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Adaptation of The Personality Traits Scale of E-Sports Players to Turkish Culture

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Abstract

Aim: This study aims to adapt the scale developed by Yim et al. (2023) for measuring the personality traits of e-sport players to Turkish culture.
Methods: This study, which was designed in accordance with the scale adaptation study, is a descriptive research that questions the current situation.
Results: The scale was translated into Turkish using the forward-backward translation method with the assistance of six personality experts. Data for the study were collected from 240 e-sport players who voluntarily agreed to participate. To validate the structure previously established by Kim et al. (2023) for Turkish culture, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted. Reliability analyses were performed using test-retest and Cronbach's Alpha methods. The SPSS 23 program was used for EFA, while the Amos package was utilized for CFA. The analysis results confirmed the scale's nine-item, single-factor structure. The reliability findings indicated that the internal consistency and test-retest values fell within the expected range.
Conclusion: As a result, the Turkish adaptation of the scale, conducted in this study, has been identified as a valid and reliable measurement tool for determining the personality traits of e-sport players in Turkey.

Keywords

E-sport,
Personality traits,
E-sport player.

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E-Spor Oyuncularinin Kişilik Özellikleri Ölçeğinin Türk Kültürüne Uyarlanması

Özet

Amaç: Bu çalışmada, Yim ve ark., (2023) tarafından e-spor oyuncularının kişilik özellikleri ölçmek amacıyla geliştirilen ölçeğin Türk kültürüne uyarlanması amaçlanmıştır.
Yöntem: Ölçek uyarlama çalışmasına uygun düzenlenen bu çalışma mevcut durumu sorgulayan betimsel bir araştırmadır.
Bulgular: Ölçek altı kişilik uzman ekip eşliğinde ve çevir-geri çevir yöntemi kullanılarak Türkçe'ye çevrilmiştir. Çalışma verileri araştırmaya gönüllü katılmayı kabul eden 240 e-spor oyuncusundan toplanmıştır. Ölçeğin daha önce Kim ve ark. (2023) tarafından ortaya çıkarılan yapısının türk kültürü için geçerliliğini ispatı için Açıklayıcı Faktör Analizi ve Doğrulayıcı (DFA) faktör analizi yapılmıştır. Ölçeğin güvenirlik analizleri için test tekrar test ve Cronbach Alfa analizleri gerçekleştirilmiştir. AFA için SPSS 23 programı kullanılmış ve DFA için Amos paket programı kullanılmıştır. AFA ve DFA analizleri sonucunda ölçeğin 9 madde ve tek faktörlü yapısını doğrulamıştır. Güvenirlik analizi bulguları, iç tutarlılık ve test tekrar test değerlerinin beklenen değer aralığında olduğunu göstermiştir.
Sonuç: Sonuç olarak, Türkçe uyarlaması bu çalışma ile gerçekleştirilen ölçeğin Türkiye'deki E-spor oyuncularının kişilik özelliklerinin belirlenmesinde kullanılabilecek geçerli ve güvenilir bir ölçme aracı olduğu tespit edilmiştir.

Anahtar Kelimeler

E-spor,
Kişilik özellikleri,
E-spor oyuncusu.

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INTRODUCTION

E-sports has developed rapidly in recent years in terms of both entertainment and competition. In addition to traditional sports, these competitive events held on digital platforms require not only gaming skills but also certain personality traits. Therefore the performance of e-sports players depends not only on their technical competence but also on their personality traits. For instance, being highly competitive and goal-oriented are among the significant factors that positively affect the performance of e-sports players (Kowert and Oldmeadow, 2013).

Studies have revealed that e-sports players' ability to cope with stress is also a critical factor affecting their performance (Pawlikowski et al., 2013). Psychological resilience, decision-making under

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pressure and collaborative teamwork skills stand out as personality traits that directly affect e-sports players' performance (Zhang and Zhao, 2020). In-game social interactions further contribute to the development of e-sports players' communication skills and emotional intelligence (Valkenburg and Peter, 2013).

Owing to the expedited development of technology and the internet, e-sports has become a rapidly growing industry and has already created millions of players and viewers. E-sports players with various personality traits and skills achieve success in this dynamic field. Accordingly, examining the personality traits of e-sports players is a significant issue both in terms of understanding the factors affecting the performance of the players and in determining the training and development strategies in this field (Smith et al. 2019 Thus, the study of e-sports players' personality traits is a crucial research area in both psychology and sports sciences.The competitive nature of e-sports requires players to develop not only their physical skills but also their mental and emotional skills.

Turkish culture has a unique structure in terms of social and psychological dynamics. Therefore, it is a significant issue to confirm whether or not internationally developed personality scales comply with Turkish culture (Yılmaz, 2021). Confirming the validity of the scales determining the personality traits of e-sports players in a cultural context may allow for better understanding and supporting these players. This study aims to adapt the "Gamer Identity Scale" measuring the personality traits of e-sports players to Turkish culture and to confirm the validity and reliability of this scale in Turkish. In this context, studies on the personality traits of e-sports players will be discussed in the light of a review on current literature and the details of the scale adaptation process specific to Turkish culture will be examined accordingly. This study will provide a basis for a more accurate understanding of the personality traits of Turkish e-sports players and will shed light on further research.

METHOD

Model of the research

This study, which was organized in accordance with the scale adaptation study, is a descriptive research that questions the current situation. The aim of the study is to adapt a scale whose validity and reliability have been proven in a foreign culture to Turkish culture. This section includes the stages of adapting the "Personality Traits of E-Sports Players Scale" developed by Yim et al., (2023) to Turkish.

The universe and sample of the research

The universe of our research consists of e-sports players in Turkey. The sample of the research consists of 240 e-sports players who participate in e-sports tournaments as licensed players, have licenses in university e-sports teams, and are members of amateur and professional e-sports teams. In order to adapt the "Player Identity Scale" to Turkish culture, convenience sampling method, which is one of the non-probability sampling methods, was used. This method was selected because it facilitates participant access (Fraenkel and Wallen, 2003). The research data were collected in three steps in line with the research objectives. In the first step, data were collected from (n=90) people to conduct explanatory factor analysis. In the second step, data were collected from the participants (n=150) for Confirmatory Factor Analysis (CFA), and in the third step, data were collected for the test-retest method that will be used to verify the reliability of the research. The sample of the study consisted of 240 participants; The sample size of the study, consisting of 240 individuals, was found to be sufficient, because in the literature, a sample size of 200 individuals or more is stated as a sufficient sample size for EFA and CFA analyses (Brown, 2006; Tabachnick and Fidell, 2013; Yong and Pearce, 2013). Considering the number of participants reached in this study, it was concluded that the sample size was sufficient.

Data collection tools of the research

A Personal Information Form (PIF) was used to determine the personal characteristics of the participants whereas "Gamer Identity Scale", planned to be adapted to Turkish culture, was used to obtain the study data.

PersonalInformation form (PIF): A personal information form developed by the authors was used to collect personal characteristics (age, gender etc.) of the participants.

Gameridentity scale: The Gamer Identity Scale was developed by Yim, Lepp, Dowdell, and Barkley (2023). First the original manuscript of article was obtained in order to adapt the scale to the target language, Turkish. Following the necessary examinations, it was decided to adapt the scale to Turkish culture. Then, the responsible author of the scale was contacted via e-mail to obtain the necessary permissions. The scale consists of 9 items and a single factor. It is a 7-point Likert type measurement tool. In accordance with the reliability analysis results, the Cronbach alpha value of the scale was determined as 0.90 (Yim et al., 2023).

Scale Translation Process

For the purpose of translating the scale into Turkish; Brislin's Model (1986), a widely used approach involving independent translation and blind back-translation to ensure translation accuracy, was applied Translation of the original text into the target language, Turkish, was assigned to a committee consisting of two sports scientists with PhD and three English linguists working at Selçuk University School of Foreign Languages. The original text was shared with the committee members via e-mail and requested to be translated into the target language. The translation was submitted to the authors by the committee members via e-mail. The translated text was reviewed by the authors, and commonalities between the translations were identified. No significant differences were observed between the items. The scale translated into Turkish was then sent to two academicians specialized in sports sciences to be further checked. In line with the feedback obtained from academicians who are experts in the field of sports sciences, it was concluded that the item translations were appropriate for the field. The final Turkish version of the scale and the original text were interpreted by the committee once again in terms of similarity and they recommended not to make any additions or deletions in the text. Later, the Turkish scale was presented to 18 people who were interested in e-sports at the university where they studied and who had been licensed e-sports players for 3 years, and their evaluations were taken, and it was determined that the scale items were understandable. Consequently, the Turkish version of the scale was finalized and the data collection phase for confirming the validity and reliability analyses of the scale was initiated.

Data collection

Data required for confirming the validity and reliability of the Gamer Identity Scale were collected via submitting an online form developed by the authors to the participants through various social media platforms.

Data analysis of the research

SPSS 27.0 and AMOS programs were preferred for the statistical analysis of data collected with the Gamer Identity Scale. Before the analysis, it was checked whether the data collected from the participants within the scope of the research met some assumptions. Accordingly it was checked whether there was any missing data and outlier extreme values in the collected data. The analyses performed indicated that there was no missing data, and the Leverage values calculated for checking the outlier values confirmed that there were no outlier values. Another assumption checked on the data is the assumption of multicollinearity, it is expected that there will be no correlation of 0.80 or higher between the scale items. Correlation values between the items indicated that multicollinearity was not a problem regarding the scale items (Okursoy and Turan, 2014). Whether the data showed a normal distribution was checked with kurtosis and skewness values. These values are expected to be between +2.0 and -2.0 (Tabachnick et al., 2007). The obtained Skewness value was determined as -.482 and Kurtosis value was determined as -.743. The findings indicated that this range was met.

The construct validity of the scale was tested with Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), which are widely used in the literature. EFA was applied to test the structure of the scale adapted to Turkish. EFA was performed with SPSS 27.0 program and maximum likelihood extraction with varimax rotation, recommended in the literature, was preferred (Seçer, 2018). In order to determine the structure of the scale, the fit of the sub-dimensions and items obtained as a result of EFA was tested with CFA. Although different CFA fit indices are used in the literature, generally Chi-Square Goodness, AGFI (Adjusted Goodness of Fit Index), RMSEA (Root Mean Square Error of Approximation), CFI (Comparative Fit Index), GFI (Goodness of Fit Index), Standardized Root Mean Squared Residual (SRMR), NFI (Normed Fit Index), RFI (Relative Fit Index) and IFI (Incremental Fit Index) values were examined in this study (Schermelleh-Engel and

Moosbrugger, 2003; Meydan ve Şeşen, 2011;).It was determined that the data met the basic assumptions as provided above.

The reliability of the scale was confirmed with Cronbach's alpha coefficient (internal consistency coefficient) and test-retest methods. The criteria determined by Alpar (2010) were taken into consideration for the internal consistency coefficient. Cronbach alpha values between 0.80 and 1.00 indicate high reliability whereas values between 0.80 and 0.60 indicate high reliability, values between 0.60 and 0.40 indicate low reliability, and values between 0.40 and 0.00 indicate that the scale is not reliable (Alpar, 2010). Another method used to test reliability is the test-retest method. The authors collected data from 60 e-sports players who were not included in the EFA and CFA twice, within a three weeks (21 days) interval. The test-retest value of 0.70 and above, calculated with Pearson's Product-Moment Correlation Coefficient analysis, indicates that the scale is reliable (Tavşancıl, 2014).

FINDINGS

Factor analysis

Table 1. Exploratory factor analysis results

Test		Value
Kaiser-Meyer-Olkin Measurement of Sampling Adequacy		0.92
Bartlett's Test of Sphericity	Approximate Chi-Square	1,742.180
	sd	0.36
	p	0.00

It was determined that the data met the basic assumptions as provided above. The suitability of the collected data for factor analysis was checked with Kaiser-Meyer Olkin (KMO) and Bartlett tests. The KMO value is expected to be above 0.70 and the Bartlett value is expected to be significant (Tavşancıl, 2005). Pursuant to Table 1, the KMO value was 0.90 and the Bartlett test value was found to be significant. It was determined that all assumptions for the analyses were met.

Table 2. Total variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.204	68.930	68.930	5.862	65.131	65.131
2	0.643	7.149	76.079			
3	0.510	5.664	81.744			

The EFA analysis started with 9 items, as in the original version of the scale. As a result of the first analysis, it was determined that the single-factor structure with an eigenvalue of 1.0 and above explained 65.131% of the total variance. The literature requires each factor to explain at least 5.0% and above of the total variance (Kalaycı, 2014). According to Table 2, which presents the eigenvalues, at least 5.0% of the variance was explained in a single factor structure.

The formation of a factor structure similar to the original scale in the first analysis and the variance explained by the resulting structure at the desired level indicate that no further analysis is required and the obtained structure is sufficient (Scherer et al., 1988; Yaşlıoğlu, 2017).

Table 3. Factor loadings of ıtems and total variance explained

The name of the factor	İtems	Factor 1
The Personality Traits Scale of E-Sports Players	s5	0.873
	s6	0.857
	s8	0.852
	s3	0.822
	s2	0.818
	s4	0.789
	s7	0.775
	s1	0.735
	s9	0.729
Eigenvalues	6.204	
% of Variance	65.131	

The factor loadings of the items in the structure are presented in Table 3. Item factor loadings are required to be 0.32 and above in the literature (Seçer, 2018). The findings revealed that the factor loadings of the items in the scale are above the expected value. After determining the factor structure

of the scale, the factors were named. As both the number of items and factors are the same as the original scale, the scale was entitled as Gamer Identity Scale.

Confirmatory factor analysis (CFA):

CFA is a statistical method that allows existing theoretical structures to be tested with different samples in line with certain criteria. Within the scope of the method proposed in this study, CFA was applied to examine the compatibility of the factor structures determined as a result of EFA with different samples.

Table 4. Fit indices of the gamer identity scale

Model Fit Index	Perfect Range	Acceptable Range	Scale Value
X2/df	0<X2/df<2	2<X2/df<5	3.67
RMSEA	0.00<RMSEA<0.05	0.05<RMSEA<0.08	0.080
GFI	0.95<GFI<1.00	0.90<GFI<0.95	0.91
CFI	0.95<CFI<1.00	0.90<CFI<0.95	0.96
NFI	0.95<NFI<1.00	0.90<NFI<0.95	0.94
IFI	0.95<IFI<1.00	0.90<IFI<0.95	0.96
AGFI	0.95<AGFI<1.00	0.85<AGFI<0.90	0.85
SMRM	0 ≤ SRMR <,05	05 ≤ SRMR ≤ ,10	0.033

The CFA values of the Gamer Identity Scale are presented in Table 4. The findings confirmed that the Confirmatory Factor Analysis results met the expected fit index values (Schermelleh-Engel and Moosbrugger, 2003).

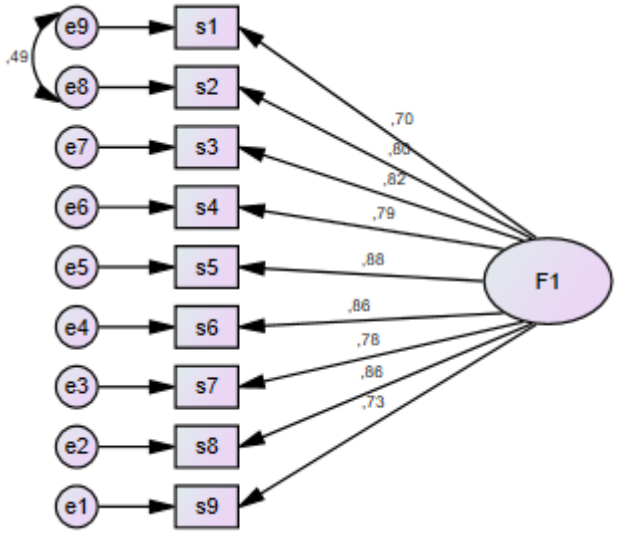

Figure 1. Standardized values of the gamer ıdentity scale

In order to make the analysis more compatible, a covariance connection was established between the error terms e8-e9 and more compatible results were obtained in the relevant values. Covariance assignment can be associated with the error terms of the items that predict the same factor aiming to measure the same feature (Meydan and Şeşen, 2011, p.82). The CFA path diagram drawn with the data collected within the scope of the study is presented in Figure 1. the literature requires the values of the standardized item loadings in the CFA results to be 1.0 and below (Jak et al., 2013; Pornprasertmanit et al., 2014). Pursuant to Figure 1, the obtained CFA values are below the critical value.

Reliability analysis findings

Table 5. Confirmation of the reliability of the gamer identity scale with ınternal consistency coefficient and test-retest methods

CompositeReliability (CR)		AverageVariance Extracted (AVE)	Test-Retest Method	Internal Consistency Coefficient
Gamer Identity Scale	0.94	0.64	0.82	0.94

Following the confirmation of the validity, the reliability of the Gamer Identity Scale was tested. In this regard, the test-retest values and internal consistency coefficients were checked. Findings revealed that the overall internal consistency coefficient of the scale, which was 0.92, was found to be high (Alpar, 2010). The second analysis conducted to confirm the reliability of the scale was the test-retest method, in which data were collected from 60 e-sports players twice, within a three-week interval. Collected data are presented in Table 5. The test-retest values of the sub-dimensions indicated that the scale is reliable (Tavşancıl, 2014).

When Table 5 is examined, it is seen that the AVE values are 0.64 for the personality traits scale of E-sports players. CR values are 0.94 for the personality traits scale of E-sports players. Considering that scales with a reliability coefficient of 0.70 and above are considered reliable in scale development and adaptation studies (Robinson et al., 1991;Tezbaşaran, 1997; Nunnaly and Bernstein, 1994; Pallant, 2005; Fraenkel et al., 2012), it can be said that the internal consistency, AVE, and CR values of the E-sports players' personality traits scale are sufficient.

DISCUSSION

This study aimed to adapt the Gamer Identity Scale, developed by Yim et al. (2023), to Turkish culture. The scale's validity was established through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), while its reliability was confirmed via internal consistency and test-retest analyses. EFA was conducted to assess the construct validity of the Gamer Identity Scale, using maximum likelihood extraction with varimax rotation, as recommended in the literature (Myung, 2003).

The factor loadings of the items in the Turkish version ranged between 0.72 and 0.87, exceeding the critical threshold of 0.32 (Seçer, 2018). In comparison, the original scale reported factor loadings between 0.64 and 0.77 (Yim et al., 2023). It is argued that cultural differences stand out as significant factors affecting the item loadings and are the reason for having different item loadings. It is emphasized in the literature that the variance explained by the factor structure obtained with EFA analysis is important (Tabachnick & Fidell, 2013). Although the significance has been emphasized, there are quite different opinions on the minimum acceptable value (Merenda, 1997; Peterson, 2000). In this study, the reference for 50% and above suggested by Kline (2016) as the variance explained by the factor structure was taken as the reference. In this study, it was determined that the variance explained by the factor structure calculated as 65.131% was quite sufficient. Total variance explained in the original scale was 50.5%. Pursuant to the literature, the total variance explained by the factor structure in both the original and Turkish versions of the scale meets the desired threshold.

The 9-item and single-factor structure revealed by EFA analysis in testing the validity of the scale was supported by CFA. CFA findings revealed that the model's SRMR value was 0.033, AGFI value was 0.91, NFI value was 0.94, GFI value was 0.91, IFI value was 0.96, CFI value was 0.96 and RMSEA value was 0.08. Findings confirmed that the CFA values were sufficient and parallel to the original scale (Yim et al., 2023). Internal consistency coefficient and test-retest methods were used to confirm the reliability of the Gamer Identity Scale used in this study. The overall internal consistency coefficient of 0.94 was considered to be high. The internal consistency values of the original scale were parallel to the findings of our study. Although it was not used in the original scale, the value obtained in the test-retest method (0.82) confirmed the reliability of the Turkish version of the scale (Tavşancıl, 2014).

Although the values obtained in our study are within acceptable ranges, there are some limitations in our study. The first limitation is that the data collected with the measurement tool belong to e-sports players residing in the Central Anatolia region only. It is therefore recommended to select a sample covering all of Türkiye for the purpose of further studies.

RESULTS

The aim of this study was to adapt a scale developed to assess the personality traits of e-sports players to Turkish culture and to conduct validity and reliability tests. The analyses indicate that the scale is appropriate for the Turkish sample and that its psychometric properties are at an acceptable level. The scale used to measure the personality traits of Turkish e-sports players provides high reliability and validity values, establishing a solid foundation in Turkish culture. The results obtained suggest that the personality traits of e-sports players may differ from those of the general population, and these

differences could have an impact on the motivation, behavior, and performance of e-sports players. The research findings indicate that analyzing the personality traits of e-sports players could be useful in the player selection process and the development of training programs.

In conclusion, adapting this scale to Turkish culture will increase its applicability in e-sports research and provide a deeper understanding of the personality traits of Turkish e-sports players.

RECOMMENDATIONS

The limitations of this study include the focus on a specific age range and a particular e-sport game. Future research may examine whether these findings are supported by studies involving wider age groups and different e-sport games. Additionally, studies on the long-term effects of e-sports players' personality traits on their performance will contribute significantly to the literature in this field.

Ethical Approval Permission Information
Ethics Committee: Selçuk Üniversitesi Spor Bilimleri Fakültesi Etik Kurul Komisyonu
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E-SPOR OYUNCULARİNİN KİŞİLİK ÖZELLİKLERİ ÖLÇEĞİ

No	**Ölçek İfadeleri** 1:Kesinlikle Katılmıyorum – 2:Oldukça Katılmıyorum – 3:Biraz Katılmıyorum – 4:Kararsızım – 5:Biraz Katılıyorum – 6:Oldukça Katılıyorum – 7:Kesinlikle Katılıyorum
1.	Oyun oynamakla ilgili çok sayıda hedefe sahibim.
2.	Oyun, öz benliğim için merkezi bir faktördür.
3.	Benim için oyuncu olmak oyun oynamaktan daha fazlasını ifade eder.
4.	Oyun, sık sık düşündüğüm bir şeydir.
5.	Oyuncu olmaktan gurur duyuyorum.
6.	Oyun oynarken bana yardımcı olacak durumları gerçekleştiririm.
7.	Oyun oynarken başkalarıyla etkileşim halinde olurum.
8.	Oyuncu topluluğuyla güçlü bir bağ sahip olduğumu hissederim.
9.	Bir oyuncu topluluğunun aktif bir üyesiyim.