


ONLINE SPORTS BETTING ATTITUDE SCALE

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Abstract

The widespread adoption of online sports betting applications as a result of digitalization has necessitated the scientific assessment of attitudes toward this phenomenon. Accordingly, the aim of this study was to develop a valid and reliable scale to measure attitudes toward online sports betting. The study was conducted using a survey research design. The sample consisted of 159 participants for the Exploratory Factor Analysis (EFA) and 300 participants for the Confirmatory Factor Analysis (CFA). The mean age of the participants was 22.32 years (SD = 3.51). The EFA results revealed a two-factor structure consisting of “Risk Perception” and “Behavioral Acceptance,” explaining 64.51% of the total variance. CFA results indicated that the final model demonstrated good model fit indices ($\chi^2/df = 2.706$; RMSEA = .076; CFI = .976; GFI = .962). Factor loadings of the items in the final model ranged between .809 and .930. Reliability analyses demonstrated high internal consistency for the Risk Perception subscale ($\alpha = .905$), Behavioral Acceptance subscale ($\alpha = .854$), and the overall scale ($\alpha = .958$). The Average Variance Extracted and Composite Reliability values supported the convergent validity and construct reliability of the scale. To assess criterion validity, an independent samples t-test revealed that participants who had previously engaged in online betting reported significantly higher scores in Behavioral Acceptance and total scale scores compared to those who had not engaged in online betting ($p < .01$). In conclusion, the Online Sports Betting Attitude Scale, consisting of eight items and a two-factor structure, was found to be a valid and reliable psychometric instrument that can be used to assess attitudes toward online betting.

Keywords: Betting, online betting, sports betting, gambling.

INTRODUCTION

With the widespread adoption of digital technologies, gambling and betting behaviors have undergone a significant transformation. In particular, online betting applications offered through online platforms have become a prevalent behavioral pattern due to their continuous accessibility and low barriers to participation (Kiyak et al., 2024; Lakew et al., 2024; Saefullah & Vaidyanatahan, 2025; Saran, 2024). One of the defining characteristics that distinguishes online betting from other forms of gambling is its reliance on sports competitions (Lopez-Gonzalez et al., 2019). This feature contributes to the perception of betting not merely as a chance-based activity but as one grounded in knowledge, analysis, and prediction (Cantinotti et al., 2004; Mercier et al., 2018). Such perceptions may serve as important cognitive and social factors that facilitate the normalization and legitimization of online sports betting behavior.

In studies examining gambling and betting behaviors, attitudes toward these activities have been identified as a central variable (Ayandele et al., 2020; Hellumbråten Kristensen et al., 2023). Attitude is defined as a relatively stable psychological construct encompassing an individual's cognitive evaluations, emotional responses, and behavioral tendencies toward a particular object or behavior (Ajzen, 1991). Within this framework, attitudes toward online sports betting represent a key determinant reflecting the extent to which individuals perceive this behavior as acceptable, attractive, controllable, or problematic. Existing research indicates that more favorable and permissive attitudes toward gambling and betting are significantly associated with higher participation frequency and an increased likelihood of problematic betting behavior (Hellumbråten Kristensen et al., 2023; Rahman et al., 2014; Tabri et al., 2022). In the context of online sports betting, the assessment of attitudes requires a more specific approach that distinguishes it from general gambling attitudes.

Sports betting is often framed as an activity in which outcomes can be predicted based on an individual's sports knowledge and analytical abilities (Khazaal et al., 2012; Towfigh & Glöckner, 2011). This perception is commonly explained in the literature through the concepts of the illusion of skill and perceived control (Clark & Wohl, 2021; Monson et al., 2024; Strickland et al., 2006). Individuals' beliefs that their knowledge and experience can influence betting outcomes may reduce perceived risk and lead to the interpretation of betting as a more rational, controlled, and legitimate activity (Czupryna et al., 2018; Khazaal et al., 2012; Myrseth et al., 2010). In this regard, attitudes toward online sports betting should be examined not only in terms of general positive or negative evaluations but also in relation to behavioral acceptance and the tendency to engage in and sustain betting behavior.

A review of the existing measurement instruments reveals that various scales have been developed to assess gambling-related constructs such as gambling cognitions (Arcan & Karanci, 2015), harm (Aka & Erdem, 2024), risk (Tekin et al., 2020), motives for gambling (Arcan & Karanci, 2014), craving (Buran et al., 2019), and gambling addiction (Karaibrahimoğlu et al., 2021). However, to the best of our knowledge and based on the reviewed literature, there appears to be no measurement instrument that directly assesses attitudes specifically toward online sports betting. Therefore, the aim of the present study was to develop a valid and reliable measurement instrument capable of assessing individuals' attitudes toward online sports betting within the context of sport sciences and behavioral research.

METHOD

Research Design

This study was conducted using a survey research design and followed a multi-stage scale development process in accordance with established methodological guidelines (Boateng et al., 2018). In the initial stage, a comprehensive review of the relevant literature was performed to identify the theoretical dimensions underlying attitudes toward online sports betting. Based on this review, an extensive item pool was generated to represent the construct domain

adequately. The drafted items were subsequently evaluated by field experts to assess their content relevance, clarity, and representativeness. In the second stage, the revised draft scale, refined according to expert feedback, was administered to a pilot sample. Participant feedback obtained during the pilot implementation was used to identify potential ambiguities and improve item clarity, resulting in necessary revisions to the scale items. In the third stage, the revised scale form was administered to a larger sample to collect data for psychometric analyses. In the fourth stage, Exploratory Factor Analysis (EFA) was conducted to examine the construct validity and underlying factor structure of the scale. Following the identification of the factor structure, Confirmatory Factor Analysis (CFA) was performed using an independent dataset to test the adequacy and stability of the proposed model. In the final stage, the reliability of the scale was assessed using internal consistency coefficients. Based on the results of all analyses, final revisions were made to the items, the scoring procedure was established, and the scale was finalized as a psychometrically sound instrument for measuring attitudes toward online betting. Ethical approval for this study was obtained from the Scientific Research and Publication Ethics Committee of İnönü University, Social and Human Sciences Scientific Research and Publication Ethics Committee (Session Date: 29.01.2026; Session No: 2; Decision No: 19). All procedures were conducted in accordance with ethical principles. Participants' rights were protected, voluntary participation was ensured, and the collected data were used solely for scientific research purposes.

Item Pool Development and Scale Format

The Online Sports Betting Attitude Scale (OSBAS) developed in this study was structured based on systematic approaches widely accepted in scale development research. In the initial stage, a comprehensive review of the literature was conducted to establish the conceptual framework of individual attitudes toward online sports betting. Based on the theoretical foundations identified in the literature, an initial item pool consisting of 16 items was generated to capture the multidimensional nature of attitudes toward online betting. All items included in the scale were evaluated using a five-point Likert-type response format ranging from “strongly disagree” (1) to “strongly agree” (5). This format was selected to allow for the assessment of varying degrees of agreement and to enhance the sensitivity of the measurement tool.

Content Validity

To ensure content validity, the initial pool of 16 items was evaluated based on the established theoretical framework underlying attitudes toward online betting. Expert opinions were obtained from a total of 6 specialists, including experts in sociology, psychology, sport sciences, and behavioral sciences, as well as two experts in measurement and evaluation. Based on expert feedback, items that contained ambiguity, insufficiently represented the intended construct, or overlapped conceptually with other items were carefully reviewed and revised. Following this evaluation process, necessary modifications were made, and the total number of items was reduced from 16 to 13, resulting in an improved draft version of the scale with enhanced content relevance and clarity.

Pilot Study

A pilot study was conducted to assess the clarity, internal consistency, and overall functionality of the draft scale. The pilot application was administered to a sample of 30 participants aged 18 years and older, selected to reflect a range of attitudes and perceptions toward online sports betting. Feedback obtained during the pilot phase was used to improve the linguistic clarity and comprehensibility of the items. Specifically, wording adjustments, simplifications, and refinements were implemented where necessary to ensure that the items were clearly understood by respondents. Following these revisions, the scale was finalized for administration to a larger sample for psychometric evaluation.

Participants

The participant group was determined using a convenience sampling method, considering the recommended sample size criteria for both EFA and CFA. In line with widely accepted guidelines in scale development research, the sample size was established to include at least ten participants per scale item (Nevitt & Hancock, 2004). This approach ensured an adequate sample size to support robust factor analytic procedures and enhance the psychometric stability of the scale. Descriptive statistics related to participants' ages indicated that the age range varied between 18 and 42 years. The mean age of the sample was calculated as 22.32 years (SD = 3.51), reflecting a predominantly young adult population. This demographic profile is particularly relevant in the context of sport sciences research, as younger populations represent a group with higher exposure to digital technologies and online sports-related activities, including online betting. The detailed characteristics of the participant group are presented in Table 1.

Table 1. Characteristics of the Participant Group

Group	Variable	f		
EFA Group	Gender	Female	69	
		Male	90	
	Education	High school or lower	9	
		University degree	143	
		Postgraduate	7	
	Monthly Income (TL)	0 – 22.104 TL	113	
		22.105 – 44.208 TL	22	
		44.209 – 66.312 TL	10	
		66.313 – 88.416 TL	11	
		88.417 TL and above	3	
		Total	159	
	CFA Group	Gender	Female	111
			Male	189
Education		High school or lower	14	
		University degree	273	
		Postgraduate	13	
Monthly Income (TL)		0 – 22.104 TL	216	
		22.105 – 44.208 TL	42	
		44.209 – 66.312 TL	24	
		66.313 – 88.416 TL	12	
		88.417 TL and above	6	
		Total	300	

*TL= Turkish Lira

Validity and Reliability Analyses

Descriptive statistics, including arithmetic mean, standard deviation, frequency, and percentage values, were used to analyze the data obtained within the scope of this study. To examine the validity and reliability of the developed OSBAS, both EFA and CFA were conducted. EFA and internal consistency analyses were performed using IBM SPSS Statistics 26.0 software, while CFA was conducted using AMOS 24.0. Prior to conducting factor analysis, the suitability of the dataset was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett’s Test of Sphericity. A KMO value greater than 0.50 and a statistically significant Bartlett’s test result ($p < .05$) were considered indicators that the data were appropriate for factor analysis. EFA was conducted using the principal components analysis method, and the Varimax rotation technique was applied to achieve a clearer and more interpretable factor structure. Factors with eigenvalues greater than 1.00 were retained, and the scree plot was examined to determine the appropriate number of factors. Only items with factor loadings of .50 or higher were included in the final factor structure. In the CFA, multiple model fit indices were evaluated to assess the adequacy of the proposed factor structure. These indices included the chi-square to degrees of freedom ratio (χ^2/df), Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Root Mean Square Residual (RMR), Root Mean Square Error of Approximation (RMSEA), and Expected Cross-Validation Index (ECVI). Model fit was considered acceptable when χ^2/df was below 3.00, CFI, GFI, and AGFI values were .90 or higher, RMR and RMSEA values were below .08, and ECVI values were relatively lower (Hair et al., 2010; Kline, 2023). The reliability of the scale was assessed by calculating Cronbach’s alpha coefficients for each subdimension and for the overall scale. Alpha coefficients of .70 or higher were considered indicative of adequate internal consistency. In addition, Composite Reliability (CR) and Average Variance Extracted (AVE) values were calculated to further support the construct reliability and convergent validity of the scale (Fornell & Larcker, 1981). Based on these comprehensive statistical analyses, the validity and reliability of the OSBAS were evaluated using multiple psychometric criteria to determine its suitability as a measurement instrument in sport sciences and behavioral research contexts.

RESULTS

The findings obtained from the analyses conducted in this study are presented in this section. Descriptive statistics and results of the factor analyses, along with reliability findings, are reported to evaluate the psychometric properties of the scale.

Exploratory Factor Analysis Results

Prior to conducting the EFA to examine the construct validity of the scale, the suitability of the data for factor analysis was assessed using the KMO measure of sampling adequacy and Bartlett’s Test of Sphericity. The KMO value was found to be 0.835, indicating a high level of sampling adequacy and confirming that the dataset was appropriate for factor analysis. Furthermore, Bartlett’s Test of Sphericity yielded a statistically significant result ($\chi^2 = 1354.578$; $df = 78$; $p < .001$), demonstrating that the correlation matrix was not an identity matrix and supporting the factorability of the data. EFA was conducted using Principal Component Analysis as the extraction method. In determining the number of factors to retain, the eigenvalue-greater-than-one criterion was applied in accordance with established methodological standards (Büyüköztürk, 2010), and the total variance explained was examined. The analysis revealed a two-factor structure. The first factor had an eigenvalue of 4.632 and accounted for 35.63% of the total variance, while the second factor had an eigenvalue of 3.755 and explained an additional 28.88% of the variance. Collectively, these two factors explained 64.51% of the total variance, which is considered acceptable and adequate for behavioral and sport sciences research (Field, 2013). The rotated factor solution produced a clear and theoretically meaningful structure,

providing strong support for the construct validity of the scale. To further verify the number of factors, the scree plot was examined. The graphical distribution of eigenvalues revealed a distinct inflection point after the second factor, confirming that the scale is best represented by a two-factor structure. This finding supports the conceptualization of the OSBAS as consisting of two underlying dimensions, as illustrated in Figure 1.

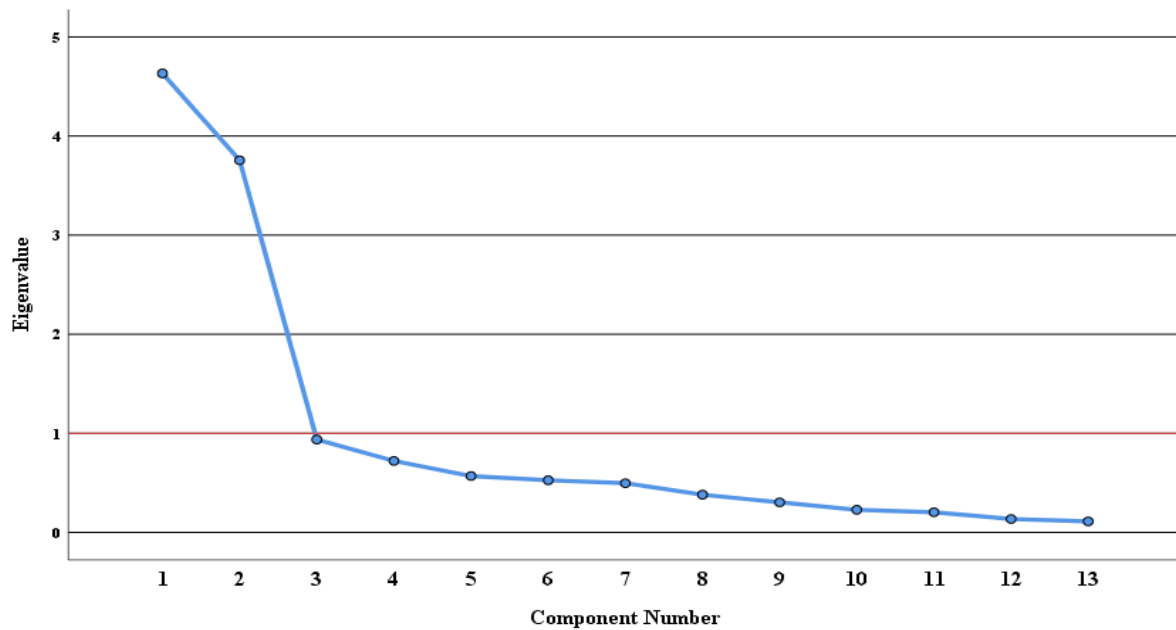


Figure 1. Scree Plot

Following the identification of the two-factor structure, a rotation procedure was applied to obtain the Rotated Component Matrix and enhance the interpretability of the factor solution. The factor loadings of each item were examined based on the factor on which they predominantly loaded. A minimum factor loading threshold of .50 was established as the criterion for item retention, in line with commonly accepted psychometric standards in sport sciences and behavioral research. Furthermore, items that demonstrated high and comparable loadings across more than one factor were carefully evaluated to ensure conceptual clarity and discriminant validity between factors. Items that did not meet these criteria or that compromised the distinctiveness of the factor structure were considered for removal or revision. The results of the rotated component matrix indicated that the retained items loaded strongly and distinctly onto their respective factors, supporting the multidimensional structure of the scale. The Rotated Component Matrix of the OSBAS is presented in Table 2.

Table 2. Rotated Component Matrix

Item No	Item Content	Factor 1	Factor 2
1	I consider online betting to be an individual choice.		.573
2	Online betting is a normal behavior.		.846
3	Restrictions on online betting are excessive.		.760
4	Online betting makes sports competitions more exciting.		.739
5	Online betting is a means of earning easy money.		.424*
6	I may find it reasonable to allocate money for online betting.		.785
7	I think that online betting may have serious harmful effects.	.790	
8	I would consider online betting if suitable conditions arise.		.821
9	Online betting may have negative effects on family relationships.	.831	
10	Online betting may turn into a habit that is difficult to control in the long run.	.889	
11	Online betting carries the risk of causing financial problems.	.861	

12	Online betting may negatively affect social relationships.	.861
13	Online betting has the potential to cause personal problems in the long term.	.903

*The item excluded

According to Table 2, the results of the EFA revealed a two-factor structure explaining attitudes toward online betting. The first factor consisted of items reflecting individuals' perceptions of the potential psychological, social, and financial risks associated with online betting and was therefore labeled "Risk Perception." The factor loadings for the items in this dimension ranged between .790 and .903, indicating strong item-factor relationships and supporting the robustness of this factor. The second factor included items reflecting positive evaluations of online betting, particularly those emphasizing its acceptability, normality, and characterization as a personal choice. This factor was labeled "Behavioral Acceptance." The factor loadings of the items within this dimension ranged between .573 and .846, demonstrating acceptable to strong loadings consistent with psychometric standards. Additionally, the item "online betting is a means of earning easy money" was removed from the scale because its factor loading (.424) did not meet the predetermined retention criterion of .50. The removal of this item contributed to improving the clarity and overall strength of the factor structure. Furthermore, the analysis indicated that all retained items loaded strongly onto their respective factors, and no problematic cross-loadings were observed. These findings demonstrate that the factor structure of the scale is both conceptually meaningful and statistically sound, providing strong evidence for the construct validity of the OSBAS.

Confirmatory Factor Analysis and Reliability Results

CFA was conducted to validate the factor structure of the scale. The initial CFA results indicated that the goodness-of-fit indices of the two-factor model were below acceptable threshold values. To improve model fit, multiple criteria were considered simultaneously, including overall goodness-of-fit indices, standardized factor loadings, and modification indices. Although some items demonstrated adequate factor loadings in the exploratory phase, CFA results revealed that certain items contributed to model misfit due to high error covariances and large modification indices suggesting theoretically unjustified relationships between items. In particular, Item 9 and Item 13 from the Risk Perception factor and Item 1 and Item 3 from the Behavioral Acceptance factor were identified as sources of model strain. These items were therefore removed to improve model fit and achieve a more parsimonious and theoretically coherent structure. Importantly, item removal decisions were also guided by theoretical considerations to ensure that the conceptual integrity of the factors was preserved. Following these modifications, the final model demonstrated goodness-of-fit indices within acceptable ranges, indicating that the revised two-factor structure provided an adequate representation of the underlying construct. The goodness-of-fit indices and detailed results of the final CFA model are presented in Table 3.

Table 3. Model Fit Indices

Model	X ²	df	X ² /df	CFI	GFI	AGFI	RMR	RMSEA	ECVI
Initial Model	216.552	53	4.086	.888	.828	.747	.170	.131	1.489
Final Model	51.413	19	2.706	.976	.962	.927	.097	.076	.286

When the CFA results presented in Table 3 were examined, it was observed that the goodness-of-fit indices of the initial model were below acceptable thresholds ($\chi^2/df = 4.086$; RMSEA = .131; CFI = .888). These findings indicate that the initially proposed two-factor structure did not provide an adequate fit to the data. To improve model fit, modification indices and standardized factor loadings were evaluated jointly, and items that negatively affected model fit were removed from the scale in a stepwise manner. Following these modifications, the goodness-of-fit indices of the final

CFA model demonstrated substantial improvement ($\chi^2/df = 2.706$; RMSEA = .076; CFI = .976; GFI = .962; AGFI = .927). These values indicate that the final model achieved acceptable, and in some cases good, levels of model fit according to commonly accepted criteria in behavioral and sport sciences research. Furthermore, the standardized factor loadings of the items retained in the final model ranged between .710 and .931, and all factor loadings were found to be statistically significant ($p < .001$). Overall, the CFA findings indicate that the final model demonstrates a satisfactory level of fit based on widely accepted model fit criteria for measurement models. These results provide strong evidence supporting the validity of the proposed two-factor structure of the OSBAS. The path diagram illustrating the confirmed factor structure is presented in Figure 2.

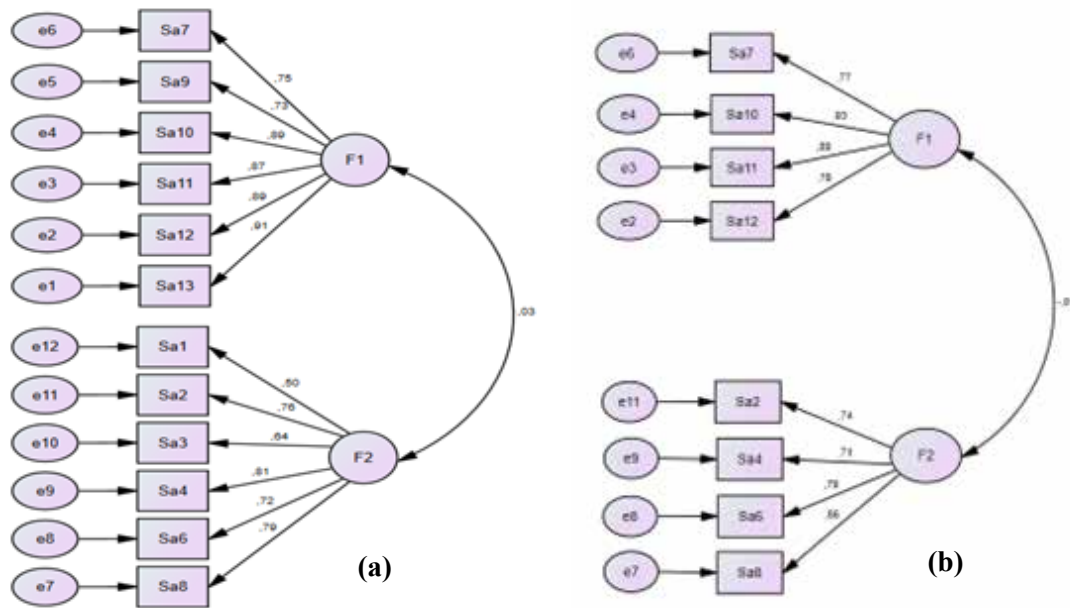


Figure 2. Path Diagram Results of the First (a) and Final (b) CFA Models

The CFA path diagrams presented in Figure 2 illustrate the results of the initial (a) and final (b) models of the scale. The model consists of two latent factors Risk Perception (F1) and Behavioral Acceptance (F2) and their corresponding observed variables. In the final model, the Risk Perception factor is represented by Item 7, Item 10, Item 11, and Item 12, while the Behavioral Acceptance factor is represented by Item 2, Item 4, Item 6, and Item 8. The standardized factor loadings of the items on their respective latent factors ranged between .71 and .93, and all loadings were statistically significant. These findings indicate that the items strongly represent their corresponding latent constructs. Additionally, the relatively low error variances associated with the observed variables further support the reliability and precision of the measurements. Moreover, the correlation between the two latent factors was found to be low and statistically non-significant. This result suggests that Risk Perception and Behavioral Acceptance represent two distinct yet complementary dimensions within the overall construct of online sports betting attitudes. The reliability results of the scale are presented in Table 4.

Table 4. Factor Loadings, Item–Total Correlations, and Reliability and Validity Statistics for the Final Model

Factor	Item No	Item Content	Factor Loading	Mean ± SD	Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha	AVE	CR
Factor 1	7	I think that online betting may have serious harmful effects.	.845	3.903± 1.416	.531	.718	.905	.780	.934
	10	Online betting may turn into a habit that is difficult to control in the long run.	.930	4.033±1.343	.540	.717			
	11	Online betting carries the risk of causing financial problems.	.910	4.113±1.316	.549	.716			
	12	Online betting may negatively affect social relationships.	.845	3.863±1.340	.400	.743			
Factor 2	2	Online betting is a normal behavior.	.821	2.040±1.258	.387	.745	.854	.701	.904
	4	Online betting makes sports competitions more exciting.	.809	2.450±1.499	.456	.733			
	6	I may find it reasonable to allocate money for online betting.	.841	1.833±1.153	.354	.749			
	8	I would consider online betting if suitable conditions arise.	.877	2.120±1.355	.424	.739			
Total							.758	.741	.958

Table 4 presents the factor loadings, descriptive statistics, item–total correlations, internal consistency coefficients, and indicators of convergent validity and construct reliability for the two-factor structure of the OSBAS. The first factor, Risk Perception, consists of four items. The standardized factor loadings for the items in this factor ranged between .845 and .930, with all loadings exceeding acceptable threshold values. The item–total correlations ranged from .400 to .549, indicating that all items were consistently and adequately associated with the underlying factor. The Cronbach's alpha coefficient for this factor was calculated as .905, reflecting a high level of internal consistency. Furthermore, the AVE value was .780, and the CR value was .934, demonstrating strong convergent validity and construct reliability for this factor. The second factor, Behavioral Acceptance, also consists of four items. The standardized factor loadings for this factor ranged between .809 and .877, indicating that all items adequately represented the intended construct. The item–total correlations ranged from .354 to .456, supporting the internal coherence of the factor. The Cronbach's alpha coefficient for Behavioral Acceptance was calculated as .854, indicating good internal consistency. Additionally, the AVE and CR values were .701 and .904, respectively, both exceeding the recommended threshold values (AVE \geq .50; CR \geq .70), further supporting the convergent validity and reliability of the factor. Regarding the overall scale, the total Cronbach's

alpha coefficient was .958, the overall AVE value was .741, and the overall CR value was .958. These findings indicate that the scale demonstrates adequate internal consistency, high construct reliability, and strong convergent validity at the overall level. Collectively, these results provide robust psychometric evidence supporting the reliability and validity of the OSBAS.

Criterion Validity

To evaluate the criterion validity of the scale using the known-groups method, participants' subscale and total scores were compared based on their prior experience with online betting. The results of these comparisons are presented in Table 5.

Table 5. Comparison of Scale and Subscale Scores Based on Online Betting Experience

Variable	Group	N	Mean	SD	t	df	p
Risk Perception	Yes	87	2.10	1.07	0.76	298	.450
	No	213	1.99	1.24			
Behavioral Acceptance	Yes	87	2.84	1.18	7.21	130.19	.001*
	No	213	1.81	0.92			
Total Score	Yes	87	2.47	0.79	5.72	154.72	.001*
	No	213	1.90	0.76			

*p<.01

According to the analysis results shown in Table 5, participants who reported having previously engaged in online betting had significantly higher Behavioral Acceptance scores compared to those who reported no prior online betting experience ($t = 7.21, p < .001$). This finding indicates that individuals with online sports betting experience tend to perceive online sports betting as more acceptable, reasonable, and appealing behavior. Similarly, the total scale scores of participants who had engaged in online sports betting were significantly higher than those of participants who had not ($t = 5.72, p < .001$). This result suggests that the overall structure of the scale effectively differentiates individuals based on their online betting behavior, providing further support for the scale's criterion validity. In contrast, no statistically significant difference was found between participants who had and had not engaged in online betting in terms of the Risk Perception subscale ($p > .05$). This finding suggests that prior experience with online betting may not directly influence individuals' perceptions of risk, or that risk perception may be shaped independently of betting participation behavior. Overall, these findings demonstrate that the OSBAS, particularly its Behavioral Acceptance dimension, significantly distinguishes between individuals based on their online betting experience. This evidence provides strong support for the criterion validity of the scale.

DISCUSSION

The aim of this study was to develop a valid and reliable measurement instrument to assess attitudes toward online sports betting. The psychometric properties of the Online Betting Attitude Scale developed in the present study were comprehensively examined using EFA and CFA. Prior to conducting EFA, the results of the KMO measure and Bartlett's Test of Sphericity indicated that the dataset was suitable for factor analysis. The KMO value of .835 demonstrated a high level of sampling adequacy (Kaiser, 1974; Fabrigar et al., 1999), while the statistically significant Bartlett's test result ($p < .05$) confirmed the presence of sufficient intercorrelations among items to justify factor analysis (Hair et al., 2019). These findings provided a strong foundation for evaluating the construct validity of the scale.

The EFA results revealed that attitudes toward online sports betting were represented by a two-factor structure. The two factors, each with eigenvalues greater than 1.00, collectively explained 64.51% of the total variance, which is considered adequate and robust for research in the social and sport sciences (Büyüköztürk, 2010). The first factor was

labeled Risk Perception, as it reflected individuals' perceptions of the psychological, social, and financial risks associated with online sports betting. The second factor was labeled Behavioral Acceptance, as it encompassed attitudes reflecting the perception of online sports betting as a normal, acceptable, and personally justifiable activity. The high factor loadings observed across both dimensions and the absence of problematic cross-loadings indicate that the scale possesses a conceptually clear and structurally consistent factor structure (Field, 2013). Additionally, the removal of an item that did not meet the minimum factor loading criterion contributed to strengthening the structural integrity of the measurement instrument (Hair et al., 2019).

The two-factor structure identified through EFA was further examined using CFA, and the final model demonstrated good model fit based on commonly accepted goodness-of-fit criteria. The χ^2/df , RMSEA, CFI, GFI, and AGFI values indicated that the proposed two-factor model provided an adequate representation of the observed data (Browne & Cudeck, 1993; Hu & Bentler, 1999). Furthermore, the high and statistically significant standardized factor loadings in the final model indicated that the items strongly represented their respective latent constructs (Kline, 2023). The low and non-significant correlation between the two latent factors (Büyüköztürk, 2010) suggests that Risk Perception and Behavioral Acceptance represent distinct but complementary dimensions of the overall construct of online betting attitudes.

The reliability and validity findings also support the robustness of the scale. The high Cronbach's alpha coefficients obtained for both subdimensions indicate strong internal consistency (Hair et al., 2019; Kline, 2023). Additionally, the AVE and CR values exceeded the recommended threshold levels (Fornell & Larcker, 1981; Kline, 2023), providing further evidence of convergent validity and construct reliability. The overall reliability and validity indicators for the total scale also support the high measurement quality of the instrument.

The findings obtained within the scope of criterion validity (DeVellis, 2017) further demonstrated the discriminative power of the scale. Participants who reported prior experience with online betting scored significantly higher on the Behavioral Acceptance subdimension and the overall scale compared to those without such experience ($p < .05$). These results indicate that the scale effectively distinguishes differences in attitudes based on online sports betting experience. In contrast, the absence of a statistically significant difference in the Risk Perception dimension ($p > .05$) suggests that risk perception may be shaped independently of direct betting experience. This finding may indicate that individuals can recognize the potential risks associated with online sports betting while still demonstrating higher levels of behavioral acceptance, highlighting the complex cognitive and behavioral dynamics underlying betting attitudes.

Overall, the findings of this study demonstrate that the OSBAS, consisting of eight items and a two-factor structure, exhibits strong psychometric properties in terms of construct validity, reliability, and criterion validity. These results support the use of the scale as a valid, reliable, and discriminative measurement instrument for assessing attitudes toward online betting in sport sciences and behavioral research contexts.

CONCLUSION

The OSBAS developed in this study is a five-point Likert-type measurement instrument consisting of a total of eight items and two subdimensions. Participants rate each item on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale assesses attitudes toward online betting across two primary dimensions: Risk Perception and Behavioral Acceptance. The Risk Perception subdimension consists of Item 7, Item 10, Item 11, and Item 12, and these items are reverse scored. After reverse scoring, higher scores on this subdimension indicate a more critical attitude toward online sports betting and a higher level of risk awareness, whereas lower scores reflect lower perceived risk and reduced critical awareness. The Behavioral Acceptance subdimension consists of Item 2, Item 4, Item 6, and Item 8, and these items are not reverse scored. Higher scores on this subdimension indicate a more positive level of acceptance and behavioral

inclination toward online sports betting, while lower scores indicate a more negative or less accepting attitude. Subscale scores are calculated by summing the scores of the corresponding items, with possible scores for each subdimension ranging from 4 to 20. The total scale score is calculated by summing all items after reverse scoring the Risk Perception items, resulting in a total score range of 8 to 40. Higher total scores indicate more positive attitudes toward online sports betting, whereas lower total scores reflect more negative attitudes. The final version of the scale is presented in Table 6.

Table 6. Final Version of the OSBAS

Factor	Item No	Item Content
*Risk Perception (Risk Algısı)	1	I think that online betting may have serious harmful effects. (<i>Çevrim içi bahsin ciddi zararlı etkileri olabileceğini düşünüyorum.</i>)
	2	Online betting may turn into a habit that is difficult to control in the long run. (<i>Çevrim içi bahis uzun vadede kontrol edilmesi zor bir alışkanlığa dönüşebilir.</i>)
	3	Online betting carries the risk of causing financial problems. (<i>Çevrim içi bahis finansal sorunlara yol açma riski taşır.</i>)
	4	Online betting may negatively affect social relationships. (<i>Çevrim içi bahis sosyal ilişkileri olumsuz etkileyebilir.</i>)
Behavioral Acceptance (Davranışsal Kabul)	5	Online betting is a normal behavior. (<i>Çevrim içi bahis normal bir davranıştır.</i>)
	6	Online betting makes sports competitions more exciting. (<i>Çevrim içi bahis spor karşılaşmalarını daha heyecanlı hale getirir.</i>)
	7	I may find it reasonable to allocate money for online betting. (<i>Çevrim içi bahis için para ayırmayı makul bulabilirim.</i>)
	8	I would consider online betting if suitable conditions arise. (<i>Uygun koşullar oluşursa çevrim içi bahis oynamayı düşünebilirim.</i>)

*Risk Perception items are reverse-coded.

In conclusion, the OSBAS is a valid and reliable measurement instrument with strong psychometric properties. OSBAS may be used by researchers and practitioners, provided that the original scale structure and item format are preserved and appropriate academic citation is included.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Aka, V., & Erdem, M. (2024). Kumar Zararları Ölçeği-Kısa Formunun (KZÖ-KF) Türkçeye Uyarlanması: Geçerlik ve Güvenilirlik Çalışması [Turkish adaptation of the short gambling harm screen (SGHS): Validity and reliability study]. *Celal Bayar Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi*, 11(4), 593-599.
- Arcan, K., & Karanci, A. N. (2014). Kumar oynama nedenleri ölçeğinin uyarlama, geçerlilik ve güvenilirlik çalışması [Adaptation, validity, and reliability study of the five-factor gambling motives scale]. *Anatolian Journal of Psychiatry/Anadolu Psikiyatri Dergisi*, 15(3), 248-256.
- Arcan, K., & Karanci, A. N. (2015). Adaptation study of the Turkish version of the gambling-related cognitions scale (GRCS-T). *Journal of Gambling Studies*, 31(1), 211-224. <https://doi.org/10.1007/s10899-013-9414-5>
- Ayandele, O., Popoola, O., & Obosi, A. C. (2020). Influence of demographic and psychological factors on attitudes toward sport betting among young adults in southwest Nigeria. *Journal of Gambling Studies*, 36(1), 343-354. <https://doi.org/10.1007/s10899-019-09882-9>
- Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in Public Health*, 6, 149. <https://doi.org/10.3389/fpubh.2018.00149>
- Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research*, 21(2), 230-258. <https://doi.org/10.1177/0049124192021002005>
- Buran, A., Çakıcı, M., Çakır, G., & Yılmaz, B. (2019). Kumar Aşerme Ölçeğinin Türkçe geçerlilik ve güvenilirlik çalışması [Turkish validity and reliability study of gambling craving scale]. *Anatolian Journal of Psychiatry*, 20(1), 84-86.
- Büyüköztürk, Ş. (2010). *Sosyal bilimler için veri analizi el kitabı: İstatistik, araştırma deseni SPSS uygulamaları ve yorum* (11. Baskı). Pegem Akademi.
- Cantinotti, M., Ladouceur, R., & Jacques, C. (2004). Sports betting: Can gamblers beat randomness? *Psychology of addictive behaviors*, 18(2), 143-147.
- Clark, L., & Wohl, M. J. (2021). Langer's illusion of control and the cognitive model of disordered gambling. *Addiction (Abingdon, England)*, 117(4), 1146.
- Czupryna, M., Kubińska, E., & Markiewicz, Ł. (2018). Can conjugate prior probability explain the illusion of control? *Decyzje*, 29, 87-113.
- DeVellis, R. F. (2017). *Scale development: Theory and applications* (4th ed.). Sage.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272-299.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Sage.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson Education.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage.
- Hellumbråten Kristensen, J., Trifunovic, S., Strand, J., Kraft Vistnes, K., Syvertsen, A., Zandi, A., & Pallesen, S. (2023). A systematic literature review of studies on attitudes towards gambling using the attitudes towards gambling scale (ATGS). *International Gambling Studies*, 23(3), 353-386. <https://doi.org/10.1080/14459795.2022.2143856>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Karaibrahimoğlu, A., Kişioğlu, A. N., Çoban, B., Yıldırım, A., & Yılmaz, S. D. (2021). Validity and reliability study of online gambling addiction scale (OGAS). *Addicta: The Turkish Journal on Addictions*, 8(3), 186-193.

- Khazaal, Y., Chatton, A., Billieux, J., Bizzini, L., Monney, G., Fresard, E., Thorens, G., Bondolfi, G., El-Guebaly, N., Zullino, D., & Khan, R. (2012). Effects of expertise on football betting. *Substance Abuse Treatment, Prevention, and Policy*, 7(1), 18. <https://doi.org/10.1186/1747-597X-7-18>
- Kiyak, C., Cetinkaya, D., McAlaney, J., Hodge, S., & Ali, R. (2024). interrupting dissociation of players through real-time digital tasks during online gambling. *International Journal of Human-Computer Interaction*, 40(18), 5247-5258. <https://doi.org/10.1080/10447318.2023.2233127>
- Kline, R. B. (2023). *Principles and practice of structural equation modeling* (5th ed.). The Guilford Press.
- Lakew, N., Jonsson, J., & Lindner, P. (2024). Probing the role of digital payment solutions in gambling behavior: Preliminary results from an exploratory focus group session with problem gamblers. *JMIR Human Factors*, 11(1), e54951.
- Lopez-Gonzalez, H., Estévez, A., & Griffiths, M. D. (2019). Internet-based structural characteristics of sports betting and problem gambling severity: Is there a relationship? *International Journal of Mental Health and Addiction*, 17(6), 1360-1373. <https://doi.org/10.1007/s11469-018-9876-x>
- Mercier, J., Sévigny, S., Jacques, C., Goulet, A., Cantinotti, M., & Giroux, I. (2018). Sports bettors: A systematic review. *Journal of Gambling Issues*, 38, 203-236.
- Monson, A., James, R. J., Wootton, R. E., & Newall, P. (2024). Illusion of control or passive superstition? A comparison of two explanations for irrational gambling beliefs. *Psychology of Addictive Behaviors*, 39(4), 389-396. <https://doi.org/10.1037/adb0001036>
- Myrseth, H., Brunborg, G. S., & Eidem, M. (2010). Differences in cognitive distortions between pathological and non-pathological gamblers with preferences for chance or skill games. *Journal of Gambling Studies*, 26(4), 561-569. <https://doi.org/10.1007/s10899-010-9180-6>
- Nevitt, J., & Hancock, G. R. (2004). Evaluating small sample approaches for model test statistics in structural equation modeling. *Multivariate Behavioral Research*, 39(3), 439-478. https://doi.org/10.1207/S15327906MBR3903_3
- Rahman, A. S., Balodis, I. M., Pilver, C. E., Leeman, R. F., Hoff, R. A., Steinberg, M. A., Rugle, L., Krishnan-Sarin, S., & Potenza, M. N. (2014). Adolescent alcohol-drinking frequency and problem-gambling severity: Adolescent perceptions regarding problem-gambling prevention and parental/adult behaviors and attitudes. *Substance Abuse*, 35(4), 426-434. <https://doi.org/10.1080/08897077.2014.951754>
- Saefullah, R., & Vaidyanathan, S. (2025). The Impact of ease of digital access on the increase in online gambling cases among students. *International Journal of Ethno-Sciences and Education Research*, 5(2), 37-45.
- Saran, B. (2024). From casinos to clicks: The evolution of gambling in the digital age. *Santosh University Journal of Health Sciences*, 10(2), 173-183.
- Shevlin, M., & Miles, J. N. V. (1998). Effects of sample size, model specification and factor loadings on the GFI in confirmatory factor analysis. *Personality and Individual Differences*, 25(1), 85-90.
- Strickland, C.-J. R., Taylor, A., Hendon, K. J., Provost, S. C., & Bizo, L. A. (2006). Erroneous beliefs among frequent fruit-machine gamblers. *Gambling Research: Journal of the National Association for Gambling Studies (Australia)*, 18(2), 42-54.
- Tabri, N., Xuereb, S., Cringle, N., & Clark, L. (2022). Associations between financial gambling motives, gambling frequency and level of problem gambling: A meta analytic review. *Addiction*, 117(3), 559-569. <https://doi.org/10.1111/add.15642>
- Tekin, K., Güliyeve, C., Yılmaz, E., Ögel, K., & Yüksel, B. C. (2020). Screening scale for behavioral and socioeconomic risk factors for gambling addiction: A validity and reliability study. *ADDICTA: The Turkish Journal on Addictions*, 7(4), 223-229.
- Towfigh, E., & Glöckner, A. (2011). Game over: Empirical support for soccer bets regulation. *Psychology, Public Policy, and Law*, 17(3), 475.