PSYCHOMETRIC EVALUATION OF THE TURKISH VERSION OF THE ENGAGEMENT WITH BEAUTY SCALE[•]

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Abstract

In the evaluation of beauty perception; human, art, and beauties in nature are necessary. These perceptions are especially important. This study was carried out in order to adapt the Beauty Impact Scale to Turkish and to examine its validity and reliability. The study was conducted with 325 university students. The data were collected with the socio-demographic data collection form and the Turkish Version of the Engagement with Beauty Scale. After 15 days from the collection of the data, re-test was performed with 205 participants. The language and structure validity of the scale was tested. Internal consistency, test re-test reliability, and item-total item correlation were assessed for reliability. Language validity of the scale is provided. There were 4-factorial structures in construct validity. Cronbach alpha value was 0.880 for the total scale and Cronbach alpha coefficients of the subscales were found between 0.729 and 0.804. There was no significant difference between the test results and re-test results, and the item correlations were sufficient. It was determined that 14 items and 4-factor structure of the Engagement with Beauty Scale were valid and reliable scale for Turkish population. This scale can be used to evaluate the ability to appreciate beauty and participate in beauty.

Keywords: Beauty Scale; Validity, Reliability, Psychometric Evaluation

1. INTRODUCTION

The question of "What is the human?" sought by philosophers has been discussed in the historical process and has come up to daylight (Cohen, 2008, 506-514; Kant, 1885, 15). Kant has considered human beings as individuals as technical, rational and moral values. According to Kant, a technical person is an entity with self-creating characteristics and can constantly improve himself. A person who has rational values makes use of the technique in his presence while adapting this technical skill to the surrounding environment. When doing all this they question what their purpose is and how they can achieve it. The answers to these questions are found in moral values (Cohen-Almagor, 2017, 436-444). In this adventure of man, it is aimed to reach the most beautiful and esthetic works by questioning the concepts of beauty and aesthetics (Arnellos & Xenakis, 2017, 77-79). The perception of absolute beauty which is the goal of human life, or the question of beauty in nature have investigated the answer of the questions like "what is beauty?" and "how is the effect of the beautiful conception of life?". The concepts of "truth, beauty and good" are often examined and the philosophy of "Beauty is truth, truth is beauty" continues to argue in relation to each other (Diessner et al, 2008, 303-332).

Feeling beauty is a multidimensional situation. Objects that are appreciated by people and enjoyed by them are called beautiful objects. The definition of beautiful includes diversity, balance, symmetry, rareness, originality, attention and proportionality (Arnellos & Xenakis, 2017, 77-79; Guyer, 2008, 483-494). While these properties of the object alone feel satisfaction at a certain level, the objects that contain all these features give a great feeling of satisfaction in human beings and they are defined as beautiful by them (Guyer, 2008, 483-494). In the face of a beautiful object, the mind feels good, does not suffer, and is not perceived as a burden by it (Kant, 2000). But, it is discussed whether beauty is defined by some objective parameters, or whether it depends only on subjective factors. Although beauty can be regarded as a feature of an object that creates a pleasant experience in any suitable viewer, it is emphasized that human has certain parameters to evaluate beauty inherently (DiDio, et al., 2007).

Perception of beauty consists of two mutually exclusive processes in the brain. One of this processes is based on a common activation of a set of cortical neurons and insula triggered by stimulus-specific parameters and the other is based on the activation of the amygdala, which is guided by one's own emotional experiences (subjective beauty) (DiDio, et al., 2007). It is important how the person perceives the beauty perception, how much time it takes and how it reacts to the object (Proyer et al., 2015, 108-128). In addition, beauty sensation may be related to the level of oxytocin hormone (Haidt, 2006). It is seen that beauty perception has different effects on people's lives. The relationship between beauty and happiness (Proyer et al., 2015, 108-128; Proyer et al., 2016, 189-193) has been shown to correlate with body image, self-esteem and life satisfaction in studies conducted (Homan & Tylka, 2015, 1-7; Tylka & Wood-Barcalow, 2015, 118-129).

Beauty is not only a phenomenon that can be evaluated with the human body. Hegel has stated in philosophical studies that man is not just an animal soul, that he is celestial and free, that consciousness and thought are elements that contribute to his immortality. According to Hegel (1977), the soul that comes out of the organic material needs the objective world. For this reason, experiencing the elements of nature beautifully contributes to the creation of feelings of pleasure in the human body. Although some philosophers focus more on the beauty of nature than the beauty of nature, most of them work on the beauty of nature. Kant has argued that the love of the beauty of nature does not offer any proof that a person tends to be a good person, but that the interest in nature's beauty is always a sign of a "good soul" (Diessner et al., 2008, 303-332). Maslow (1964) pointed out the importance of meeting the aesthetic needs of the people and the beautiful perception of the world, and stated that this influences the situation of individuals to realize themselves.

Although there are studies on the understanding and perception of beauty (Diessner et al., 2006, 301-317; Proyer et al., 2016, 108-128); most of these studies are related to human physical beauty and cosmetic problems (DiDio, et al., 2007; Geldart, 2010, 79-87; Tylka & Iannantuono, 2016, 67-81). It was evaluated that it would be insufficient to examine only the beauty of the concept of human beauty and the effects of beautiful objects on humans. This study was carried out in order to analyze the validity and reliability of The Engagement with Beauty Scale to Turkish because it was thought that human, artistic and nature beauty should be considered in the evaluation of beauty sense.

2. MATERIAL AND METHOD

2.1. Aim: The purpose of this study was to translate, adapt and test the psychometric properties of the Turkish version of the Engagement with Beauty Scale tool in Turkish university students.

2.2. Participants: The Turkish adaptation study of The Engagement with Beauty Scale was carried out in university students. It is recommended that at least 5 participants and at least 100 participants be included for each item in the sample calculation (O'Rourke & Hatcher, 2013). The study has been completed with 325 students who are 18 years of age or older and who agree to participate in the study.

2.3. Data collection: For socio-demographic characteristics, age, gender, educational level, pet ownership status and art education status were questioned. The scale is a 14-item self-report tool designed to measure the relevance of natural, artistic and moral beauty developed by Diessner et al. in 2008. The original scale consists of 3 subcategories: 1) Natural beauty (four items); 2) Artistic beauty (four items); 3) Moral beauty (six items). Participants give their answers by scoring range to a 7-point Likert scale. A total score of 14 to 98 is taken from the scale.

2.4. Study design: A psychometric study with a cross-sectional design was conducted. Language validity was tested as suggested in the literature (Hambleton, 1994; Tavşancıl, 2010). In January 2018, volunteers were asked to fill in the socio-demographic data collection form and the scale by informing the participants about the purpose and process of the research. Before starting the study, permission was obtained from the author of the original scale. The study was approved by the university's institutional review board. Consent was obtained from all participants. In order to evaluate the reliability of the scale, 205 randomly selected participants (63.07%) were retested after 15 days. Collection of data was taken 10-15 minutes.

2.5. Data Analysis: For statistical analysis, statistical software package SPSS for Windows Version 21.0 (SPSS Inc., Chicago, IL) was used. The frequency and percentage for the variables determined by the count, and the mean and standard deviation values for the variables obtained by the measurement. Factor validity was assessed by descriptive factor analysis (DFA) for construct validity of the measurement tool (Erdoğan, et al., 2014, 195-230). In DFA, basic component analysis, which is mathematically simpler, stronger in psychometric terms, and more effective in coping with problems such as factor uncertainty, was preferred (Tavşancıl, 2010). In DFA, the varimax rotation method, which is effective in maximizing the variances, was used as the rotation technique (Çokluk, et al., 2012; Tavşancıl, 2010). Internal reliability (Cronbach alpha), test and re-test reliability, and item-total item correlation were assessed to assess the reliability of the instrument. It was accepted that the p value was below 0.05 for a meaningful difference.

3. FINDINGS

3.1. Characteristics of Participants

The socio-demographic characteristics of the students included in the study are presented in Table 1. The average age of participants is 19.73±1.58 and most of the females (69.8%, n:227). All of the participants are single and 70.8% are undergraduate students. 16% of the participants have at least one pet. 16.9% of the participants stated that they are studying in any art field. More than half of the participants (59.7%, n:194) stated that they were moderately religious.

Table 1: Socio-demographic characteristics of students

		Mean ± Standard Deviation	
Age		19,73± 1,58	
		n	%
Sex	Female	227	69.8
	Male	98	30.2
Education level	Undergraduate	230	70.8
	Associate Degree	95	29.2
Pet ownership	No	273	84
	Yes*	52	16
Art education	No	270	83.1
	Yes **	55	16.9
Religious level	I'm religious	120	36.9
	I'm religious middle	194	59.7
	I'm not religious	11	3.4

*Birds, fish, cats, hamsters, dogs, turtles and ducks
**Music, painting and handicrafts, performing arts, oral and written arts.

3.2. Validity

For the validity of the language, firstly the original scale was translated into Turkish by three experts. After first translation, it was translated into English by two different experts. An English language expert and the authors compared the translated and original versions of the scale. There was no significant difference between the original English version and the result translation. Feedback was received on the scale of the five students and two lecturers and the comprehension of the items on the scale in the pilot practice of the scale. There was no need to make any changes on the scale.

The value of KMO was assessed to assess whether sample size for construct validity was suitable for factor analysis. The KMO value was calculated as 0.856. This value is considered a fairly good sample size for factor analysis (Çokluk, et al., 2012; Leech, et al., 2005). Bartlett found that the chi-square (χ2) value obtained from the sphericity test was lower than the 0.01 level (χ2 = 1989.212, p<0.01).This result shows that the data come from the highly variable normal distribution and that the factor analysis is satisfied with normality. The explained variance was calculated as 67.30% in total. As a result of the item analysis, it was seen that the measuring instrument was composed of four factors and 14 items. The factor loadings of the items were found to vary between 0.587-0.794. The factor structure, variance levels and item total correlation values of the items are shown in Table 2.

Table 2: Factor structure and variance levels of tool items

	Natural Beauty	Artistic Beauty	Moral Beauty-Behavioral	Moral Beauty-Emotional	Total item correlation
I notice beauty in one or more aspects of nature.	0.75				0.46
When perceiving beauty in nature I feel emotional, it "moves me," such as feeling a sense of awe, or wonder or excitement or admiration or upliftment.	0.75				0.63
When perceiving beauty in nature I feel something like a spiritual experience, perhaps a sense of oneness, or being united with the universe, or a love of the entire world.	0.63				0.56
When perceiving beauty in nature I feel changes in my body, such as a lump in my throat, an expansion in my chest, faster heartbeat, or other bodily responses.	0.58				0.58
When perceiving beauty in a work of art I feel emotional, it "moves me," such as feeling a sense of awe, or wonder or excitement or admiration or upliftment.		0.79			0.56
I notice beauty in art or human made objects.		0.76			0.40
When perceiving beauty in a work of art I feel changes in my body, such as a lump in my throat, an expansion in my chest, faster heartbeat, or other bodily responses.		0.74			0.54
When perceiving beauty in a work of art I feel something like a spiritual experience, perhaps a sense of oneness, or being united with the universe, or a love of the entire world.		0.63			0.62
I notice moral beauty in human beings.			0.76		0.30
When perceiving an act of moral beauty I find that I desire to become a better person.			0.61		0.58
When perceiving an act of moral beauty I find that I desire to do good deeds and increase my service to others.			0.59		0.57
When perceiving an act of moral beauty I feel emotional, it "moves me," such as feeling a sense of awe, or wonder or excitement or admiration or upliftment.				0.79	0.66
When perceiving an act of moral beauty I feel something like a spiritual experience, perhaps a sense of oneness, or being united with the universe, or a love of the entire world.				0.76	0.62
When perceiving an act of moral beauty I feel changes in my body, such as a lump in my throat, an expansion in my chest, faster heartbeat, or other bodily responses.				0.71	0.56

3.3. Reliability

Cronbach's alpha coefficient, test and re-test value, and item-total item correlation are used to determine the reliability of the scale. The coefficient of the scale's Cronbach alpha was 0.880. Cronbach alpha coefficients of the subscales are between 0.729 and 0.804 (Table 3).

Table 3: Scale and subscale's Cronbach alpha coefficients

	Cronbach alpha
Total Scale	0.880
Natural Beauty	0.759
Artistic Beauty	0.796
Moral Beauty-Behavioral	0.729
Moral Beauty-Emotional	0.804

The re-test Cronbach alpha coefficient was 0.897. There was no statistically significant difference when comparing the test and re-test results. Test and re-test average score and comparison results are shown in Table 4.

Table 4: Test and re-test average score and comparisons

	Test		Re-test		Z*	p
	Mean	Standard Deviation	Mean	Standard Deviation		
Total scale	74.44	11.80	74.42	12.01		
Natural Beauty	21.01	4.35	20.83	4.20		
Artistic Beauty	18.86	4.57	18.85	4.45	-0.488	0.320
Moral Beauty-Behavioral	18.43	2.62	18.37	2.75		
Moral Beauty-Emotional	16.1	3.39	16.36	3.62		

*Wilcoxon test

The item-total item correlation coefficients of the measurement tool were determined between 0.30 and 0.66. In this study, it was accepted that the items with a value of 0.30 and above were sufficient for item-total item correlation.

4. DISCUSSION

This study was conducted to determine the validity and reliability of the Engagement of Beauty Scale, which aims to measure relativity to natural, artistic and moral beauty. Our group for validity and reliability study is similar to the sample group of Diessner et al. (2008). It is also seen that different sample groups were used in the translation of the scale into other languages. For example, studies were completed with Germans between 18-81 years (N=71) (Dachs & Diessner, 2009), Greek between 21-60 years (N=30) (Merchi, et al., 2007), Persian between 20-55 years (N=71) (Richel & Diessner, 2007) and Cantonese between 18-70 years (N=106) (Hui & Diessner, 2015). The sample size of our group, which resembles the original scale as the age range, is considerably larger than the other studies. It is known that during the scale development, the largest possible sample size is more suitable for validity and reliability analysis.

The validity of the factor structure for the sample was assessed and the 4 factorial structures were verified. The distributions of items with this state are as follows: Natural Beauty (1,2,3,4), Artistic Beauty (5,6,7,8), Moral Beauty-Behavioral (9,13,14) and Moral Beauty-Emotional (10,11,12). It is stated that the explained variance in the measuring instruments having more than one factor is between 40-60% (Tavşancıl, 2010). The variance was explained in the origin of the scale was 63% (Diessner et al., 2008) and 51% in Hong Kong study. In our study, the explained variance rate of 67.30% we have achieved is considered sufficient.

The Cronbach alpha coefficients calculated for evaluating the reliability of the scale and subscales were 0.880 for the whole scale and 0.759 - 0.834 for the subscales. In the original form of the scale, the alpha value was 0.90 and the subscales were between 0.80-0.87. In other versions of the scale Cronbach alpha coefficients are 0.94 for total scale and 0.85-0.90 for sub-scales (German); 0.90 for total scale and 0.80-0.87 for sub-scales (Persian); 0.85 for total scale and 0.72-0.85 for sub-scales (Greek). The recommended level of reliability for the measurement tools is 0.70 (Büyüköztürk, 2007). When these values are considered, it is seen that the internal consistency of scale and subscales in our study is within acceptable limits.

It is a Likert type measurement. It is recommended that such scales be tested at two-week intervals for the re-test method (Erefe, 2002). In the original version of the scale, after one week it was determined that the results of the repeated scales were in order. In this study, it was determined that there was no significant

difference between the results of the test that were repeated two weeks later and the scale results (Diessner et al., 2008). The repeatability of the scale results in this way can be regarded as an indication that the scale is reliable.

It is specified that item total correlation should be at least 0.30 (Erdoğan, et al., 2014). It is seen that there is no item below the stated value and it is not necessary to remove it from the scale. In this analysis, it was evaluated that item-total correlations were appropriate for reliability. Cronbach's alpha coefficients, similarity between test and re-test measures, and item-total item correlations suggest that the scale is reliable.

5. CONCLUSIONS

In this study, The Engagement with Beauty Scale was analyzed for validity and reliability. The scale can be used as a valid and reliable measurement tool in the evaluation of beauty perception in Turkish society with its four sub-factorial structures. It should be used to evaluate of humans' beauty sense. This scale can be used to evaluate students' ability to appreciate beauty and participate in beauty. In this study, the validity and reliability of scale were tested on university students as if they were on the original scale. For this reason, validity and reliability can be evaluated in different groups. Using the scale in new investigations is thought to contribute to measurement power. It is also thought that this scale will contribute to the fields of psychology, aesthetic, theology, philosophy, and sociology because experiencing the elements of beauty contributes to the creation of the feelings of pleasure in the human body.

6. LIMITATIONS

No comparison was made because there was no scale designed to measure the relevance to natural, artistic and moral beauty, similar to Beauty Scale.

7. COMPLIANCE WITH ETHICAL STATEMENT

7.1. Conflict of Interest

The authors declare that there is no conflict of interest.

7.2. Ethical Approval

This study was approved by the University Ethic Committee with 2018/43.16

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