFI = .93; AGFI = .89; RMSEA = .07; \) and CFI = .95. For the two factor model, \( \chi^2 (51) = 138.39, p <.01; \chi^2/df = 2.71; GFI = .91; AGFI = .87; \) RMSEA = .08; and CFI = .94 were found. The internal consistency of the DPS was assessed by Cronbach’s alpha, which was .81 for the total; .78 for the negative expectation; and .64 for reflectivity. McDonald’s Omega was also computed for the single

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factor as .77 and the two factor model for the negative expectation factor .81 and .73 for reflectivity. In order to test for gender differences, a independent samples t-test was used and no significant difference was found for the total scale and subscales t (254.64) =.103, p >.05. The correlation between the Perceived Stress Scale and DPS was found to be -.29 (p < .01), with the correlation being .15 (p < .05) for the Generalized Self-Efficacy Scale.

Conclusions and Recommendations: The results of this study showed that the Turkish version of the DPS provides a reliable and valid measure for Turkish university students and can be used in related research.

Keywords: Defensive Pessimism Scale, reliability, and validity

In literature much theoretical interest and attention has been given to the cognitive strategies that individuals use in achievement related domains. Through the present, authors have investigated different cognitive strategies with their antecedents and consequences. In a study by Elliot and Church (2003), a motivational analysis of defensive pessimism and self-handicapping, cognitive strategies were defined as coherent patterns of appraisal, planning, affect management, retrospection, and effort that characterize an individual’s striving in a particular domain of life, such as the achievement domain (p.370).

Defensive pessimism was first defined by Norem and Cantor (1986b) as a cognitive strategy that involves setting unrealistically low expectations and thinking through worst-case outcomes for a forthcoming achievement situation, even though success has been experienced in the past. Defensive pessimists, in order to prevent a loss of self-esteem in the event of failure, set low expectations, and their anxiety for potential failure is used to fuel efforts to do well.

Martin, Marsh, and Debus (2001) stated that defensive pessimism can be positively predicted by uncertain personal control over performance outcomes and negatively predicted by a general task-focused orientation. A strong desire for success and fear of failure has been speculated to be another antecedent for defensive pessimism (Norem & Cantor, 1986a). Some suggestions have been made by researchers that defensive pessimism does not undermine performance outcomes and that interfering with the strategy can actually result in a poor performance (Norem & Cantor 1986b, and Norem & Illingworth, 1993). Showers and Rubin (1990) stated that defensive pessimists do not ruminate or experience excessive anxiety after a performance, but also they do not deny responsibility for failure (Norem & Cantor, 1986b).

Norem and Chang (2002) commented on a different and positive function of defensive pessimism; even though there is considerable evidence that dispositional pessimism can have a debilitating effect on motivation. Defensive pessimism helps anxious people manage their anxiety so that it does not interfere with their performance. Defensive pessimists’ performance can be impaired (and they feel more
anxious) if their reflective processes are disrupted by positive thinking and optimistic expectations, and they perform better when they are allowed to maintain low expectations and reflect on negative possibilities before a task (Norem & Chang, 2002).

It is informative to compare defensive pessimists to strategic optimists, but it is at least as illuminating to compare defensive pessimists to other people who are anxious but do not use defensive pessimism. In a longitudinal study, Norem (2002) found that defensive pessimists show a significant increase in self-esteem and satisfaction over time, perform better academically, form more supportive friendship networks, and make more progress in their personal goals than equally anxious students who do not use defensive pessimism. This research converges with contrasting strategic optimism and defensive pessimism to suggest quite strongly that taking away their defensive pessimism is not the way to help anxious individuals.

Isaacowitz and Seligman (2001) reported in their study that among those age 65+, a realistically pessimistic perspective is associated with better adaptation to negative life events, in contrast to the typical findings with younger samples. Optimism and positive thinking can counteract if they lead people to ignore or discount important cues and warnings. When the self-serving function of optimistic biases is considered, there is the motivation of preserving positive self-image and positive outlook factor in strategic optimists, and thus, they are potentially resistant to negative feedback which might be informative.

The cost and benefits of individualistic optimism may also vary among cultures. Chang (1996) found that Asian Americans were significantly more pessimistic than Caucasian Americans, but insignificantly less optimistic. In addition, while pessimism was negatively associated with problem-solving and expressing emotion coping strategies for Caucasian Americans, it was positively associated with the use of these coping strategies for Asian Americans. It seems likely that relationship between self-enhancement and other outcomes may vary in cultures that are less focused on individual achievement and satisfaction than American culture (Chang, 1996).

Lim (2009) examined the underlying factor structure of the defensive pessimism construct and its relationship with achievement motives. She used a sample of 542 Singaporean undergraduate students and found that defensive pessimism is a two factor construct. It is comprised of negative expectations in which individuals worry about possible pitfalls and reflectivity in which individuals devise ways to prevent possible pitfalls. It is important to note that the Defensive Pessimism Questionnaire has always been treated as a uni-dimensional measure of defensive pessimism ((DPQ: Norem, 2001) cited in Lim, 2009)

Considering the research described above, defensive pessimism and negative thinking are considered effective ways for managing situations, and not as symptoms to be cured. In a sense, it is a type of coping, where thinking about these negative outcomes and increasing their anxiety motivates them to work harder. As
they approach their goals, they keep their anxiety from interfering by focusing on the steps needed to achieve their goals and avoid failure, as well as the emotional implications of failure (Parra, 2009, p. 3). The purpose of this study was to provide construct validation and normative data for the Turkish adaptation of the DPS in a sample of Turkish university students.

**Method**

**Research Design**

The research design for this study is considered both descriptive and confirmatory research. Confirmatory research tests *a priori* hypotheses—such *a priori* hypotheses are usually derived from a theory or the results of previous studies, which is also the purpose of this study. The study is also quantitative in nature, with the data being easily accessible (Deniz, 2013).

**Research Sample**

The sample of this study was determined by the purposive sampling method. It is a form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher based upon a variety of criteria, which may include specialist knowledge of the research issue, or the capacity and willingness of individuals for participating in the research. Sometimes a research design necessitates researchers making a decision about the individual participants who would be most likely to contribute appropriate data, both in terms of relevance and depth (Jupp, 2006). Two hundred and sixty three university students in Ankara participated in the study. They were aged to 22 (mean age = 18.39), and 134 of them were female and 129 male.

**Research Instruments**

*The Defensive Pessimism Questionnaire-12 item* (DPQ; Norem, 2001) measures the strategies to protect self-worth from possible failure by setting a lower level of expectations. To complete the DPS, the subjects rates each item with a response ranging from ‘not at all true of me’ (1) to ‘very true of me’ (7).

*The General Perceived Self-Efficacy Scale* (Schwarzer & Jerusalem, 1995) is a psychometric scale that was designed to assess optimistic self-beliefs used to cope with a variety of difficult life demands. It has been used in numerous research projects, for which it has typically yielded high internal consistencies in several languages, including Turkish and English. The Turkish adaptation and validation of the same instrument was carried out by Yeşilay, Schwarzer and Jerusalem (1996). It is a 10-item scale with responses ranging from ‘not at all true’ (1) and ‘exactly true’ (4).

*The Perceived Stress Scale-10 item version* (PSS-10) devised by Cohen, Kamarck, and Mermelstein (1983) measures an individual’s appraisal of how stressful his or her life is. Example items include, ‘how often have you felt nervous or stressed?’ and ‘how often have you felt confident about your ability to handle your personal problems?’ Respondents rated how often they have experienced these feelings in the
last month on a 5 point Likert scale ranging from 0 = never to 4 = very often. The PSS-10 scores were obtained by reversing the scores on the four positive items; 4, 5, 7, and 8. The total scores ranged from 0 to 40, with higher scores indicating greater overall distress. In the literature, researchers found that internal consistencies ranged from between .75 to .86 (Cohen et al. 1983). The Turkish adaptation and validation of this instrument was carried out and the Cronbach alpha reliability coefficient for the Turkish version of the PSS-10 was found to be .84 (Oruçü & Demir, 2009).

Procedure

Permission was obtained from the author to use the scale for research purposes. The scale was then translated into Turkish using a one-way translation qualitative method, which is the translation and checking of the questionnaire with a different group of translators (Savaşır, 1994). The translated items best representing the original items were translated back to the original language by a native English speaker who knows both languages well. Furthermore, a qualified Turkish language teacher reviewed the final form and her suggestions were incorporated into the translation. Then, this form was presented to researchers, counselors, and psychologists working with the university students. Finally university students from 15 classes were randomly selected among 150 classes and that formed the potential 300 students from a university in Ankara. Permission was obtained from the Director of the Preparatory School, who also arranged the classes randomly and decided on the day for the scale administrations. Although the estimated total of the students was approximately 300, only 263 provided valid data. It took approximately 15-20 minutes for participants to complete the questionnaires in their class.

Data Analyses

LISREL 8.30 (Jöreskog & Sörbom, 1999) was used to perform the confirmatory factor analysis (CFA) and SPSS 17.0 was used for descriptive statistics. Cronbach’s alpha and McDonald’s Omega were both calculated because the average interitem covariance provides a limited estimate of the scale’s true score variance. Alpha is a consistent estimate of reliability only when all items load on a single underlying construct and when all items represent that construct equally well (i.e., essential tau equivalence; Geldhof, Preacher & Zyphur, 2013). CFA allows for heterogeneous correlations between indicators and their underlying common factor(s) (i.e., heterogeneous factor loadings), and composite reliability (ω) as calculated from factor loadings produces a more precise estimate of reliability than those provided by alpha (α).

Results

Construct Validity

Maximum likelihood was the estimation method and the covariance matrices were analyzed, and the original two-factor model was tested as well. The fit of the models was evaluated using the following multiple criteria: Chi square/df ratio, goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean square error of approximation (RMSEA), and comparative fit index (CFI). The following
criteria were used to indicate the goodness of fit: GFI, AGFI and CFI .90 and higher, RMSEA .08 or lower, and Chi-square/df ratio 3 or lower (Bentler, 1990; Bollen, 1990; Cole, 1987).

First, the single-factor model of the Turkish version of the DPS was evaluated, and confirmatory factor analysis yielded the following goodness of fit indices: χ²/df = 4.07; GFI = .877; AGFI = .822; RMSEA = .108; and CFI = .894. These indices indicated a poor fit. Then modifications suggested by the program were conducted, thus setting the error covariance free between item 7 and item 3, item 4 and item 2, and item 12 and item 7. After these modifications, the following goodness of fit indices were obtained: χ²=121.04, df= 51, p-value=0.000, χ²/df = 2.37; GFI = .93; AGFI = .89; RMSEA = .07; and CFI = .95.

Table 1
Factor Loadings, Standard Errors, T Values, Squared Multiple Correlations of the Items and Error Variances of the Turkish Version of the Single Factor Model

<table>
<thead>
<tr>
<th>Factors &amp; Item No.</th>
<th>λ</th>
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<th>T</th>
<th>R²</th>
<th>Ψ</th>
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</table>

λ= Factor Loadings, SE = Standard Errors, T= T Values, R² = Squared Multiple Correlations of the Items, Ψ= Error Variances

Table 1 shows the factor loadings, standard errors, t values, squared multiple correlations (R²) and error variances of the items of the Turkish version of the DPS for the single factor model.
The original two factor model was later evaluated. In this model, six items related to negative expectations and six items related to reflectivity were specified. Confirmatory factor analysis for the two-factor model of the Turkish version of the DPS yielded the following goodness of fit indices: $\chi^2/df = 3.85$; GFI = .885; AGFI = .83; RMSEA = .104; and CFI = .906. These indices indicated a poor fit. Then modifications suggested by the program were conducted which set the error covariance free between item 7 and item 3, as well as item 4 and item 2. After these modifications,
the following goodness of fit indices were obtained: \( \chi^2 = 138.39, \text{df} = 51, \) p-value = 0.000, 
\( \chi^2 / \text{df} = 2.71; \) GFI = .91; AGFI = .87; RMSEA = .08; and CFI = .94. These goodness-of-fit statistics show that the model seems acceptable, although there is a slightly lower value for AGFI.

Table 2

*Factor Loadings, Standard Errors, T Values, and Squared Multiple Correlations of the Items and Error Variances of the Turkish Version of the Two Factor Model*

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<th>( R^2 )</th>
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\( \lambda \) = Factor Loadings, SE = Standard Errors, T = T Values, \( R^2 \) = Squared Multiple Correlations of the Items, \( \psi \) = Error Variances

Table 2 shows the factor loadings, standard errors, t values, squared multiple correlations (\( R^2 \)) and error variance of the items of the Turkish Version of the DPS for the two-factor model.
Figure 2
Path Diagram for the Two Factor Model
Although the fit model and the reliability of the general structure of the scale was acceptable for the first order confirmatory factor analysis, for the second order factor analysis the model did not predict the general construct.

**Criterion Validity**

The correlation between the Perceived Stress Scale and DPS was examined and found to be -0.29 (p < .01), indicating a negative correlation between them as expected. This is because the first scale measuring stress levels of individuals, as opposed to the DPS measure coping strategy and correlation, was 0.15 (p < .05) when using the Generalized Self-Efficacy Scale.

**Reliability Results**

For descriptive purposes, the mean (M = 52.76) and standard deviation (SD = 7.10) were computed for the total score. In order to test for gender differences, an independent samples t test was used and no significant differences were found for the total scale and subscales t (254.64) = -1.93, p > .05. The internal consistency of the DPQ was assessed by examining Cronbach’s coefficient alpha, which was 0.81 for the total scale. Cronbach’s Omega was found as 0.77 for the total scale. Cronbach’s coefficient alpha was 0.78 for the negative expectation factor and 0.64 for reflectivity. McDonald’s Omega for the negative expectation factor was found to be 0.81 and 0.73 for the reflectivity factor.

**Discussion and Conclusion**

In this study the applicability of the DPS was investigated. Confirmatory factor analysis was used because it is a theory-driven method for assessing the fit of a-priori-specified model (Kline, 1998), and for the DPS as specified by Lim (2009). The single factor and two factor models were analyzed with first order factor analysis based on a covariance matrix. Reliable evidence from the DPS data was obtained from first order factor models. As an index of reliability, both Cronbach’s alpha and McDonald’s omega coefficients were calculated. Second order factor analysis was also conducted.

Although the fit model and the reliability of the general structure of the scale was acceptable for the first order confirmatory factor analysis, the second order factor analysis model did not predict the general construct. In a study done by Yurdugül and Aşkar (2008), they investigated the level of effect for six sub-constructs in PATT-TR on the general constructs of pupils’ attitude towards technology. In their study, it was seen that two sub-constructs, “Technology & Gender” and “Personal Prerequisites,” have no effect on the general attitude, and therefore they made a reduction by omitting these two sub constructs. In the present study, for the second order CFA, reflectivity happens to be the problem, but as this scale does not have many sub constructs or factors, omission was not considered as an option. Researchers interested in defensive pessimism constructs may prefer to use the scale as unidimensional as the scale provides strong indices and reliability values for both single and two factor models, they might be interested in using the two factor model.
Defensive Pessimism is a challenging cognitive strategy. Although they have done well in the past, when defensive pessimists think about future situations, they feel anxious and out of control. Their mental rehearsal, with its focus on worst-case scenarios of what can go wrong, helps them to use their anxiety as motivation for increased effort towards effective preparation. As they consider the possible undesired outcomes, they begin to visualize how they might prevent them, and in turn put their plans into action (Norem & Illingsworth, 2004, p. 352). The difference between traditional pessimists and defensive pessimists is the latter’s willingness to reflect counteracts their pessimism by strengthening their intent to pursue and achieve their goals by the taking necessary steps (Norem & Illingsworth, 2004).

It was mentioned above that the cognitive strategies that students use in pursuit of achievement are critical to their success. Eronen, Nurmi, and Salmela-Aro (1998) carried out a study to identify the types of achievement strategy people apply in a university context, in addition to investigating the extent to which these strategies predict personal academic success and satisfaction. The types of achievement strategies used by people were optimism, defensive pessimism, impulsive strategy, and self-handicapping. The results showed that defensive-pessimism is a functional strategy in a demanding academic setting for those who easily become anxious, and despite their anxiety are able to do well in their university studies.

In educational settings, it is not likely that many teachers know about defensive pessimism, with the reason being it is not part of teacher education. As Merz and Swim (2008) stated, when students make negative comments such as ‘I can’t do that’ or ‘How am I supposed to remember that?’, a natural reaction for teachers is to stop that type of thought process since it may be difficult to listen to (for example, it may raise the teacher’s own anxiety levels) and also because it may adversely affect classroom culture (p.458). In addition, there is fear of a self-fulfilling prophecy because of the negative comments that might affect a student’s self-esteem or sense of agency (Norem & Cantor, 1986b). Teachers may try to counter the negative expression by providing comments that attempt to build the student’s confidence, not knowing that the defensive pessimist’s learning process could actually be hindered by their well-intentioned comments (Merz & Swim, 2008).

In conclusion, it is important to be aware of the different cognitive strategies that students use in their everyday life and in the academic setting. As teachers have the opportunity to make a difference in the lives of their students, they need to listen carefully to the negative self-talk and observe the connected behaviors. Therefore, the use of this scale may have many implications in the educational setting.

Purposive sampling was used in this study to specifically target university students. The results may be affected by biases resulting from social status, gender, or very specific factors relating to the level or subject of study. It is important that those using this scale in new populations assure themselves of its internal consistency and factor structure, especially the reflectivity factor. In further studies, if defensive pessimism is found to be a critical construct in the education of Turkish students, changes in the curriculum should be considered in order to help students be more successful.
References


*Savunucu Karamsarlık Ölçeğinin Türkçe Formunun Psikometrik Açışdan Değerlendirmesi*

**Atıf:**

**Özet**

Araştırmaın Amacı: Bu araştırmının amacı Savunmacı Karamsarlık Ölçeğinin Türkçe Formunun psikometrik özelliklerinin değerlendirilmesidir.


Araştırmaın Bulguları: Lisrel 8.30 programı, tüm ölçeklerin faktör analizine tabi tutulduğu bir modelde, bir faktörlü model için $\chi^2 (51) = 121.04$, p < .01; $\chi^2/df = 2.37$; GFI = .93; AGFI = .89; RMSEA = .07 and $CFI = .95$ olan sonuç elde edilmiştir. İkinci faktörlü model için ise $\chi^2 (51) = 138.39$, p < .01; $\chi^2/df = 2.71$; GFI = .91; AGFI = .87; RMSEA = .08 and $CFI = .94$ şeklinde bulunan faktör analiz sonuçları, ölçeğin güvenilirliğini ve açıklayıcı faktör analizinin yapılmasa sebebi, ölçeğin ölçüleri ile alan yazısında daha önce yapılan çalışmaların ölçeğin boyutlarını sağlam teorik temellere dayandırmasıdır. Ölçüte dayalı geçerliliğini hesaplamak için de Algılanan Stres Ölçeği ve Kendine Yeterlilik Ölçeği ile arasında ilişkiyi bakmıştır.


Anahtar Sözcükler: Savunucu Karamsarlık, geçerlik, güvenirlik