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THE ADAPTATION OF SHORT DARK TRIAD (SD3) INVENTORY TO THE TURKISH SAMPLE: THE STUDY OF VALIDITY AND RELIABILITY

KISA KARANLIK ÜÇLÜ (SD3) ENVANTERİ'NİN TÜRK ÖRNEKLEMİNE UYARLANMASI: GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI

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Öz

Bu araştırmada Jones ve Paulhus (2014) tarafından geliştirilen “Kısa Karanlık Üçlü (SD3) Envanteri”nin Türk kültürüne adapte edilmesi amaçlanmıştır. Araştırma örneklemini 327 üniversite öğrencisi oluşturmaktadır. Dilsel eşdeğerlik kapsamında Pearson korelasyonlar Makyavelizm için 0.820, Narsisizm için 0.791 ve Psikopati için 0.763 olarak elde edilmiştir. Düzeltilmiş madde toplam korelasyon katsayıları Makyavelizm için 0.676 ile 0.794; Narsisizm için 0.724 ile 0.795 ve Psikopati için 0.626 ile 0.787 arasında değişmektedir. % 27’lik alt-üst grup puan ortalamalarına dayalı madde analizinde tüm maddelere ait t değerleri $p < 0,01$ olarak anlamlı bulunmuştur. Croanbach alfa, test tekrar test, eşdeğer yarı ve Guttman güvenilirlik katsayıları sırasıyla Makyavelizm için 0.935, 0.920, 0.912 ve 0.910; Narsisizm için 0.933, 0.890, 0.876 ve 0.857; Psikopati için 0.910, 0.910, 0.864 ve 0.848 olarak hesaplanmıştır. SD3’ün yapı geçerliğini ortaya koymak için doğrulayıcı faktör analizi yapılmıştır. Uyum indeksleri orijinal 3 boyutlu model için kabul edilebilir değerlerdedir ($\chi^2/df=4$, RMSEA=0.075, NFI=0.92, CFI=0.92, IFI=0.92). Tüm sonuçlar ışığında Kısa Karanlık Üçlü Envanteri’nin Türk yetişkin örnekleminde geçerli ve güvenilir olduğu belirlenmiştir.

Anahtar Kelimeler: Kısa karanlık üçlü (SD3), Uyarlama, Güvenirlik, Geçerlik

Abstract

This research aims at adapting the “Short Dark Triad (SD3)” inventory, developed by Jones and Paulhus (2014) to the Turkish culture. Research sample consists of 327 university students. Within the scope of linguistic equivalence, Pearson correlations have been found as 0.820 for Machiavellianism, 0.791 for Narcissism, and 0,763 for psychopathy. The corrected item-total

correlation coefficients ranged from 0.676 to 0.794 for Machiavellianism, from 0.724 to 0.795 for narcissism, and from 0.626 to 0.787 for psychopathy. Item analysis based on the score averages of lower and upper group of 27 % showed that t values belonging to all items were meaningful ($p < 0.01$). Croanbach alpha, test-retest, split halves and Guttman reliability coefficients were found 0.935, 0.920, 0.912 and 0.910 for Machiavellianism; 0.933, 0.890, 0.876 and 0.857 for Narcissism, and 0.910, 0.910, 0.864 and 0.848 for psychopathy. In order to determine the construct validity of SD3, confirmatory factor analysis was conducted. Fit indices were acceptable for the original 3 dimensional model ($\chi^2/df=4$, RMSEA=0.075, NFI=0.92, CFI=0.92, IFI=0.92). In the light of all results, Short Dark Triad Inventory has been found valid and reliable in the Turkish adult sample.

Keywords: Short dark triad (SD3), Adaptation, Reliability, Validity

Introduction

Human behaviour is conceptualized as personality traits in a complex process where many factors are effective (Sahabettinoglu, 2015). And for many years it has been considered as one of the most basic subjects of psychology (Burger, 2006). Nevertheless, the rapid changes in technology and socio-economic aspects have featured individual and individuality in social and working life. The research about personality has become a focal point in other disciplines (organization, management, sociology, etc.). According to Hsieh, Miguel, Ortega and Rodriguez (2011), in the working life, organizations are increasingly focused on abstract elements, which characterize individual characteristics such as knowledge, skill, ability, experience, personality rather than tangible assets. This situation inspires the scientific studies about understanding human nature, under what conditions it tends to exhibit happy, motive or unethical behaviours.

Kaiser and Hogan (2011) explain two different definitions of personality as light and dark side, the former referring to a part of an individual's personality. The dark side of the personality, especially in 2010 and afterwards, has been studied extensively in the international arena. Kaiser and Hogan's (2011) classification of the dark side of the personality, which is generally perceived as negative in society represents the narcissistic, Machiavellian and psychopathic personality (Paulhus & Williams, 2002).

In Turkey, there are very few empirical studies of Dark Triad (Kanten, Yeşiltaş & Arslan, 2015; Ozen, Ozsoy, Karakiraz & Uslu, 2015; Ozsoy & Ardic, 2017). In addition, the reliability of the data collection tool should be improved by testing the suitability of collecting data for measuring personality characteristics in different sample groups (Erarslan-Capan, Satici, Yılmaz & Kayış, 2015; Aydogan & Serbest, 2016). The Jonason and Webster (2010) adapted 12-item dark triad inventory was used in this study. In Jones and Paulhus (2014) Turkish version of 27 questions, it is seen that only one validity reliability investigation has been made by

Ozsoy, Rauthmann, Jonason and Ardiç (2017). Therefore, the tests for Turkish adaptation of the 27-item version of the dark triad inventory is very important. On the basis of this gap, this study aims to adapt the SD3-Short Dark Triad Inventory developed by Jones and Paulhus (2014) to Turkish and to study the validity and reliability in the Turkish adult sample.

Dark Triad

Scientific research has shown that universal dark personality classification, which everyone has accepted and acknowledged in relation to the dark side of the person, can not be done. First, Hogan & Hogan (2008) handled the darkness of personality as a personality disorder consisting of eleven dimensions parallel to the classification of the American Psychiatric Association (Kaiser, LeBreton & Hogan, 2013). In the ongoing process, Paulhus and Williams (2002) began to work by differentiating Narcissism, Machiavellianism and Psychopathy (Non-Clinical) trio (Paulhus & Williams, 2002).

Hogan and Kaiser (2005) searched the personality with two different definitions as the light direction and the dark direction of personality. Other researchers, for example Giammarco and Vernon (2014), characterized the person's dark side as an anti-social personality or a personality disorder with the lack of empathy, desire to be superior, and feelings like arrogance. Jonason, Wee, Li and Jackson (2014) stated that the darkness of personality also includes features such as being apathetic to his environment, using his surroundings for his own interests, deceiving, influencing, and creating tension in interpersonal relationships. In this study, the darkness of personality will be considered under three dimensions within the framework of Paulhus and Williams' (2002) classification of (Machiavellianism, narcissism, and subclinical psychopathy).

Machiavellianism

Exhibiting manipulative behaviors through vulgarity and flattery in the inter-personal communication to reach the individual's own interests (Fehr, Samson & Paulhus, 1992) which is described as "The ends justify the means", is called Machiavellianism, and it is conceptualized in the book called "Prince" of the Italian philosopher Niccolo Machiavelli, which is based on the principles he wrote on the subject of management science. If a general specification is made as an organizational behavior, Machiavellianism can be expressed as a degree of the pragmatism, protection of emotional distance, and the belief of personal satisfaction of the result of the individual (Robbins, 1999, p.59).

However, Machiavellianism can be expressed as a social process which offers power, politics, and effective behaviours to reach the desired aims (Dahling, 2009). In scientific research, Christie and Geis (1970) made the concept of Machiavellianism measurable. In their research, they defined the Machiavellian individuals as people who monitor and manipulate events for their own purposes. These researchers rank four features as low ideological commitment, lack of empathy, no care without any ethical conception, and showing psychopathic features at the non-clinical border (Christie & Geis, 1970). Jones and Paulhus (2014) stated that the machiavelists are able to plan everything beforehand, they make the right alliances to reach their aims, and they can afford everything to protect their reputation.

Narcissism

Narcissism is expressed in its simplest form as having an individual's self-idolization, the high desire for favour, and the lack of empathetic qualities (Genctan, 2010). Babiak and Hare (2014) state that narcissism is a personality disorder and involves an extreme need of admiration and arrogance. The narcissists think that everything is spinning around them. They believe that all behaviours and words of people must be about them. The narcissists do not care about the needs of others, they do not share the scene, and they never bargain for attention and interest (Babiak & Hare, 2014).

The term of narcissism, which is discussed with different classifications in the literature, is mainly handled from two perspectives. These are the distinctions of narcissism as a personality disorder and subclinical narcissism. The term is discussed as a personality trait in the sub-clinical aspect of the Dark Triad research (Paulhus & Williams, 2002).

In this respect, the effect of narcissism on intra-organizational processes has been the subject of many studies. The relationship of the narcissistic tendencies with productivity, performance, loyalty, and job satisfaction are assessed, which are important for organizations.

Psychopathy (Nonclinical)

"Psychopathy", which has been used in response to all personality disorders, is used to describe individuals who have characteristics such as deprivation of moral values, irrepentance, and uncontrolled behavior for many years (Arrigo & Shipley, 2001).

Psychopathy as a word means "mentally damaged". In the beginning the term was used as a general term by the German psychiatrists, not only for anti-social behavior, but for a

heterogeneous group of abnormal personality patterns (Barlak, 2012). In the 20th century, psychopathy began to be described as a concept formed in Harvey Cleckley's previously published book, "Mask of Sanity," which is the result of interaction between personality, efficacy, and behavioral characteristics (Cleckley, 1988).

Hare (1996) who has been extensively involved in the field of psychopathy, defines psychopaths as the hunters who demonstrate manipulation, intimidation and violence, using their charm to selfishly satisfy their own needs. Psychopathy as one of the Dark Triad behaviors, as it is in narcissism, refers to subclinical psychopathy measured by people's own evaluations. Therefore, psychopathy is not considered as a certifiably insane (personality disorder) in organizational behavior research (Ozsoy & Ardic, 2017).

Methodology

Study Group

In the process of adapting the inventory to Turkish, five study groups were formed. The first group consisted four persons and this group translated the guidelines and items of the SD3. Two of the specialists who took part in translation group (n=2) were instructors proficient in both languages and employed in physical education field. The other two specialists (n=2) are specialists in English language teaching.

The second group consisted of five persons and were tasked with evaluating the expression, wording, and phrasing of the translation in terms of compatibility with the Turkish culture. One of the specialists (n=1) is employed as instructor in measurement and evaluation, two (n=2) of them in physical education and two (n=2) of them in Turkish language teaching field.

The third group comprised 34 students, whose task was to provide linguistic equivalency. All students (n=34) are sophomores of English language teaching program.

The fourth group was formed to calculate the validity and reliability analysis, which was carried out by 327 university students. 54.7% (n=179) of the students were female, rest (n=148) were male. 6.7 % (n=22) of the students were freshmen, 40.4% (n=132) were sophomores, 17.4 % (n=57) were juniors, and 35.5% (n=116) were seniors. 19% (n=62) of them were physical education and sports high school students, 9.5% (n=31) of them were coaching students, 13.4% (n=44) of them were sports administration students, 21.4% (n=70) of them were art teaching students, 26% (n=85) of them were education students, and 10.7 % (n=35) of them were recreation students. 15.3% (n = 50) of the students were 17-19, 67% (n = 219) of 20-22, 11.9%

(n = 39) of 23-25, and 5.8% (n = 19) were over 25 years of age. However, 21.4% (n = 70) of the students expressed low level economic income, 73.4% (n = 240) of medium, and 5.2 % (n = 17) of high level economic income.

33 students in the fifth group were maintained for the test repetition and reliability coefficient calculations. Entire group (n=33) was junior of Turkish language teaching.

Data Collection Tool

In order to determine the dark triad traits within the personality of adult individuals, a Dark Triad Inventory (Short Dark Triad=SD3) was developed by Jones and Paulhus (2014). The items in the inventory consisting of 27 items in total were presented in 5-point likert type format. The answers to the items were stated to vary between “strongly disagree” and “definitely agree”. SD3 traits was made up of three dimensions and five items were included in the procedure by being reverse coded as they involved negative expressions. Information on dimensions of the measure can be found at Table 1.

Table 1.

Dimensions and Item Numbers (n) of SD3 Inventory

Dimensions of SD3 Inventory	n	Definition of the Dark Triad of Personalities
Machiavellianism	9	The key elements of Machiavellianism appear to be manipulativeness, callous affect, and a strategic-calculating orientation (Jones & Paulhus, 2014).
Narcissism	9	Individuals high in Narcissism tend to focus largely on themselves are characterized by self-absorption, dominance, and feelings of entitlement and grandiosity, as well as devaluation of others (Emmons, 1987).
Psychopathy	9	Psychopathy is characterized by high thrill-seeking, callousness, interpersonal antagonism, manipulation, and anti-social behavioral style (Hare & Neumann, 2008).

The findings obtained during the development period of the original inventory are as follows:

As seen in Table 1, each dimension of the original inventory consists of nine items. During the development period of the inventory, items were written for the three dimensions forming the dark side of the personality and an item pool was formed. The 41 items arranged afterwards were applied to 489 adults in the scope of validity and reliability study. Responses from the participants were feedbacked to explanatory factor analysis.

As a result of the factor analysis, the 27 items with load value greater than 0.25 were determined to concentrate on three dimensions. It was found that items within Machiavellianism dimension showed a factor load value fluctuation between 0.48 and 0.76, that items within Narcissism dimension showed a factor load value fluctuation between 0.24 and 0.59, while items within

Psychopathy dimension showed a factor load value fluctuation between 0.27 and 0.74. Cronbach alpha Reliability coefficient was calculated to determine the reliability of the answers provided by the participants and it was found to be 0.71 for Machiavellianism dimension, 0.71 for Narcissism dimension, and 0.77 for Psychopathy dimension (Jones & Paulhus, 2014).

Analysis of the Data

In the process of adapting the Short Dark Triad Inventory to Turkish, specialists were consulted for their opinions in order to determine the scope validity of the scale. Confirmatory factor analysis was conducted to ensure construct validity. In order to determine the concordance between the factor structure of the original measure and data extracted from adults participating the adaptation process, Confirmatory Factor Analysis (CFA) was implemented by LISREL Software (Jöreskog & Sörborn, 1986). CFA is focused to test the degree of conformance of the data gathered from predetermined or manipulated factor structure (Kline, 1998). Regarding the CFA, the consistency between the covariance matrix of expected model and the covariance matrix observed from sample should be considered.

Several concordance criteria are employed to evaluate the model data fit. These are Chi-Square (χ^2) Goodness of Fit, Chi-Square / Degrees of Freedom (df) Fit Index, Root Mean Square Error of Approximation (RMSEA), Normed Fit Index (NFI), Non-Normed Fit Index (NFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Relative Fit Index (RFI), Goodness of Fit Index, GFI), and Adjusted Goodness of Fit Index (AGFI). In model data fit evaluation, if the ratio of χ^2/df obtained from dividing Chi-Square with degree of freedom is smaller than 3, this indicates that the model concurs with the data (Carmines & McIver, 1981). Some researchers, on the other hand, consider the ratio of χ^2/df smaller than 2 as acceptable (Byrne, 1989), some others consider big samples require ratio smaller than 5 as acceptable (Kelloway, 1996) or moderate (Kline, 1998) for model data fit. The RMSEA represents reasonable errors of approximation in the population. Although RMSEA value is ideally desired to be close to 0, values smaller than 0.05 accepted as perfect, smaller than 0.08 accepted as good (Jöreskog & Sörbom, 1993), and smaller than 0.1 accepted as poor fit (Tabachnick & Fidell, 2007).

While NFI, NNFI, CFI, IFI, RFI, GFI, and AGFI indices theoretically have values between 0 and 1; index values closer to 1 show that model-data fit is achieved, while values greater than 0.95 indicate a perfect fit. Within Chi-Square goodness of fit hypothesis test, p value is expected to be not meaningful with >0.01 . However, Chi-Square fit evaluation is not considered as a consistent evaluation because even very small differences between expected and observed

covariance matrices of large samples can be meaningful. It is reported that in goodness of fit research there may be inconsistencies between indices and it is advised that at least the results of four indices should be reported. (Byrne, 1989; Kline, 1998; Schumacker & Lomax, 2004; Tabachnick & Fidell, 2007).

In order to determine the reliability of the answers given to items, Cronbach alpha, equivalent split halves, Guttman and test-retest coefficients were arranged. Within the scope of item analysis, corrected item-total correlation coefficients and t values based on average scores for lower group of 27 % and upper group of 27 % were calculated.

Findings

This study aimed to adapt the SD3 to a sample of Turkish adults. The second aim was to investigate whether the original structure of the SD3 measure described in terms of the three-factor model by Jones and Paulhus (2014) could be replicated with a Turkish version by Confirmatory Factor Analysis and whether would be reliable. For this reason, the translation process of the original items was first described under the title of linguistic validity. Next, construct validity and reliability analyses of the SD3 were examined.

Findings on Linguistic Validity

In the process of adapting the inventory, primarily a translation group was formed. This group translated the items and the instructions of dark triad traits into Turkish. Then, the items which were translated into Turkish were re-translated into English and necessary corrections were made.

An 'expert opinion form' was formed for the translated items. The prepared form allowed the evaluation of suitability of translated items to the Turkish culture in terms of wording, expression, and phraseology. Adjustments found appropriate in line with specialist feedback were implemented. Content validity of the measure was determined based on specialist opinions.

In order to determine the linguistic equivalence of the translated items, the original measure was applied to 34 students who were proficient in both languages, and the Turkish translation was applied 14 days later. Pearson correlation coefficient was calculated to test the relation between student answers. Calculations gave the following coefficient results: Machiavellianism 0.820, Narcissism 0.891, and Psychopathy 0.863.

Findings on Construct Validity

Within validation study, the answers of 327 students responding to an inventory consisting of 27 items and three dimensions were utilized to calculate CFA. Results of this CFA were used to form a path diagram shown in Figure 1.

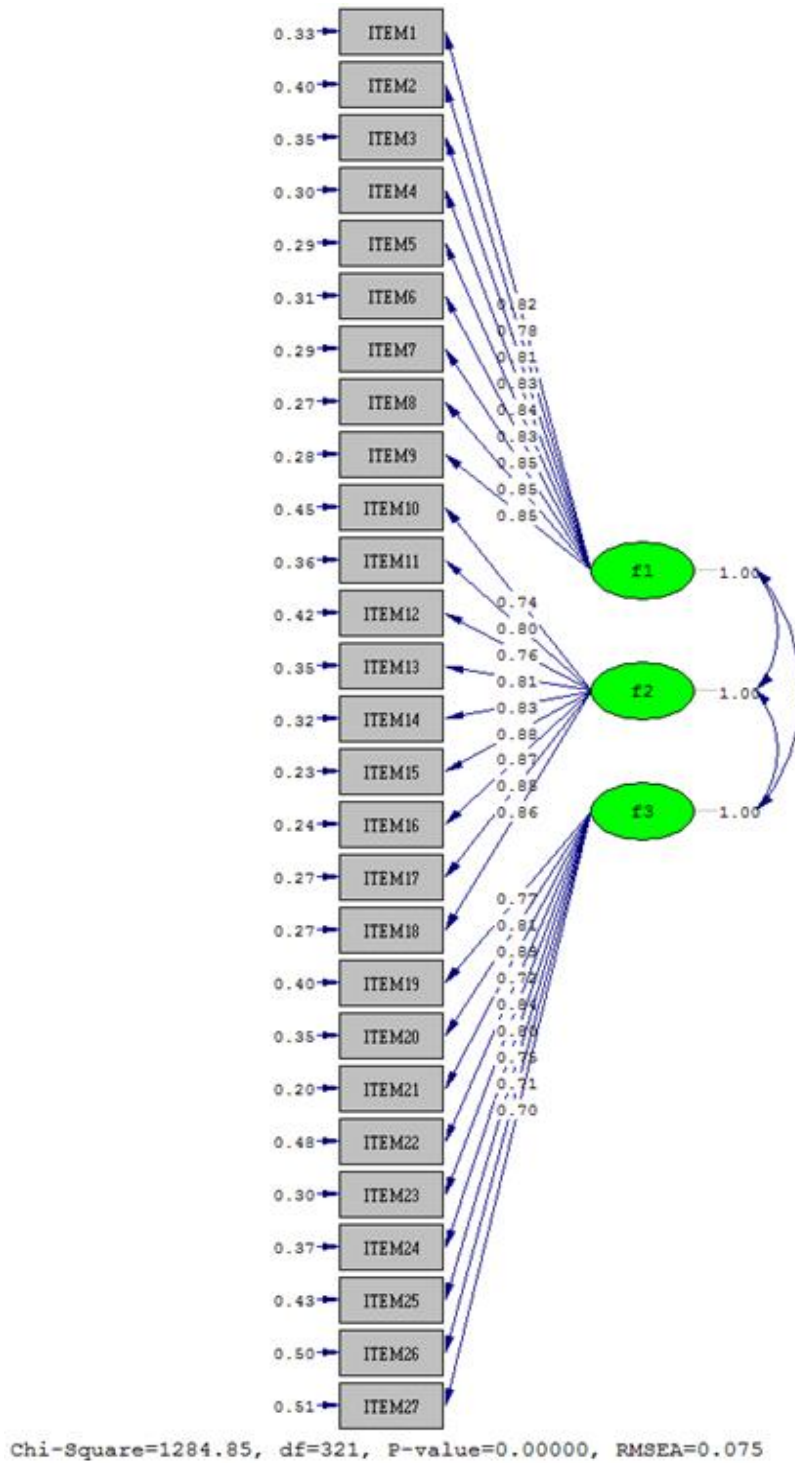


Figure 1. Path diagram of confirmatory factor analysis for Short Dark Triad Inventory (standardized coefficients)

In Figure 1 above, the right arrow (e.g. $E1 \rightarrow X1$), which is positioned from measurement error to indicator shows all the sources of variance that cannot be explained by the indicators of the relevant factor. It is seen that the error variances of observed variables are 0.20 and 0.51. Standardized solutions (Factor loadings (λ), Regression (R^2)), and t values calculated with CFA are shown on Table 2.

Table 2.

Factor Loadings (λ), Regression (R^2), and t Values Calculated in the CFA Result of the Dark Triad Inventory

Factors	Items	λ	R^2	t values*
Machiavellianism	1	0.82	0.67	17.83
	2	0.78	0.60	16.52
	3	0.81	0.65	17.59
	4	0.83	0.70	18.45
	5	0.84	0.71	18.68
	6	0.83	0.69	18.34
	7	0.85	0.71	18.83
	8	0.85	0.73	19.04
	9	0.85	0.72	18.98
Narcissism	10	0.74	0.55	15.52
	11	0.80	0.64	17.41
	12	0.76	0.58	16.15
	13	0.81	0.65	17.55
	14	0.83	0.68	18.17
	15	0.88	0.77	20.00
	16	0.87	0.76	19.81
	17	0.85	0.73	19.19
	18	0.86	0.73	19.21
Psychopathy	19	0.77	0.60	16.41
	20	0.81	0.65	17.49
	21	0.89	0.80	20.60
	22	0.72	0.52	14.84
	23	0.84	0.70	18.47
	24	0.80	0.63	17.15
	25	0.75	0.57	15.79
	26	0.71	0.50	14.48
	27	0.70	0.49	14.31

* $p < 0.01$

According to Table 2, all items of the inventory are detected to have meaningful t values ($p < 0.01$) on stated factor. Calculated t values vary between 14.31 and 20.60. Standardized factor loadings ($\lambda = \text{Lambda}$) state the effect of a single unit change of latent variable on observed variable. In other words, it gives an insight into the relationship between these two variables. Large lambda value indicates a strong relationship between latent and observed variables (Tabachnick & Fidell, 2007). According to the values on Table 2, lambda values on

Machiavellianism dimension have been detected to fluctuate between 0.78 and 0.85, Narcissism between 0.74 and 0.86, and Psychopathy between 0.70 and 0.89.

Values of standardized regression coefficients (R^2) show how much the variance of observed variable is sourced from the latent variable (Tabachnick & Fidell, 2007). When Table 2 is reviewed, regression coefficients are seen to fluctuate between 0.60 and 0.73 for Machiavellianism, 0.55 and 0.76 for Narcissism, and 0.49 and 0.80 for Psychopathy.

After determining that all items satisfied the linearity assumption and had a meaningful explanatory value at calculation stage, model-data fit indices were calculated. Results can be seen in Table 3.

Table 3.

The Model Fit Indices Calculated after the CFA of the Dark Triad Inventory

χ^2	p	χ^2/df	RMSEA	CFI	IFI	NFI
1284.85	0.000	4.00	0.075	0.92	0.92	0.92

According to Table 3, χ^2 value which does not possess a good fit index was found to be meaningful ($\chi^2 = 1284.85$, $p < 0.01$); however, this is an expected result. When other fit indices in Table 3 were analysed, the following was achieved: $\chi^2/df = 4$, RMSEA= 0.075, CFI= 0.92, IFI= 0.92, and NFI= 0.92.

Findings on Reliability

After attaining structural validity in line with the answers that the students contributed to the study, item analysis was conducted. Item analysis was carried out individually for each factor in multi factor test, in which total score could not be calculated (Buyukozturk, 2005, p.172). Item analysis was carried out under two titles. Firstly, corrected total correlation coefficients of items were reviewed. Corrected item-total correlation is expressed as the item discriminant parameter. That the correlations are ≥ 0.30 and meaningful is sufficient or acceptable for item discrimination (Nunnally & Bernstein, 1994). The item total correlation value is also a measure of reliability in terms of internal consistency. Positive and high item total correlations indicate that items measure similar traits.

On the other hand, in the item analysis of factors based on lower and upper group, score averages were designated as 27% lower group ($n_1=88$) and 27% upper group ($n_2=88$) for $N=327$. Differences between lower and upper group score averages were tested with independent samples t test. t-test results are expected to be significant ($p < 0.01$). Taking upper

and lower 27% of score distribution into account was due to the fact that upper and lower edges of distribution have the ability to represent the population and that maximum difference between groups was reflected with 27 % criteria (Kelley, 1939). Calculated values are shown in Table 4.

Table 4.

Item Analyzes of Short Dark Triad Inventory

Factors	Items	Corrected Item-Total Correlation Coefficients ¹	t values (Lower%27-Upper%27) ²
Machiavellianism	1	0.74***	17.76***
	2	0.68***	12.35***
	3	0.73***	14.81***
	4	0.77***	20.53***
	5	0.77***	19.95***
	6	0.76***	17.72***
	7	0.79***	23.43***
	8	0.79***	22,24***
	9	0.78***	21.12***
Narcissism	10	0.77***	18.75***
	11	0.79***	19.47***
	12	0.75***	19.90***
	13	0.72***	14.70***
	14	0.74***	14.03***
	15	0.80***	18.40***
	16	0.78***	17.60***
	17	0.73***	15.40***
	18	0.77***	18.09***
Psychopathy	19	0.66***	16.40***
	20	0.73***	18.30***
	21	0.78***	17.42***
	22	0.63***	12.23***
	23	0.74***	15.05***
	24	0.71***	14.32***
	25	0.69***	16.52***
	26	0.65***	15.40***
	27	0.67***	16.57***

¹ N=327 ² n₁=n₂= 80 ***p<0.01

According to Table 4, when corrected item total correlation coefficients are reviewed, correlations are observed to fluctuate between 0.68 and 0.79 for Machiavellianism, 0.72 and 0.80 for Narcissism, and 0.63 and 0.78 for Psychopathy dimension, and they are meaningful in terms of p<0.01.

Secondly, independent sample of t-test conducted on each factor within the item analysis based on the score averages of 27 % of lower and upper group showed that t values belonging to all items are meaningful (p<0.01). As seen inTable 4, t values fluctuate between 12.35 and 23.43 for Machiavellianism, 14.03 and 19.90 for Narcissism, and 12.23 and 18.30 for Psychopathy.

In order to determine the reliability of the answers given by the 327 participants, Cronbach alpha (α), split half and Gutman reliability coefficients of the answers were calculated on the SPSS. Then, the inventory was applied to two different groups with 14 days apart and test re-test reliability coefficient was calculated again. Obtained reliability analysis results are given in Table 5.

Table 5.

Reliability Coefficients of Short Dark Triad Inventory

Dimensions	Cronbach alpha	Split halves	Guttman	Test-re-test
Machiavellianism	0.94	0.91	0.91	0.92
Narcissism	0.93	0.88	0.86	0.89
Psychopathy	0.91	0.86	0.85	0.91

When Table 5 is reviewed, it is found that internal consistency of SD3 inventory has Cronbach alpha reliability coefficients of 0.94 for Machiavellianism, 0.93 for Narcissism, and 0.91 for Psychopathy dimension. According to Nunnally and Bernstein (1994), it could be said that the scales having Cronbach alpha value of ≥ 0.90 have a very high level of reliability. Split halves coefficients obtained by slashing the test in half and Guttman reliability coefficients were found 0.91 and 0.91 for Machiavellianism, 0.88 and 0.86 for Narcissism, and 0.86 and 0.85 for Psychopathy. Split-halves obtained by test halving method and Guttman reliability coefficients were calculated as 0,912 and 0,910 for Machiavellianism, 0,876 ve 0,857 for Narcissism, and 0,864 ve 0,848 for Psychopathy dimension. In order to determine the reliability with test-retest method, SD3 inventory was applied to 33 participants within two weeks apart. As a result of the applications, reliability coefficient of test-re test coefficient was found to be 0.920 for Machiavellianism, 0.890 for Narcissism, and 0.910 for Psychopathy.

Conclusions and Discussion

The aim of this research is to make the adaptation of Jones and Paulhus' (2014) "Dark Triad Inventory" (Short Dark Triad = SD3) to Turkish. For this purpose, the validity and reliability studies of the inventory in the Turkish sample were investigated. In the context of content validity, it is concluded that the sample of the content measured by expert opinion is translated into Turkish. Within the context of linguistic validity, Pearson correlation coefficients between SD3's original and Turkish forms were found between 0.763 and 0.82. The obtained results show that SD3 assures the linguistic equivalence. Confirmatory factor analysis was carried out

within the scope of construct validity. Firstly, in the path diagram obtained by confirmatory factor analysis, it was determined that all the items (observed variables) have t values at the level of $p < 0.01$ and have low error variances in the corresponding factor. This result indicates that latent variables explain the observed variables significantly. Secondly, standardized factor loadings ($\lambda = \text{Lambda}$) were observed to fluctuate between 0.70 and 0.89 and very high for three factors (Machiavellianism, Narcissism and Psychopathy). Thus, the items of Dark Triad Inventory proved to be highly related to the factors they belonged. In other words, it is possible to say that convergent validity was assured. Besides, regression coefficients were observed to fluctuate between 49 % and 80 % for 3 factors. When calculated values are taken in the account, the items within inventory are observed to have an explanatory level of medium to high within the dimension they belong to. In the confirmatory factor analysis Chi-square, which is considered firstly in the fit analysis based on the difference between expected and observed covariance matrices was found to be meaningful ($p < 0.01$). This is undesirable; however, in large samples, p value tends to be significant (Cokluk, Sekercioglu & Buyukozturk, 2012). Alternative goodness of fit indices has resulted as follows: $\chi^2/df = 4$, RMSEA = 0.075, CFI = 0.92, IFI = 0.92, and NFI = 0.92. When model fit indices are considered, it is observed that the desired values have been obtained and that the three-factor model has an acceptable or medium level of fit to the data from the Turkish sample. Consistent with Jones and Paulhus (2004), 27 items and three factors which comprise the original SD3 inventory have been verified with the answers obtained through Turkish adaptation. In other words, it is concluded that model-data fit is ensured. Although the fit indices are not impressive in the original version of SD3 (RMSEA = 0.07, CFI = 0.82, and TLI = 0.80), all items have been loaded appropriately on their respective factors (i.e., $>.30$). In the German version of SD3, the three-factor model has produced good fit indices; χ^2 (102 df) = 206.24, $p > 0.05$, $\chi^2/df = 2.02$, RMSEA = 0.04, GFI = 0.97, CFI = 0.98, and TLI = 0.99.

The reliability of the SD3 inventory in terms of internal consistency was examined by the Cronbach alpha internal consistency coefficient. 'Machiavellianism', the first of the scale factors, was found to be 0.935; the second factor 'Narcissism' was found to be 0.933, and the third factor 'Psychopathy' has been found to be 0.910. When the reliability values of the inventory are examined, it is seen that the values have very high internal consistencies (≥ 0.90). Alpha reliability coefficients for the original form of SD3 subscales have been obtained as 0.77; 0.71 and 0.80 for Machiavellianism, Narcissism and Psychopathy, respectively. Alpha reliabilities were in a medium but acceptable range in the German form as given below:

Machiavellianism $\alpha = 0.78$, Narcissism $\alpha = 0.73$, and Psychopathy $\alpha = 0.72$ (Malezna, Ostaszewski, Büchner & Kaczmarek, 2017). At the same time, for the consistency of SD3 inventory, test retest, split-halves, and Guttman reliabilities were calculated. According to the results, test retest, split halves, and Gutmann correlation coefficients were 0.92-0.89-0.91 for the factors of Machiavellianism, narcissism and psychopathy. Since all reliability coefficients were found to have high values consistent with the original form (Jones & Paulhus, 2014) and the German form (Malezna et al, 2017), Dark Triad Measure can be accepted as reliable in the Turkish Sample as well.

In the item analysis study, the corrected item total correlation coefficients were reviewed firstly. As a result, the fact that the correlations are positive and high (≥ 0.30) between 0.626 and 0.795 ($p < 0.01$) indicates that items measure similar behaviours and distinguish people well. Secondly, t-test of independent samples based on difference between mean scores of 27 % subgroup and 27 % upper group was performed. According to t-test results, t values of all items were found to be significant between -12.23 and 23.43 ($p < 0.01$). Accordingly, items distinguish individuals according to the latent variables measured on each sub-dimension. In the light of the results obtained from the item analyses, it can be said that the internal consistency and reliability of each factor are high, and that the items could be used without any correction. The high reliability and validity of SD3 inventory indicate that it can be used in Turkey.

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Appendix

Turkish form of SD3 is shown below.

Makyavelizm

1. Sırlarımızı başkalarıyla paylaşmak akıllıca değildir.
2. İnsanlar zorunlu olmadıkça sıkı bir şekilde çalışmamalıdır.
3. Önemli insanları kendi tarafınıza çekmek için her şeyi yapabilirsiniz.
4. İleride işinize yarabileceğini düşündüğünüz için, insanlarla çatışmaktan kaçınmalısınız.
5. İnsanlara karşı ileride kullanabileceğiniz bilgileri bir kenarda tutmak, akıllıca bir iştir.
6. İnsanlardan öğ almak için doğru zamanı beklemelisiniz.
7. Diğer insanların hakkımızdaki her şeyi bilmelerine gerek yok, bu nedenle onlardan bazı şeyleri saklamalıyız.
8. Planlarınız başkalarından önce sizin yararınıza olmalıdır.
9. İnsanların çoğu başkalarının etkisi altında kalır.

Narsisizm

10. İnsanlar benim doğal bir lider olduğumu düşünür.
11. İlgi odağı olmaktan hoşlanmam.
12. Arkadaşlarımın bensiz yaptığı sosyal aktiviteler sıkıcı olur.
13. Özel olduğumu biliyorum çünkü herkes bana bunu söyler.
14. Önemli insanlarla tanışmaktan hoşlanırım.
15. Biri bana iltifat ettiğinde utanırım.
16. Genellikle ünlü kişilere benzetilir, onlarla kıyaslanırım.
17. Kendimi sıradan bir insan olarak görüyorum.
18. İnsanların bana saygı duyması gerektiğini düşünüyorum.

Psikopati

19. Otoritelerden (yönetici, amir vb.) intikam almak hoşuma gider.
20. Tehlikeli durumlara girmekten kaçınırım.
21. İntikam hızlı ve kötü bir şekilde alınmalıdır.
22. İnsanlar genellikle kontrolümü kaybettiğimi söylerler.
23. Gerektiğinde insanlara kaba davranabilirim.
24. Benimle uğraşan insanlar yaptıklarına pişman olurlar.
25. Bugüne kadar başım hukuki açıdan hiç derde girmedi.
26. Ezik ve silik kişilerle uğraşmaktan hoşlanırım.
27. İsteddiğimi almak için hiçbir şeyden çekinmem.