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Research Article

# Gambling in Sports: Validity and Reliability Study of the Gambling Passion Scale

Ahmet Özsoy[1*], Aydanur Önal[2], Nuh Osman Yıldız[1]

[1] Bolu Abant İzzet Baysal Üniversitesi, Spor Bilimleri Fakültesi Bolu, Türkiye. ror.org/01x1kqx83

[2] Haliç Üniversitesi, Spor Bilimleri Fakültesi, İstanbul, Türkiye. ror.org/022xhck05

* Corresponding author: ahmetozsoy@ibu.edu.tr

**Abstract:** The purpose of this study is to adapt the "Gambling Passion Scale" loped Rousseau et al. (2002), to Turkish culture and to conduct validity and reliability analyses. The study was conducted using the survey model, one of the quantitative research designs. The adaptation process was carried out according to the five-step translation model recommended in the literature: translation into the target language, back-translation, expert review, pilot application, and validity-reliability analyses. The research group consisted of a total of 344 participants aged 18–35 who actively bet on sports (AFA=166; DFA=178). The results of the Exploratory Factor Analysis (EFA) of the obtained data revealed that the scale had a two-factor structure (Obsessive Passion and Harmonious Passion) and explained 63.9% of the total variance (KMO=0.92; Bartlett $\chi^2$=801.495; p<0.001). Factor loadings ranged from 0.53 to 0.92, Cronbach's Alpha coefficients were 0.85–0.90, and the Omega reliability coefficient was 0.90. According to the Confirmatory Factor Analysis (CFA) results, the goodness-of-fit indices are acceptable ($\chi^2$/df=1.76; RMSEA=0.066; CFI=0.981; SRMR=0.292). Furthermore, the CR (0.87–0.93) and AVE (0.58–0.73) values supporting construct validity confirm the convergent and discriminant validity of the scale. The findings indicate that the Turkish Culture Gambling Addiction Scale is a valid and reliable measurement tool for assessing individuals' levels of gambling addiction.

***Keywords:*** *Sports betting, Gambling addiction, Gambling passion*

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## I. INTRODUCTION

Throughout history, people have tended to engage in activities they enjoy for various reasons (Berridge & Dayan, 2021). One such activity is sports (Özkatar Kaya, 2022). Participation in sports is divided into two categories: active participation and passive participation (Schwarz & Hunter, 2008). Active participation refers to people who are directly involved in a sports activity (Cohen & Avrahami, 2005), while passive participation refers to participating in sporting events as a spectator. Sports spectators consist of people who watch, comment on, and make predictions about the outcomes of sports competitions (Lera-López et al., 2021). In this context, it has been observed that some spectators, who do not merely watch sports competitions, engage in betting behavior by transforming their predictions about the outcomes into a game (Wann et al., 2001).

Around the world, the act of playing games based on predictions about the outcome of sports competitions is referred to as betting (Tuncel, 2024). In betting games, which are also considered a form of gambling, predictions are made using the individual's analytical skills on the one hand, while the element of chance also significantly affects the results on the other (Yaşar, 2011). Due to increased access to technological tools and the internet, it has become a widespread form of gambling, particularly among young and adult males (Granero et al., 2020; Valenciano-Mendoza et al., 2023). Individuals who frequently engage in betting games are defined as betting enthusiasts (Morvannou et al., 2018). Gambling addiction manifests itself in two different ways: obsessive gambling and adaptive gambling. Obsessive gambling refers to individuals' participation in gambling as a result of uncontrollable urges that take over their identity, while adaptive gambling is described as the satisfaction individuals experience when they participate, even though it is not indispensable for them (Vallerand, 2015). Therefore, examining the different forms of gambling addiction that emerge in individuals necessitates the development and use of reliable measurement tools in this field.

A review of the literature reveals that while some gambling scales stand out internationally (Battaglia et al., 2024; Igo & Ehigie, 2021; Rousseau et al., 2002) no measurement tool capable of directly determining the levels of gambling enthusiasts has been found in Turkey. In addition, there are measurement tools developed and adapted for gambling that includes betting. One of these scales is the "Gambling Reasons Scale" adapted by Arcan and Karancı (2014), which utilizes various gambling scales to identify individuals' reasons for participating in gambling. Another scale is the "Gambling Disorder Screening Test," developed Evren et al. (2020), to identify gambling disorder. The last scale found in the

literature is the Gambling Craving Scale, developed by Young (2008) to reveal the level of desire to gamble and adapted to Turkish culture Buran et al. (2019). Therefore, the lack of a tool in Turkey that directly measures the passion for betting necessitates the examination of internationally developed scales in this field and the implementation of adaptation studies.

The aim of this study is to adapt the Gambling Addiction Scale developed Rousseau et al. (2002), which consists of two subscales (obsessive craving [5 items] and compliant craving [5 items]) and 10 items, to Turkish culture in order to address this gap identified in the literature.

*A. Conceptual Framework*

*A.I. Gambling*

Games that involve certain rules, where the combination of logic and chance offers the possibility of winning valuable items in exchange for a specific amount of money, are defined as gambling (Binde, 2005). Gambling consists of various types, such as card games, casino games, sports betting, and lotteries (Demirhan, 2024). Betting is a subcategory of gambling (Beech & Chadwick, 2007). Betting is defined as claims made by individuals who pay a certain amount based on their opinion, and contracts representing the amount they will receive if their claims are proven correct (Akev, 1964). Although the history of betting stretches back so far that it cannot be determined with certainty, it is known that betting was widespread in ancient Rome through chariot races or circus shows (Heemskerk, 2022). Today, it is played intensively in many countries (Delfabbro, 2012; Hing et al., 2014; Shaffer & Korn, 2002). Within the scope of betting, players participate most in sports betting (Valenciano-Mendoza et al., 2023). At this point, the sports and betting industries feed off each other in a mutually positive way (Koning & van Velzen, 2009; Mao et al., 2015).

*A.II. Sports Betting*

Sports betting is defined as games played with money or any other valuable consideration based on individuals' predictions regarding the outcome of sports competitions or sporting events (Etuk et al., 2022). Around the world, bets are placed on sports such as soccer, horse racing, volleyball, motor sports, combat sports, table tennis, handball, tennis, etc. (Buchdahl, 2003; Demirhan, 2024). The large number of people who gamble and the fact that some of them go to extremes can lead to negative consequences.

If negative consequences are observed in individuals based on their gambling behavior, this situation can eventually turn into a gambling disorder (American Psychiatric Association, 2013). The behavioral changes exhibited by individuals who gamble are shaped by their perception of society, cultural characteristics, geographical location, management approaches, religions, beliefs, and leisure time habits (Binde, 2005; Hing et al., 2014; Yaşar, 2011). In addition to these characteristics, the legal perspective of the countries where individuals live is also important in this regard. Therefore, the perspective of those governing the state encourages or discourages individuals' participation to a certain extent. In this context, betting is carried out through licensed venues or licensed websites provided by the state via mobile devices (Etuk, et. al., 2022).

While sports betting contains elements of entertainment for individuals, it also has the potential to create situations that could be disadvantageous, as mentioned above (Helfrich, 2025). Therefore, betting is approached in two ways by individuals. One is a positive attitude that supports individuals in reducing their stress levels and achieving relaxation as a result of providing entertainment and being seen as a recreational activity (Lee et al., 2014). The other is a negative attitude that drives individuals to outcomes such as depression, guilt, financial problems, and anxiety due to economic and social concerns (Abbott et al., 2018; Gökçe Yüce, 2020). Within the scope of gambling, betting addiction is considered as obsessive passion and adaptive passion, paralleling these attitudes.

Passion is defined as intense and powerful emotions directed toward doing or obtaining something (Akyüz, 2019). Passion is considered within itself as obsessive passion and adaptive passion (Vallerand, 2015). Adaptive passion provides motivation by awakening individuals to the awareness that they have free will, similar to the positive attitude toward sports betting. In addition, it refers to people drawing conclusions from the results of the work they do with passion and applying these conclusions to their lives (Vallerand, 2015). Obsessive passion, on the other hand, undermines individuals' willpower, similar to negative attitudes in sports betting. In this case, individuals have uncontrollable urges to act (Vallerand, 2015). In this respect, similarities are seen between obsessive passion and gambling problems (Ratelle et al., 2004; Rousseau et al., 2002; Vallerand & Guay, 2012). At this point, the individual's feeling of lack of control over their gambling behavior (Mageau et al., 2005), spending money, and participating uncontrollably in various types of gambling, perceiving themselves as a gambler (Rousseau et al., 2002), explains the connection between these two behaviors. Consequently, considering the concepts of betting and passion together creates two unique motivational structures (Morvannou et al., 2018).

*A.III. Addiction, Impulse, Risk-Taking, and Decision-Making*

Addiction is defined as an intense desire that is uncontrollable due to a person's attachment to a situation or object (Türk, 2024). Addiction is a chronic disease that is addressed in relation to cognitive processes such as motivation,

planning, organization, impulse, and evaluation, which are studied in the frontal lobe of the brain (Crews & Boettiger, 2009). Although addiction is a cognitively based action, it also has behavioral and psychological outcomes (Kranzler & Li, 2008). Therefore, such outcomes stemming from addiction are also observed in individuals who engage in sports betting.

Similarly, in sports betting, which is considered a branch of gambling, uncontrollable psychological and behavioral states emerge in terms of participation, frequency, and duration. This situation is considered addiction in sports betting (Gökçe Yüce, 2020). Sports betting addiction is classified as a non-substance-related addiction and is seen as a type of gambling disorder. Such addictions lead to certain negative consequences in individuals' lives. Individuals may resort to problematic and legally criminal behaviors, such as fraud, in order to compensate for financial losses or to pay off betting debts (American Psychiatric Association, 2022; Ayala-Rojas et al., 2025). In addition, they experience physical and psychological problems and unrest within the family. As a result of this situation, social problems arise (Türk, 2024). Today, with the increasing diversity and digitization of the betting field, the emergence of online betting opportunities, the ease of access to many betting platforms, and the increase in betting advertisements, an increase has been observed in individuals' participation in betting and in betting addiction among those who participate (Ayala-Rojas et al., 2025; McGee, 2020; Newall et al., 2019).

There are strong risk factors for addiction. One of these factors is impulse (Gullo et al., 2023). At this point, impulse is defined as exhibiting behavior in response to internal or external stimuli despite negative consequences (Gullo et al., 2023). Impulsive disorders are described as the pleasure and satisfaction derived from high tension before carrying out an event (Koob & Volkow, 2010). These behaviors often involve unnecessary risky or inappropriate behaviors and usually lead to undesirable outcomes. Therefore, one of the reasons for the emergence of addiction is impulsivity resulting from difficulties in executive function, namely increased losses in the frontal lobe (Crews & Boettiger, 2009). Individuals with addiction resulting from impulses are prone to taking risks.

Risk-taking can be defined as behaving in uncertain situations without specific plans (Balogh et al., 2013). People generally begin to take risks during adolescence. The formation of these behaviors is influenced by many factors, such as family, peers, genetics, and environment (Casey et al., 2008). Furthermore, individuals' risk-taking situations and decision-making processes can also influence each other (Rutherford et al., 2010). Therefore, risk-taking and decision-making are two important concepts that support each other and share common characteristics (Balogh et al., 2013).

Decision-making is defined as individuals focusing their attention and making choices by designing possible outcomes (Congdon & Canli, 2008). Individuals usually act on their impulses when making decisions. In other words, impulses significantly influence the decision-making process (Balogh et al., 2013). Deficiencies arising from decision-making directly affect an individual's risk-taking tendencies and levels of addiction (Schutter et al., 2011). Consequently, concepts such as impulse, decision-making, risk-taking, and addiction have a major impact on individuals' gambling habits. In addition, the passion for gambling also has social and economic consequences at the societal level.

*A.IV. The Social and Economic Dimension of Gambling Addiction*

It is known that participation in gambling games has both positive and negative effects (Lee et al., 2014). In addition to gambling having positive and negative consequences on an individual level, it also appears to have positive and negative consequences on a societal level. To illustrate this point, betting games within the scope of gambling provide financial resources to the state, licensed companies working with the state, sporting events, and sports clubs. The fact that European countries, including Turkey, have legalized certain sports betting based on public policy exemplifies this (Vidal-Puga, 2017). One reason for this legalization process is to generate financial resources for the state through taxation by preventing illegal betting (Türk, 2024; Vidal-Puga, 2017). Legalization provides advantages such as increasing industry revenues, preventing illegal sports betting, increasing state tax revenues, and creating resources for public investments (Gökçe Yüce, 2020). The fact that online betting sites in the US reached over 25 million active users in 2023, generating approximately $11 billion in revenue, and that state governments earned over $1.8 billion in tax revenues as a result, can be cited as an economic consequence of this situation (Helfrich, 2025). Another example of the economic impact is the $23.1 billion wagered on the Super Bowl final game, which is a significant example demonstrating the financial power of betting (Türk, 2024).

Although betting games have some positive outcomes, primarily economic, it is also known that these games have negative consequences for players, such as depression and lack of self-regulation (Clarke, 2006; Drakeford & Hudson-Smith, 2015). Furthermore, an obsessive passion for betting leads to negative individual and social consequences, such as family problems, loss of time, sleep problems, repetitive betting habits in an attempt to recoup losses, and the financial damage caused to the individual by the money lost on betting (Momodu, 2014).

## II. METHOD

This study was conducted to adapt a valid and reliable measurement tool for examining betting enthusiasts to Turkish culture. The research was designed using quantitative research methods through a survey model. The study followed the five-step research model recommended in the literature for measurement tool adaptation studies (step one: translation

of the target scale into the target language; step two: back-translation; step three: expert review of the scale; step four: pilot application; step five: testing the validity and reliability of the scale) (DeVellis, 2014; Karagöz, 2021).

In line with this, the measurement tool to be adapted was first translated into Turkish (by three subject matter experts). Second, the measurement tool was back-translated into its original language, English (by three subject matter experts). Third, expert opinions related to the field of the measurement tool (experts with doctoral degrees in the fields of betting studies, measurement-evaluation, and sports science) were obtained. Fourth, data was collected from participants fluent in both Turkish and English for the pilot study of the measurement tool (pilot application). Fifth, the validity (exploratory factor analysis, content validity, construct validity; confirmatory factor analysis, AVE (Average Variance Extracted), MSV (Maximum Shared Variance), and ASV (Average Shared Variance) and reliability (Cronbach's alpha, Stratified alpha, Omega, and CR (Composite Reliability)) of the measurement tool were tested.

*A. Study Group*

The study group for this research was determined using simple random sampling and criteria-based sampling, which are non-probability sampling methods. The criterion for inclusion in the study population was that participants gambled. Since two different analyses were performed in the study to ensure construct validity through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), data were collected from different groups in each analysis. Information about the participants is presented in Table 1. The sample size of the study was determined by considering 10-15 times the number of variables (items) specified in the literature for factor analyses (Çokluk et al., 2012; Field, 2009). In addition, the Kaiser Meyer Olkin (KMO) test, which examines the sample adequacy for factor analysis of the structure created by the variables, one of the AFA assumptions, was also taken into account (Gürbüz & Şahin, 2018). The criterion stated by Gürbüz (2019) in DFA and YEM studies, namely that the sample size should be n>150 and the number of items should be at least 10 times the sample size, was also considered for DFA.

Table 1. Demographic Information About Participants

| Demographic Variable | Technical | Subgroup Frequency Percentage | Subgroup Frequency Percentage | Subgroup Frequency Percentage |
|---|---|---|---|---|
| Age | EFA | 18 – 35 | 166 ($\bar{x}$=21.82) | 100.0 |
| | CFA | 18 – 35 | 178 ($\bar{x}$=24.65) | 100.0 |
| Gender | EFA | Female | 40 | 24.1 |
| | | Male | 126 | 75.9 |
| | EFA | Female | 48 | 27.0 |
| | | Male | 130 | 73.0 |
| Frequency betting | EFA | Rarely | 41 | 24.7 |
| | EFA | Occasionally | 104 | 62.7 |
| | | Frequently | 21 | 12.7 |
| | CFA | Rarely | 56 | 31.5 |
| | EFA | Occasionally | 97 | 54.5 |
| | | Frequently | 25 | 14.0 |
| Obsessive passion | EFA | 1 - 5 | 166 ($\bar{x}$=1.88) | 100.0 |
| | CFA | 1 - 5 | 166 ($\bar{x}$=1.74) | 100.0 |
| Harmonious passion | EFA | 1 - 5 | 166 ($\bar{x}$=2.86) | 100.0 |
| | CFA | 1 - 5 | 166 ($\bar{x}$=2.13) | 100.0 |
| Gambling Passion Scale | EFA | 1 - 5 | 166 ($\bar{x}$=2.37) | 100.0 |
| | CFA | 1 - 5 | 166 ($\bar{x}$=1.94) | 100.0 |

Note: EFA=Exploratory Factor Analysis, CFA=Confirmatory Factor Analysis, $\bar{x}$ = Mean

*B. Measurements*

The data collection tool for this study consists of two sections. In the first section, a Personal Information Form was used, which included participants' age, gender, and frequency of gambling. The second section used the Gambling Passion Scale developed Rousseau et al. (2002), adapted to Turkish culture, consisting of two factors: Obsessive Passion (5 items) and Harmonious Passion (5 items). Analyses such as AFA, DFA, Correlation, and Cronbach Alpha ($\alpha$=0.76-0.96) were used in the development of the scale. The analyses confirmed the validity and reliability of the measurement tool. The Obsessive Passion factor includes statements such as “My feelings towards gambling are almost obsessive” and “The urge inside me is so strong that I cannot stop myself from gambling.” The Harmonious Passion factor includes statements such as “Gambling is Harmonious with my lifestyle” and “The new things I discover while gambling increase my interest in it even more.”

*C. Data Collection Process*

In the data collection process of the study, permission to adapt the scale to Turkish culture was first obtained from the responsible author in the research group that developed the scale. Subsequently, an Ethics Compliance Report was obtained from the Human Research Ethics Committee of Bolu Abant İzzet Baysal University in the Social Sciences in order to carry out the study (Protocol NO: 2025/447). After the ethics committee approval, the questionnaire used in the study was distributed to participants in printed form and via Google Forms, and the data was collected.

## III. FINDINGS

The data obtained were analyzed using the SPSS 27 software package, and the loss and outlier values specified in the literature (Field, 2009; Gürbüz, 2019; Karagöz, 2021), testing for normal distribution, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and testing the assumptions of these analyses were performed. In this context, descriptive statistics and Z scores for the variables were calculated to identify missing and outlier values (Tabachnick et al., 2007). No missing values were found in the data. The value of ±3.29 (Field, 2009) mentioned in the literature was taken as the criterion in the Z-score examination. After the evaluation, 14 data points obtained for EFA and 22 data points obtained for CFA were excluded from the data set because they were outside the criterion value range. To examine the normal distribution, the values were calculated by dividing the kurtosis and skewness values by their standard errors. When the values related to the data were examined, it was determined that the relevant values (-1.104 - 1.511) were within the ±2.58 (Field, 2009) value range specified in the literature. To test for multicollinearity, the determinant coefficient, the Kaiser Meyer Olkin (KMO) test to examine sample adequacy, and the counter-image correlation matrix (Tabachnick et al., 2007) were used. Bartlett's Sphericity test for inter-item correlation and multiple normality testing, Communalities values to determine the contribution of items to common variance (Gürbüz & Şahin, 2018), and the Reproduced Correlation table, which examines the difference between actual correlations and correlations related to the model, to assess suitability for principal component analysis (Can, 2022). Since there was a relationship between the factors in the previously developed scale, direct oblimin was selected as the oblique rotation method (Field, 2009). At the factorization stage, the scree plot graph and eigen value (Çokluk et al., 2012), factor loadings for the items (Can, 2022), total explained variance, and corrected item-total correlations were examined (Field, 2009). To test reliability, Cronbach's Alpha internal consistency coefficients were calculated for both AFA and DFA for total scores and factors. Additionally, since the literature suggests using Omega tests for reliability analysis in multidimensional scales, these values were also examined (Cho & Kim, 2014).

DFA was used to re-test the validity of the structure in different sample groups. For this analysis, AMOS 23.0 software was used to perform DFA with the maximum likelihood estimation procedure, given the normal distribution of the data, sufficient sample size, and the Likert-type scale (Can, 2022; Karagöz, 2021). First-order analysis was performed using DFA. In this model, each item loaded only onto its own subfactor. Upon observing high correlations between the subdimensions, second-order DFA was performed to test whether the factors represented a common higher-order structure (Gürbüz, 2019). The fit indices frequently used in the literature (Can, 2022; Çokluk et al., 2012; Hu & Bentler, 1999) were used to evaluate the structure based on the DFA results: Chi-square ($\chi^2$) and Chi-square/degrees of freedom ($\chi^2$/df < 3), Comparative Fit Index (CFI > 0.90 - 0.95), Standardized Root Mean Square Residual (SRMR < 0.05 - 0.08), and Root Mean Square Error of Approximation (RMSEA < 0.05 - 0.08). To assess the fit between the theoretical structure of the scale and the measurement model and to test the psychometric validity and reliability of the scale items, convergent validity and discriminant validity analyses were performed within the scope of construct validity after DFA. In this context, CR (Construct Reliability), AVE (Average Variance Extracted), MSV (Maximum Shared Variance), and ASV (Average Shared Variance) values were calculated. Additionally, as in AFA, Cronbach's alpha internal consistency coefficient and Omega coefficients were calculated for reliability.

Table 2. Descriptive Statistics and Exploratory Factor Analysis Results

| Item | x̄ | Sd | Corrected Item Total Correlation | Factor Loading | | α |
|---|---|---|---|---|---|---|
| 1 | 1.87 | 1.00 | 0.647 | 0.73 | | |
| 2 | 1.98 | 1.02 | 0.664 | 0.74 | | α=0.85 |
| 3 | 1.93 | 0.98 | 0.535 | 0.62 | 1 | |
| 4 | 1.79 | 0.98 | 0.704 | 0.78 | | |
| 5 | 1.81 | 1.04 | 0.712 | 0.79 | | |
| 6 | 2.99 | 1.30 | 0.676 | 0.74 | | |
| 7 | 2.63 | 1.20 | 0.700 | 0.76 | | |
| 8 | 2.84 | 1.23 | 0.715 | 0.78 | | α=0.85 |
| 9 | 3.27 | 1.02 | 0.536 | 0.60 | 0 | |
| 10 | 2.55 | 1.19 | 0.684 | 0.75 | | |
| KMO: 0.92 | | | | | | |
| Bartlett's Test of Sphericity: (χ2=801.495; Sd=45; p<0.001 | | | | | | |
| Eigenvalue: 1.160 | | | | | | |
| Explained Variance: 63.906 | | | | | | |
| α: 0.902 | | | | | | |
| Omega (Ω ω): 0.904 | | | | | | |

Note: x̄ = Mean, Ss= Standard deviation, KMO= Kaiser-Meyer-Olkin, α=Cronbach Alpha Coefficient, Ω ω= Omega

Table 2 shows that the means for the items ranged from 1.81 to 3.27, the KMO value calculated for sample adequacy was 0.92, the Bartlett Sphericity test results for inter-item correlation and multiple normality testing were χ2=801.495; df=45; p<0.01, The eigen value used at the factorization point is 1.160, the total explained variance is 63.906%, the corrected item-total correlation values range between 0.54 and 0.72, and the Cronbach Alpha internal consistency coefficients range between 0.850 and 0.851. In addition, it was determined that the Omega test, which is recommended in the literature as an analysis for reliability in multidimensional scales, was 0.904.

Based on the relevant literature, which suggests that structures emerging from Exploratory Factor Analysis should be validated using Confirmatory Factor Analysis (CFA) on a different data set obtained from a similar participant group (Gürbüz, 2019; Karagöz, 2021), CFA was performed. In this context, the structure was analyzed both at the second-order multidimensional level and at the first-order multidimensional level (Table 3, Figure 1, Figure 2).

Table 3. Confirmatory Factor Analysis Goodness of Fit Indices

| Gambling Passion Scale | Madde Sayısı | $\chi^2$ | sd | p | $\chi^2$/sd | RMSEA | CFI | SRMR |
|---|---|---|---|---|---|---|---|---|
| **First-Level Multifactor Model** | 10 | 59.946 | 34 | 0.004 | 1.76 | 0.066 | 0.981 | 0.292 |
| **Second-Level Model** | 10 | 59.946 | 34 | 0.004 | 1.76 | 0.066 | 0.981 | 0.292 |

Note: $\chi^2$= Chi-square, $\chi^2$/sd= chi-square /degress of freedom, p= significance value, CFI= comparative fit index, SRMR= the standardized root mean square residual, RMSEA= the root mean square error of approximation

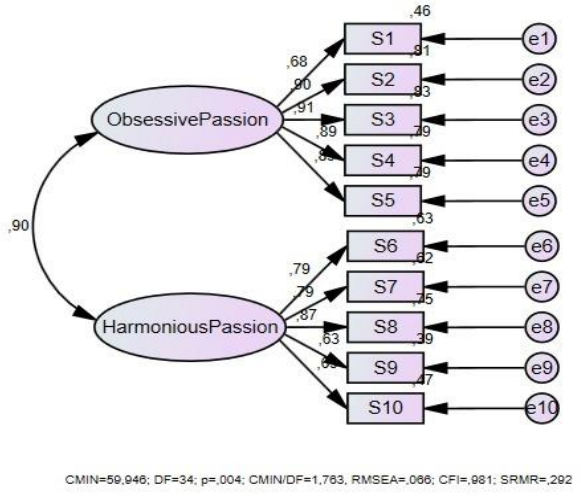


Figure 1. First-Level Multifactor Model

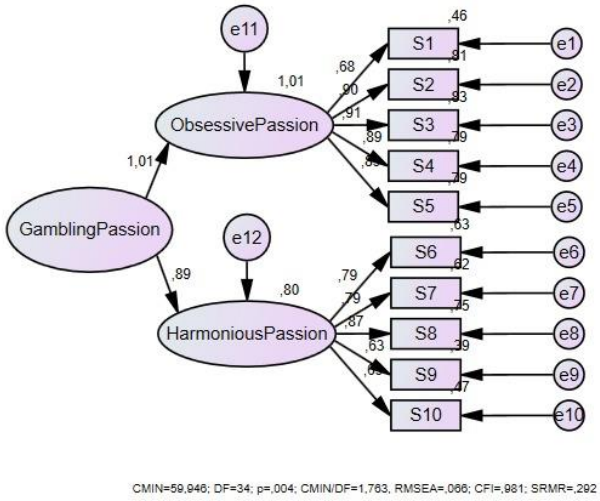


Figure 2. Second-Level Model

When examining the fit index values for both models in Table 3, Figure 1, and Figure 2, the chi-square ($\chi^2$) value is 59.946, the degrees of freedom are 34, the significance value is 0.004, Chi-square/degrees of freedom is 1.76, RMSEA is 0.066, CFI is 0.981, and SRMR is 0.292. Other analysis results related to model validation are also presented in Table 4. Factor Loading, t Value, R2, Corrected Item Total Correlation

Table 4. Analysis Results for Model Validation; Gambling Passion Scale

| Factor | M | Factor Loading | t Value | $R^2$ | Corrected Item Total Correlation | α | Ω ω |
|---|---|---|---|---|---|---|---|
| **Obsessive Passion** | 1 | 0.68 | 10.967 | 0.47 | 0.641 | 0.93 | 0,94 |
| | 2 | 0.90 | 10.967 | 0.39 | 0.858 | | |
| | 3 | 0.91 | 11.04 | 0.75 | 0.835 | | |
| | 4 | 0.88 | 10.83 | 0.62 | 0.822 | | |
| | 5 | 0.89 | 10.85 | 0.63 | 0.853 | | |
| **Harmonious Passion** | 6 | 0.79 | 11.49 | 0.79 | 0.758 | 0.87 | |
| | 7 | 0.79 | 11.49 | 0.79 | 0.742 | | |
| | 8 | 0.87 | 12.98 | 0.82 | 0.807 | | |
| | 9 | 0.63 | 8.66 | 0.81 | 0.570 | | |
| | 10 | 0.69 | 9.65 | 0.46 | 0.653 | | |

Note: M= Item, R2=Multiple Regression Square, α=Cronbach Alpha Coefficient, Ω ω= Omega

Table 4 shows that the factor loadings for the items range from 0.63 to 0.90 (>0.50), the t-values range from 8.66 to 12.98 (>1.96), R2 (square of multiple correlation) values between 0.39 and 0.82, and adjusted item-total correlation values between 0.57 and 0.85 (>0.30). To test the reliability of the structure, the Cronbach Alpha internal consistency coefficient was found to range between 0.82 and 0.93, and the Omega value was found to be 0.94.

To evaluate the fit between the theoretical structure of the scale and the measurement model and to test the psychometric validity and reliability of the scale items, convergent validity and discriminant validity analyses were performed within the scope of construct validity after DFA. In this context, CR (Construct Reliability), AVE (Average

Variance Extracted), MSV (Maximum Shared Variance), and ASV (Average Shared Variance) values were calculated (Table 5).

Table 5. Analysis Results Regarding the Model's Structural Reliability, Convergent and Discriminant Validity

| **Gambling Passion Scale** | CR | AVE | MSV | ASV |
|---|---|---|---|---|
| **Obsessive passion dimension** | 0,93 | 0,73 | 0,56 | 0,56 |
| **Harmonious passion** | 0,87 | 0,58 | | |

Note: CR= Construct Reliability, AVE= Average Variance Extracted, MSV= Maximum Shared Variance, ASV= Average Shared Variance

Table 5 shows that the CR value for the scale was calculated as 0.93 for the obsessive passion dimension and 0.87 for the harmonious passion dimension, indicating high reliability (>0.70). The AVE value calculated for convergent validity was 0.73 for the obsessive passion dimension and 0.58 for the adaptive passion dimension (>0.50), providing convergent validity. For discriminant validity, the square of the inter-factor correlation values was determined to be 0.56. The ASV values calculated using the average correlation between dimensions were also naturally determined to be 0.56.

Finally, as another method used within the scope of the model's validity, a convergent validity test was performed. In this regard, the relationship between the factors forming the model was examined (Table 6).

Table 6. Gambling Passion Scale Factor Relationship Analysis

| **Factor** | | **Harmonious Passion** |
|---|---|---|
| **Obsessive Passion** | r | 0.75 |
| Note: **=p<0.01, r= Correlation, n=178 | | |

(p<0.01).

## IV. DISCUSSION AND CONCLUSION

In this study, which aimed to adapt the gambling addiction scale developed by Rousseau et al. (2002), to Turkish culture for individuals participating in gambling games, a series of analyses were conducted to test the psychometric properties of the scale. The findings obtained as a result of these analyses are evaluated in the context of the literature below.

In testing the assumptions of factor analyses to be used in data analysis, the determinant coefficient was examined to test for multicollinearity. The analysis calculated the determinant coefficient as 0.007, which is greater than the value of 0.00001 stated in the literature (Karagöz, 2021). The Kaiser Meyer Olkin (KMO) test and the counter-image correlation matrix were used to test the adequacy of the sample. The KMO value for the data was found to be 0.92, which is higher than the value of 0.70 stated in the literature (Tabachnick et al., 2007). Bartlett's Sphericity test was performed for inter-item correlation and multiple normality testing. ($\chi$2=801.495; df=45; p<0.01) It was determined that these values met the criterion values (p<0.05) specified in the literature. Communalities values were examined to determine the contribution of items to common variance and were found to range between 0.55 and 0.73. This value was found to be above the lower value of 0.20 specified in the literature (Gürbüz & Şahin, 2018). Finally, to assess the suitability for principal component analysis, the Reproduced Correlation table, which examines the difference between the actual correlations and the correlations related to the model, was examined (22%), and it was determined that this difference was less than 50% (Tabachnick et al., 2007), and AFA was performed. In the first rotation, it was determined that the factor loadings for the items (0.53 to 0.92) were greater than 0.50 (Can, 2022). In addition, the structure eigenvalue (1.16>1) emerged as greater than 1 with two factors. The total explained variance (63.906%) is greater than the 50% value found in the literature (Çokluk et al., 2012; Field, 2009; Gürbüz, 2019; Karagöz, 2021). To test the reliability of the scale items, the adjusted item-total correlations were examined (Tabachnick et al., 2007) and found to range between 0.54 and 0.72, which is above the criterion value of 0.30 (Field, 2009). To test the reliability of the emerging structure, Cronbach Alpha internal consistency coefficients were found to range between 0.85 and 0.90. The Omega reliability coefficient was calculated as 0.876. As a result, the structure was found to demonstrate sufficient reliability (>0.70). The structure discovered after AFA was retested with DFA. When examining the fit index values considered in the evaluation of the structure, Chi-square ($\chi^2$) and Chi-square/degrees of freedom ($\chi^2$/df < 3), Comparative Fit Index (CFI > 0.90 - 0.95), Root Mean Square Residual (SRMR < 0.05 - 0.08), and Root Mean Square Error of Approximation (RMSEA < 0.05 - 0.08) values were found to be within the threshold values specified in the literature (Gürbüz, 2019; Karagöz, 2021). To evaluate the fit between the theoretical structure of the scale and the measurement model and to test the psychometric validity and reliability of the scale items, the CR, AVE, MSV, and ASV values calculated after DFA were found to meet the criteria specified in the literature: CR>0.70, AVE>0.50, CR>AVE, AVE>MSV, and ASV criteria specified in the literature, thus confirming the scale's construct reliability and convergent and discriminant validity (Hair et al., 2010).

In conclusion, the findings of this study demonstrate that the Turkish version of the Gambling Passion Scale is a valid and reliable measurement tool. The factor structure, reliability coefficients, and validity indicators allow gambling passion to be assessed as a multidimensional construct.

One of the main contributions of this study is the demonstration that gambling passion can be measured in a psychometrically valid and reliable manner within the Turkish cultural context. In Turkey, gambling behavior is not merely an individual tendency, but a phenomenon shaped by sociocultural norms, economic expectations and emotional regulation processes. Therefore, the adaptation of culturally sensitive measurement tools represents a critical need in literature.

The identified factor structure reflects psychological processes related to self-control and impulsivity, suggesting that gambling passion in the Turkish sample is predominantly experienced through internal regulation and behavioral control mechanisms. This finding indicates that risk-taking behaviors within this cultural context may be closely associated with emotional coping strategies and perceptions of personal responsibility. In this respect, the Gambling Passion Scale provides a valuable measurement framework not only for descriptive research but also for preventive and intervention-oriented studies focusing on sports betting and online gambling behaviors. Establishing the cultural validity of the scale contributes to grounding gambling-related policies, educational initiatives, and psychosocial interventions in empirical evidence.

Several limitations should be considered when interpreting the findings of this study. First, due to the cross-sectional design, causal inferences cannot be drawn. Longitudinal studies are needed to examine changes in gambling passion over time and to explore potential cause–effect relationships. Second, the sample was limited to a specific participant group. Future research should test the scale across different age groups, socioeconomic backgrounds, and clinical populations to enhance its generalizability. In particular, studies involving individuals diagnosed with pathological gambling may provide deeper insights into the discriminative power of the scale.

Finally, future studies are encouraged to investigate the relationships between the Gambling Passion Scale and variables such as impulsivity, self-control, coping with stress, and psychological well-being. Such research would contribute to a more comprehensive understanding of the psychological foundations of gambling passion.

## DECLARATIONS

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