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# The Assessment of the Validity and Reliability of the Three-Dimensional Contribution Scale in Adults and the Analysis of the Scale with Different Variables

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## ABSTRACT

This study has two aims: to examine the psychometric properties of the Three-Dimensional Contribution Scale in adults and to reveal how the contribution supports authenticity. To attain the first aim, a total of 198 individuals (105 females, 93 males) were included in the study. The result of the confirmatory factor analysis indicated that the scale maintained its three-factor structure. The internal consistency coefficient of the scale was determined to be .88. Regarding the criterion-related validity, a significant positive relationship was determined between the Three-Dimensional Contribution Scale and the Brief Resilience Scale. As a result, it can be said that the present scale is a valid and reliable measurement tool that can be used to determine contribution levels in adults. To accomplish the second aim of the study, a total of 383 individuals (184 females, 197 males, and two individuals with no sex specification) were enrolled in the study. The examination of the findings of the simple linear regression analysis of authenticity and the subscales of authenticity indicated that contribution supported the authentic living subscale of the authenticity positively. However, it was also found that contribution supported the self-alienation subscale of the authenticity negatively and that there was no significant relationship between the acceptance of external influences subscale and the total score of authenticity. In conclusion, it can be said that as the level of contribution increases, the authenticity of individuals will increase, as well.

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Keywords:

Contribution, three-dimensional contribution, authenticity, adult, authentic living

## 1. Introduction

Psychology has been diversified and enriched by different theoretical approaches over time until today. Based on this change and development, human and development processes have been explained with various theoretical views (Işık, 2018). In this context, most research that is carried out in the field of psychology today relies on a positive psychology approach (Deci & Ryan, 2000; Seligman & Csikszentmihalyi, 2000; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997; Wong, 2011).

Positive psychology prefers investigating the areas of human life that are open to development rather than those that are abnormal and dark (Seligman & Csikszentmihalyi, 2000). This approach, which has gradually increased its influence in the field of psychology (Wong, 2011), has as much paved the way for the development of new concepts and intervention methods (Salanova Soria & Gumbau, 2016), as providing the basis for revisiting previous concepts (Fromm, 2017; Harter, 2002; Yalom, 1980). In this respect, one of the

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concepts studied in positive psychology is authenticity (Deci & Ryan, 2000; Sheldon, Ryan, Rawsthorne & Ilardi, 1997).

Authenticity, as it can also be expressed as one's self-knowledge (Maslow, 2010), is the manner in which a person shapes their life according to their feelings, thoughts, and values rather than the way dictated by society (Kernis & Goldman, 2006; Starr, 2008). Described as a person's true self (İlhan & Özdemir, 2013), authenticity was first coined by Heidegger (Kernis & Goldman, 2006). Later, this concept was defined as the true self and false self under one dimension (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). Authenticity was also defined based on theoretical approaches and studied as a triple structure by Barrett-Lennard (1998). Apart from these, some researchers also explained it by creating a model (Kernis & Goldman, 2006; Wood, Linley, Maltby, Baliousis & Joseph, 2008) And likewise, several studies on authenticity are found in the literature (Barrett-Lennard, 1998; Harter, 2003; İlhan & Özdemir, 2013; İmamoğlu, Günaydın, & Selçuk, 2011; Kernis & Goldman, 2006). According to the models created, research conducted, and theoretical views raised, this concept is associated with self, identity (Wood, Linley, Maltby, Baliousis, & Joseph, 2008), self-honesty, being open to people (Kernis, 2003), enjoying different experiences (Deci & Ryan, 2000), well-being, life satisfaction, ability to establish healthy relationships (Toor & Ofori, 2009), and altruism (İlhan & Özdemir, 2013). For example, Duman (2014) reported that there was a significant relationship between prospective teachers' authenticity and happiness. Investigating the partial mediation of spirituality between authenticity and happiness, Aydoğan, Özbay, & Büyüköztürk (2017) reported that spirituality had a partial mediating role. Apart from happiness, the relationship between authenticity and personality traits has also been looked into. In this context, Fleeson & Wilt (2010) found that authenticity was associated with emotional stability, extroversion, awareness, and compliance. Some studies in the literature have reported that authenticity is negatively related to some concepts, such as narcissism (Byrne & O'Brien, 2014).

Authenticity, which is stated to mostly improve one's life positively, helps people to establish successful relationships with the social structure that they are in (Geçtan, 2004). It is affected by individual, familial, and environmental factors (McGraw, 2001; Lopez & Rice, 2006). When the aforementioned three elements are healthy, the person achieves a high level of authenticity (Kernis & Goldman, 2005; Parmar & Rohner, 2005; Sağlam, 2012; Scaramella & Leve, 2004). Therefore, the person themselves, their family, and the social structure they belong to, play an important role in the development of that person. This situation, which has also been established by research, simultaneously helps the person to develop positively and affects them constructively in the spiritual sense (Elder & Shanahan, 2006; Gottlieb, Wahlsten, & Lickliter, 2006). In this way, the person realizes their self-regulation more healthily.

Self-regulation is a process that starts from the individual and moves on to their social environment (Gottlieb, Wahlsten & Lickliter, 2006), since humans are social beings. For this reason, if a person aims to exhibit a positive development, they should establish quality relationships with, both other people (Lerner, Dowling & Anderson, 2003) and themselves (Lerner, Lerner, Almerigi, Theokas, Phelps, Gestsdottir & vonEye, 2005). These relationships are established by mutual interaction (Jelicic, Bobek, Phelps, Lerner & Lerner, 2007). In this way, contributions made based on positive development will help create a healthier individual and society (Crocetti, Erentaitė & Žukauskienė, 2014). In fact, contribution helps people to know themselves better and develop a sense of belonging (Sherrod, Torney-Purta & Flanagan, 2010; Stukas, Daly & Clary, 2006). It is considered as one of the factors that helps an individual to develop positively (Youniss & Levine, 2009). With contribution, the person positively affects their self-development, the development of their family, and the community they live in (Truskauskaitė-Kunevičienė, 2015; Truskauskaitė-Kunevičienė & Kaniušonytė, 2018). This concept is also related to the characteristics of the person, such as competence, character, confidence, and self-regulation. There is a bulk of literature on the concept of contribution (Aldemir & Balcı-Çelik, 2020; Diener, 1994; Kaniušonytė & Žukauskienė, 2018; Lerner, Dowling & Anderson, 2003; Truskauskaitė - Kunevičienė, 2015; Truskauskaitė-Kunevičienė & Kaniušonytė, 2018). For instance, Kaniušonytė & Žukauskienė (2018) reported that positive relationships established with family members played an important role in the formation of a harmonious family and that the identity status partially mediated the formation of these relationships. Additionally, it was documented that the positive effect of the family supported the positive development of the child. Truskauskaitė-Kunevičienė (2015) found that life satisfaction and performing voluntary activities, positively predicted the contribution of men to themselves, family, and community.

When the literature was reviewed, it was found that there was no research investigating the concepts of authenticity and contribution together. The study of concepts, such as authenticity and contribution in individualist and collectivist cultures is important for the cross-cultural usefulness of these two concepts. Besides, as is known, the concept of contribution has been investigated by a limited number of studies in Turkish literature (Aldemir & Balci-Çelik, 2020) and foreign literature (Diener, 1994; Kaniušonytė & Žukauskienė, 2018; Lerner, Dowling & Anderson, 2003; Truskauskaitė-Kunevičienė, 2015; Truskauskaitė-Kunevičienė & Kaniušonytė, 2018). For this reason, it is thought that the current study will contribute to the literature and help new research through different methods and techniques. For all these reasons, this study mainly aimed to reveal how the contribution levels of adult individuals in the Turkish culture supported their level of authenticity.

## 2. Method

### 2.1. Participants

We reached three different sample groups in this study. These sample groups were recruited from two different provinces located in the Central Black Sea Region. The first sample group (n = 198) was determined by Aldemir & Balci-Çelik (2020) to validate the Three-Dimensional Contribution Scale (3DCON), which had been validated in adolescents, in the adult sample. The second sample group of the study (n = 383) was reached to reveal in what way the 3DCON supported authenticity. The third sample group was formed for test-retest reliability (n = 58). Accordingly, the study was carried out with a total of 637 adults, including 308 females (48.35%) and 329 males (51.65%). We reached enough participants for both study groups of the present study (Stevens, 1996, as cited in Seçer, 2015; Tinsley & Kass, 1979). There are various views in the literature about conducting validity and reliability analyses properly. For example, according to some views, it is necessary to reach a sample size of at least 10 times the number of items on the scale used (Tinsley & Kass, 1979, as cited in Seçer, 2015), or a data sampling of 5–20 times the number of items on the scale (Stevens, 1996).

### 2.2. Study 1

Participants in the first sample group of the study consisted of adults between the ages of 20–55 from various professions (n = 198). Within these, 105 (53%) of the participants were female, 93 (47%) were male, 91 (46%) were married, 107 (54%) were single, and 49 (24.7%) did not have any income. Regarding the monthly income levels, 10 of the participants (5.1%) were found to earn between TRY 500-1499, 23 (11.6%) of them between TRY 1500-2499, 14 (7.1%) of them between TRY 2500-3499, 31 (15.7%) of them between TRY 3500-4499, 29 (14.6%) of them between TRY 4500-5499, and 42 (21.2%) of them earned TRY 5500 or above.

### 2.3. Study 2

The second sample of the study consisted of 383 participants from various professions, which included 184 (48%) females, 197 (52%) males, and two with no sex specification (n = 383). Moreover, of the participants aged between 20 and 55, 246 (64.2%) were married, and 135 (35.3%) were single. Two participants did not state their marital status. For the second stage of the study, the third set of data was collected in the province for test-retest reliability; a total of 58 adults, consisting of 19 (32.8%) females and 39 (67.2%) males, were reached.

### 2.4. Data Collection Tools

In the study, three different scales were used for data collection. These scales were the Turkish form of the Three-Dimensional Contribution Scale (3DCON) developed by Truskauskaitė-Kunevičienė & Kaniušonytė (2018); the Turkish form of the Brief Resilience Scale (BRS) developed by Smith, Dalen, Wiggins, Tooley, Christopher, & Jennifer Bernard (2008); and the Turkish form of the Authenticity Scale developed by Wood, Linley, Maltby, Baliousis, & Joseph (2008). Further, a personal information form was used to collect data about the study group.

**2.4.1. The Three-Dimensional Contribution Scale (3DCON):** This scale was developed by Truskauskaitė-Kunevičienė & Kaniušonytė (2018) and adapted to the Turkish context by Aldemir & Balci-Çelik (2020). It consists of 15 items and three subscales that measure individuals' contributions to themselves, their families, and the society they live in. It has a five-point Likert-type scale, and each item is scored using options ranging from 1 (strongly disagree) to 5 (strongly agree). There are no reversed items on the scale. For this reason, the total high scores obtained from the contribution-to-self subscale (Sample item: I think about who I want to be

in the future), the contribution to family subscale (Sample item: I share my knowledge with my family members), and the contribution to the community subscale (Sample item: I participate in voluntary work) indicate that the individual makes a high level of contribution, while low scores from these subscales show that the individual makes a low level of contribution. The lowest and highest scores that can be obtained from the scale range between 15 and 75. High scores obtained from the scale indicate a high level of contribution. McDonald's omega reliability/internal consistency coefficients for the contribution to self, the family, and the community subscale scores and the overall score of the scale were found to be .87, .89, .91, and .92, respectively. The internal consistency analysis was used to establish the reliability of the scale. The construct validity of the scale was calculated with the results of the confirmatory factor analysis (CFA). The content validity of the scale was established by six individuals who are experts in positive youth development (Truskauskaitė-Kunevičienė & Kaniušonytė, 2018).

**2.4.2. The Brief Resilience Scale (BRS):** This scale was developed by Smith et al. (2008) to measure the psychological resilience of individuals and adapted to the Turkish context by Doğan (2015). The BRS is a 5-point Likert-type, 6-item, and self-report measurement tool. Some of the items on the scale are reversed. High scores obtained from the scale indicate high psychological resilience. The development of the scale and its validity and reliability studies were conducted with four different study groups. The first two groups consisted of university students, and the other two groups included patients with heart disease and fibromyalgia. The exploratory factor analysis was conducted to determine the construct validity of the scale. As a result of the analysis, it was found that the scale had a single factor structure that explained 61%, 61%, 57%, and 67% of the total variance for the four different sample groups, respectively. The factor loadings of the scale items were found to vary between .68 and .91. The reliability of the scale was calculated with internal consistency and test-retest methods. Accordingly, the internal consistency reliability coefficient was found to vary between .80 and .91. The test-retest reliability coefficient varied between .62 and .69. Relationships between the BRS and other scales were examined within the scope of the criterion-related validity. Accordingly, significant positive relationships were found between the BRS and ego resilience, optimism, life goals, social support, positive coping strategies, and positive emotions. Also, significant negative relationships were found between the BRS and pessimism, depression, anxiety, negative emotions, perceived stress, and negative coping strategies.

**2.4.3. The Authenticity Scale (AS):** The 12-item Authenticity Scale developed by Wood, Linley, Maltby, Baliousis & Joseph (2008) was used to measure authenticity in this study. The scale consists of three subscales, namely "self-alienation," "acceptance of external influences," and "authentic living," and each item on the scale is scored between 1 and 7. The scale was adapted to the Turkish context by İlhan & Özdemir (2013). Psychometric studies of the Turkish form indicated that the scale had the same structure as the original form. In the Turkish adaptation study of the scale, Cronbach's alpha internal consistency coefficients were found to be  $\alpha = 0.79$  for self-alienation,  $\alpha = 0.67$  for acceptance of external influences, and  $\alpha = 0.62$  for authentic living. During the development of the original form of the scale, the coefficients were found to be  $\alpha = 0.78$  for self-alienation,  $\alpha = 0.78$  for acceptance of external influences, and  $\alpha = 0.69$  for authentic living. In the present study, the coefficients of the scale were 0.77 for self-alienation, 0.80 for acceptance of external influences, and 0.66 for authentic living.

## **2.5. The Process**

In the present study, the Three-Dimensional Contribution Scale (3DCON), which was adapted to the Turkish context by Aldemir & Balcı-Çelik (2020), was initially tested for validity and reliability in adult individuals. For this step of the research, data was collected in a province in the Central Black Sea Region for the CFA. After the scale was proven to be a valid and reliable measurement tool in adult individuals, another set of data was collected in another city in the same geographical region for the criterion validity, test-retest reliability, and second-stage study of the 3DCON. Then, the raw data was transferred to the SPSS software package, and the gaps in the data set were filled-in using arithmetic mean scores. Afterward, an extreme value analysis was performed and thirty-one data, determined to be extreme in the second stage of the study, were deleted. The kurtosis and skewness coefficients of the items were examined with the normality test, and it was observed that the scale items were within a normal range (-3, +3).

## 2.6. Data Analysis

The validity of the scale was examined with the CFA and the criterion-related validity. In the CFA, modification recommendations were taken into consideration, and necessary corrections were made. For the goodness of fit indices of the 3DCON, the following values and the criteria in Table 1 were taken as a basis: RMSEA <.10 (Bentler & Bonett, 1980); CFI ≥.90 (Bentler, 1990); IFI ≥.90 (Bollen, 1989); GFI ≥.85 (Jöreskog & Sörbom, 1988); and AGFI ≥.80 (Marsh, Balla & McDonald, 1988). The reliability was calculated using Cronbach's alpha internal consistency coefficient. All validity and reliability analyses were conducted using the SPSS 24.0 and AMOS 22.0 software packages.

**Table 1.** *The goodness of fit indices*

GOODNESS OF FIT INDICES OF THE MODEL	GOOD FIT <sup>1</sup>	ACCEPTABLE FIT <sup>1</sup>
$\chi^2$	$0 \leq \chi^2 \leq 2df$	$2df \leq \chi^2 \leq 3df$
$\chi^2/df$	$0 \leq \chi^2/df \leq 3$	$3 \leq \chi^2/df \leq 4-5$
GFI	≥.90	.89-.85
AGFI	≥.90	.89-.85
CFI	≥.97	≥.95
IFI	≥.95	.94-.90
RMR	≤.05	.06-.08
RMSEA	≤.05	.06-.08

<sup>1</sup> Kaynak: Karagöz (2016) and Meydan and Şeşen (2015).

## 3. Findings

### 3.1.1. Findings on construct validity (Unrelated Model)

For the scale adaptation study, the CFA was conducted on the data collected from 198 participants within the scope of the construct validity study, through the SPSS 24.0 and AMOS 22.0 software packages, by using the maximum likelihood estimation method. In the analysis, the model fit indices showed that the data could be defined by a three-factor solution. As a result of the CFA conducted for the Turkish adaptation of the 3DCON, the correlations indicated that the goodness of fit indices ( $\chi^2 / df = 4.30$ ; GFI =.80; RMR =.186; CFI =.73; IFI =.74; AGFI =.73; RMSEA = 13) were not at an acceptable level and that the factor construct of the scale did not yield acceptable statistical results for the Turkish culture.

### 3.1.2. Findings on construct validity (Relational Model)

For the scale adaptation study, the CFA was conducted on the data collected from 198 participants within the scope of the construct validity study, through the SPSS 24.0 and AMOS 22.0 software packages, by using the maximum likelihood estimation method. In the analysis, the model fit indices showed that the data could be defined by a three-factor solution. In line with the suggestions of the correction indices, the error covariance of the items 14 and 15 of the 3DCON were correlated. As a result of the CFA performed for the Turkish adaptation of the 3DCON, the correlations indicated that the goodness of fit indices ( $\chi^2/df=2.03$ ; GFI=.90; RMR=.04; CFI=.92; IFI=.92; AGFI=.86; RMSEA=.07) were at an acceptable level and that the factor construct of the scale was valid and reliable for the Turkish culture (in adults). Figure 1 presents the model for the 3DCON.

As seen in Figure 1, all of the loading values of the items in the findings of the analysis were positive and significant. The loading values of the items varied between.34 and.79. The lowest loading value belonged to the item "I think about who I want to be in the future" (item 3), which is in the contribution-to-self subscale; while the highest loading value belonged to the item "I participate in voluntary work" (item 12), which is in the contribution to the community subscale.

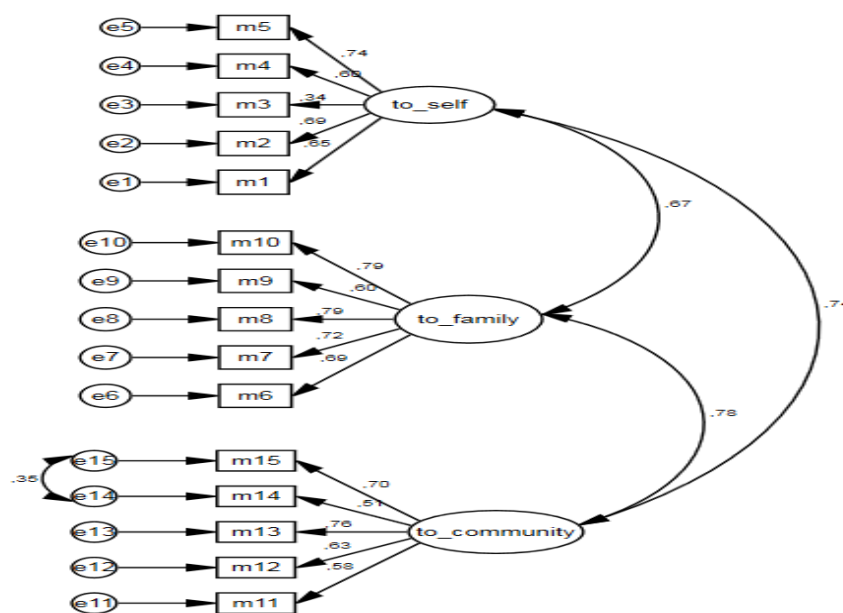


Figure 1. Confirmatory Factor Analysis (Related Model)

### 3.1.3. Criterion-Related Validity

For the criterion validity, the relationships between the scores obtained from the BRS (Doğan, 2015) and the scores obtained from the adapted Three-Dimensional Contribution Scale were examined. A significant correlation was found between the first collected data and the two forms (contribution-to-self subscale -BRS  $r = .28$ ; contribution to family-BRS  $r = .08$ ; contribution to community-BRS  $r = .15$ ; 3DCON-BRS  $r = .22$ ;  $p < .001$ ).

## 3.2. Findings on Reliability

### 3.2.1. Internal consistency reliability

Cronbach's alpha internal consistency reliability coefficient of the Three-Dimensional Contribution Scale was examined. The coefficient was found to be .88. Cronbach's alpha internal consistency reliability coefficients of the subscales were .73, .83, and .77, respectively. According to the literature, these values were acceptable (Alpar, 2013; Kline, 2000). The results suggested that the internal consistency of the scale in the Turkish culture was close to its original form.

### 3.2.2. Item-Total Test Correlation

With the item-total test correlation, the relationship between each item on the scale and the total score was examined. The high correlation of each item with the total test score shows the consistency of the measurement tool (Tezbaşaran, 1997). There are studies in the literature that demonstrate the application of this criterion (Sakallı-Uğurlu, 2008). According to the results of the corrected item-total test score correlation analysis, the item-total test correlation values of the Three-Dimensional Contribution Scale ranged from .32 to .69.

Item-total test score correlations were also examined for the subscales. Accordingly, the corrected item-test correlation values were between .32 and .58 for the contribution-to-self subscale, between .54 and .70 for the contribution to family subscale, and between .49 and .64 for the contribution to community subscale. The minimum required value for the item-total test correlation is specified as .30 in the related literature (Kline, 2000). Accordingly, the item-total test correlation coefficients calculated both for subscales and the overall scale were found adequate.

### 3.2.3. Test-Retest Reliability

To check the time-dependent reliability of the 3DCON, the scale was administered to the same group of participants twice with a two-week interval. As a result of Pearson's correlation analysis, the test-retest reliability of the Three-Dimensional Contribution Scale was found to be .70 ( $n = 58$ ,  $p < .001$ ). Since the threshold limit for test-retest reliability was determined to be .70 according to Karakoç & Dönmez (2014), it can be said that the Three-Dimensional Contribution Scale had a satisfactory level of test-retest reliability. Some other

reliability analyses have also been used in various studies for test-retest reliability. To better reveal that the assessment tool made stable measurements, the paired samples t-test results were examined. According to the results, the p-value of the paired samples' t-test was greater than .01 ( $.68 > 0.01$ ), and no difference was found between the mean scores of the first collected data and the data collected from the same participants later. According to this result, the means of the first collected data ( $\bar{x} = 62.68$ ) and the data collected later ( $\bar{x} = 63.02$ ) were close to each other, which revealed that the scale was stable.

### 3.3. Findings on the Second Stage of the Study

In the first stage of the present study, the validity and reliability of the Three-Dimensional Contribution Scale in an adult sample in the Turkish culture were established. Then, in the second stage of the study, the manner in which contribution supported authenticity was investigated. The study results are given in Table 2, Table 3, Table 4, and Table 5.

**Table 2.** *The Result of The Regression for Total Authenticity Score*

	R	R <sup>2</sup>	Corrected R <sup>2</sup>	B	SH	B	t	p
Constant (Authenticity) Contribution	.06	.004	.001	-.07	.06	.06	1.1	.12

Table 2 presents the extent to which the authenticity variable predicted the contribution level according to the simple linear regression analysis. No significant result could be obtained as a result of this process.

**Table 3.** *The Result of The Regression for The Self-Alienation Level*

	R	R <sup>2</sup>	Corrected R <sup>2</sup>	B	SH	B	t	p
Constant (self-alienation) Contribution	.18	.03	.03	-.13	.04	-.18	-3.7	.000*

\* $p < .05$

Table 3 presents the extent to which the self-alienation variable predicted the contribution level according to the simple linear regression analysis. As a result of this analysis, the values were found as follows:  $R = .18$  and  $R^2 = .03$ . As seen in the table, this variable explained 3% of the total variance in the contribution level.

**Table 4.** *The Result of The Regression for Acceptance of External Influences*

	R	R <sup>2</sup>	Corrected R <sup>2</sup>	B	SH	B	t	p
Constant (acceptance of external influences) Contribution	.03	.00	-.00	.02	.04	.03	.57	.56

\* $p < .05$

Table 4 shows the extent to which the self-alienation variable predicted the contribution level according to the simple linear regression analysis. No significant result was obtained as a result of this analysis.

**Table 5.** *The result of The Regression for Authentic Living*

	R	R <sup>2</sup>	Corrected R <sup>2</sup>	B	SH	B	t	p
Constant (Authentic living) Contribution	.33	.11	.11	.18	.03	.33	6.9	.000**

\*\* $p < .001$

Table 5 shows the extent to which the authentic living variable predicted the contribution level according to the simple linear regression analysis. As a result of this analysis, the following values were found:  $R = .33$ ,  $R^2 = .11$ . As seen in the table, this variable explained 11% of the total variance in the contribution level.

**Table 6.** *Findings for the effect size and confidence intervals*

	$\bar{x}$	ES	95% Confidence interval	
			Lower limit	Upper limit
Constant (Authenticity)	47.44	.003	36.19	50.35
Constant (Self-alienation)	10.51	.033	14.37	23.47
Constant (Acceptance of external influences)	12.85	.0008	7.09	16.05
Constant (Authentic living)	24.07	.110	9.59	16.05

Table 6 presents the mean, effect size (ES), and confidence interval values of the constant variable and its subdimensions. As seen in Table 6, the  $\bar{x}$  values of the variable and its subdimensions varied between 10.51 and 47.44. Also, the values of the ES and the confidence interval ranged from .0008 to .110 and from 16.047 to 50.355, respectively.

#### **4. Discussion, Conclusion, and Recommendations**

This study aimed to investigate the psychometric properties of the Three-Dimensional Contribution Scale (3DCON), which was developed by Truskauskaitė-Kunevičienė & Kaniušonytė (2018) to measure the contribution levels of individuals and adapted to the Turkish context by Aldemir & Balcı-Çelik (2020), in adult individuals, and revealed how the contribution levels of adult individuals supported their authenticity levels.

The results of the adaptation study of the 3DCON, whose validity and reliability were investigated in adults, showed that the scale was valid and reliable enough to measure the contribution levels of adult individuals. In the study, first, the psychometric properties of the scale were examined by using CFA, calculations of test-retest and internal consistency coefficient, and criterion-related validity methods. The CFA was conducted to determine whether the three-factor structure of the original form of the scale could be preserved in a sample of adult individuals. According to the results, the goodness of fit indices were within an acceptable range (Karagöz, 2015). Thus, this showed that the three-factor structure of the scale was preserved in the sample consisting of adult individuals. The BRS was used to reveal the criterion-related validity of the scale. According to the correlation analysis conducted, the 3DCON was found to have a significant positive relationship with the BRS. In addition to these, the test-retest results (.70) and internal consistency coefficients (.88) of the scale were in the desired range (DeVellis, 2012; Nunnally & Bernstein, 1994), which showed that the measurements made by the tool were stable.

The findings showed that the contribution could be validated across cultures, but it did not have a significant relationship with the total authenticity score. It was theoretically supported that as the contribution score increased, the authenticity of the individuals would increase, as well; however, the current study could not reach a statistically significant result. According to the literature, statistical significance plays an important role in obtaining information about the population (Karagöz & Ekici, 2004). Nevertheless, the power of analysis and its role in reaching the population is not determined solely by statistical significance (Ellis, 2010; Murphy & Myers, 2004). When the present study was examined in terms of subscales, it was found that contribution negatively supported the self-alienation subscale of authenticity, yet it had no significant relationship with the acceptance of the external influences subscale. However, as theoretically expected, it was found that contribution positively supported the authentic living subscale. Studies revealing the relationship between these two concepts were not present in the literature. Yet, some studies attempted to reveal the correlation of these two concepts indirectly. For example, Wang (who divided authenticity into three types, namely dissociated, balancing, and egocentric) stated that a balancing authenticity was characterized by a sharing and emotional partnership (Wang, 2015). Byrne & O'Brien (2014) reported that people with authentic-high self-esteem had positive social relationships. In another study, Sağlam (2012) found that people with high authenticity also had high social desirability levels; although, according to the literature, authenticity and contribution affect the individual positively (Crocetti, Erentaitė, & Žukauskienė, 2014; Deci & Ryan, 2000; Toor & Ofori, 2009; Truskauskaitė-Kunevičienė, 2015; Youniss & Levine, 2009; Wood, Linley, Maltby, Baliousis & Joseph, 2008). It is also stated in the literature that authenticity is influenced by individual, familial, and environmental factors (McGraw, 2001; Lopez & Rice, 2006). Based on all this information, it can be said that the contribution levels of individuals affect their levels of authenticity. Likewise, it can be stated that individuals with high contribution scores will have high levels of authenticity. In other words, individuals' level of contribution is a factor that determines their authenticity levels.

In conclusion, establishing the validity and reliability of the 3DCON (which was proven in adolescents by Aldemir & Balcı-Çelik [2020]), in adult individuals increased the usefulness of the scale. Additionally, the validity and reliability study was conducted in people with different demographic characteristics. This affects the generalizability and usefulness of the scale positively. However, this study was conducted with only healthy individuals, which accounts for a limitation of the research. For this reason, examining the



3DCON with a sample of individuals with chronic diseases (heart, diabetes, blood pressure, etc.) or trauma will increase the generalizability and usefulness of the scale. Apart from this, the validity and reliability of the scale were studied with the data collected from two different provinces in the Central Black Sea Region. Therefore, future studies can include individuals from different geographical regions of Turkey to ensure more cultural diversity and increase the usability of the scale.

In the second phase of the present study, it was found that contribution predicted authenticity but that there was no statistical significance between the overall authenticity score and the acceptance of external influences subscale. Although research findings have shown the theoretical ties between the concepts, no statistical significance has been found. As is known, every scientific study has some limitations and errors, and this affects many factors, including the findings. At the same time, factors, such as the sensitivity level of the measurement tools employed in a study, the effect size, and sample size, also affect the study (Ellis, 2010; Murphy & Myers, 2004). For this reason, we preferred measurement tools with proven validity and reliability in the present study. Regarding the effect sizes of the study findings, though weak, there was an effect among the variables (Cohen, 1988), and 95% confidence intervals of the constant variables were also documented as indicated in Table 6. The criteria in the literature were taken into consideration in the selection of samples (Stevens, 1996; Tinsley & Kass, 1979). Despite all these, no statistical significance could be obtained in the present study. This may have been due to the sample size or the preferred measurement tools. The sample size is considered important for statistical significance (Ellis, 2010; Murphy & Myers, 2004), and every measurement tool has certain limitations (Krech & Crutchfield, 1967). With all these evaluations, it is thought that the findings in the present study will benefit meta-analysis studies. In addition, the findings of a single study cannot be seen as a complete criterion, and it is important to support or reject research findings with different study groups and measurement tools. Due to such reasons, it is important to investigate these concepts more comprehensively by using different research methods with different sample groups, where statistical significance can or cannot be achieved, and the theoretical ties can be supported. To generalize the results of the present study, we recommend that researchers should examine these concepts with different notions (such as well-being, life satisfaction, and the search for meaning) and the different fields of career counseling. In fact, conducting model studies with concepts that help the positive development of individuals will contribute to establishing more comprehensive ties between these concepts. Besides, these two concepts, authenticity and contribution, can be useful in the psychological counseling process and may be included in studies that will support the individual's positive development in school environments, which is one of the influencing factors of the individual.

The concept of authenticity has been addressed in domestic and international literature for a long time. However, the concept of contribution has recently been used in international literature, and it is a new concept in domestic literature. This concept focuses on the individual themselves and the context that they are in. For this reason, it is important to reveal the direction of the efficiency of contribution on the individual and the context in studies to be conducted with different study groups. Reflecting on this, it is considered that it will be beneficial to investigate the concept of contribution in scientific studies on society, married individuals, couples, and family processes. In fact, this concept should be used in counseling processes with individuals, groups, and families, and its effectiveness should be investigated, since how and where these resources will be used is as important as the individual's power sources. Moreover, the effectiveness of this concept should be investigated in studies to be conducted in the clinical field with experimental and quasi-experimental methods as the use of distinct methods and techniques in the emergence of different and effective intervention methods is considered important.

## 5. References

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