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Effects of Sports Betting Motivations on Sports Betting Addiction in a Turkish Sample

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Abstract

Many earlier studies conducted on sports betting and addiction have examined sports betting in the context of gambling and have not taken into account the specific motivations of sports betting. Therefore, the effects of motivational elements of sports betting on sports betting addiction risk are unknown. The aim of the present study was to examine the effects of motivation factors specific to sports betting on sports betting addiction. Accordingly, three linked studies were conducted. Firstly, to determine sports betting motivations "Sports Betting Motivation Scale (SBMS)" developed and validated. Secondly, to determine the risks of sports betting addiction "Problem Sports Betting Severity Index (PSBSI)" was adapted from Problem Gambling Severity Index (PGSI). Finally, the third study examined effects of the sports betting motivations on sports betting addiction risk. Study one (n=281), study two comprised (n=230), and the final study comprised (n=643) sports fans who bet on sports regularly for 12 months with different motivations. The findings demonstrate that the SBMS appears to be a reliable and valid instrument for assessing sports betting motivations. Also, the findings provided PSBSI validity for the use of the Turkish and sports betting adapted version of PGSI. As a result of the main research, "make money," "socialization," and "being in the game" motivations were found to be positive predictors of sports betting addiction risk, while "fun" motivation was a negative predictor. The motivations "recreation/escape," "knowledge of the game," and "interest in sport" were found not to be significant predictors of the risk of sports betting addiction.

Keywords Sports betting · Sports betting motivation · Sports betting addiction · Problem sports betting

Sports events have created an attractive environment and betting markets for betting due to the uncertainty of outcomes, the popularity of sports, and also its unique dynamics (Li et al. 2012).

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The relationship between sports and betting, which is gradually becoming stronger, has made sports betting one of the most popular channels in the sports industry (Koning and van Velzen 2009; Li et al. 2012; Mao et al. 2015). Sports betting can be defined as wagering on the final result or components of national or international sports events in its most general form (Anastasovski and Nanev 2014; Hing et al. 2015; Hoye et al. 2010; Morris 2004). Modern sports betting, which started with Pedestrianism in the nineteenth century, has become an event in sports that is examined by different disciplines and is always easily accessible with media tools due to the widespread use of the internet in the early 1990s and 2000s (Armstrong and Carroll 2017; Hing et al. 2016; Hing et al. 2017; Jensen et al. 2019; Kabiri et al. 2019; López-Gonzalez and Griffiths 2017; López-Gonzalez et al. 2017; López-Gonzalez et al., 2018a; López-Gonzalez et al. 2018b; López-Gonzalez et al. 2019c; Lole et al. 2020). In parallel with this, the increase in supply and demand for sports betting has enabled the sports betting market to diversify, change structurally and grow globally (Deutscher et al. 2019; Li et al. 2012; Russell et al. 2019a; Russell et al. 2019b). In this context, it is stated that this structural change in sports betting has also brought about some changes in the behaviour and preferences of the bettors (Gordon et al. 2015; Houghton et al. 2019; Russell et al. 2019a). The behavior patterns related to sports betting, which is generally considered a form of gambling, are also considered in this context (López-Gonzalez et al. 2019c; Nweze et al. 2020). Some studies have revealed that sports betting behavior is a motivated behavior (Binde 2009; Binde 2013; Bruce 2013; Chantal et al. 1995; Fang and Mowen 2009; Lamont and Hing 2020; Lee et al. 2014; Lee et al. 2007) that differs according to demographic variables, culture, geography, consumption and leisure time habits, economic system, government policies, social environment, religion and beliefs (Abbott et al. 2018; Binde 2005; Hoye et al. 2010; Lambert et al. 1959; Gökce Yüce et al. 2017; López-Gonzalez et al. 2019a; López-Gonzalez et al. 2019b).

Although sports bets are considered a form of gambling within the scope of these differences, sports bets emerge as an area that should be examined separately from gambling because of the dynamics it contains; some sports betting motives have their own characteristics. Studies also state that some elements related to sports bettors have distinctive features and their motivations of sports betting differ from other gambling elements (Gordon et al. 2015; Gökce Yüce et al. 2017; Li et al. 2012; Mao et al. 2015; Morris 2004;). Gordon et al. (2015) stated that in sports betting, unlike traditional gambling, bettors rely on their own skills, knowledge, and analysis and need less chance than other types of gambling; getting carried away more on their own knowledge than on assessing risk dimensions. This behaviour is called or known by Morris (2004), as "Intellectual Challenge". Therefore, the fact that the bettor has various information (e.g. team, player, competition records, performance statistics), in the sports betting may affect the probability of winning (Mikesell and Zorn 1987). Sports fans or sports bettors think that they have expert experience and intelligence due to the simple nature of sports competitions, their familiarity with sports, and their interests. This is another situation that distinguishes their preferences and behaviors from other gambling forms (Li et al. 2012; Mao et al. 2015). In addition, sports betting preferences of the individuals are influenced by the situations in which they place various emotions and meanings. So much so that sports betting can even be used as a way to express loyalty to the sports betting team for a loyal sports fan, or to avoid potential frustration and sadness that may result from the event of defeat (Koning and van Velzen 2009). Each of these situations reveals that sports betting has different qualities than other types of gambling. At this point, it is understood that the motivations and preferences for sports betting deserve a separate scientific assessment in a more in-depth way.

However, while the outcomes of sports betting, which is a motivated behavior, can be positive, it can also have risk factors and negative qualities, as in other forms of gambling. Conceptualization of betting games has been carried out within the scope of all processes of individual behaviors ranging from recreational activities to pathological conditions (Shaffer and Korn 2002). Studies on sports bets evaluated in gambling behaviors and their possible outcomes focus on two main elements. One of them is that sports betting can provide positive effects to individuals as an entertainment and recreation tool, and the other one is that it can lead to some psychological, social, and economic problems in individuals (Lee et al. 2014; López-Gonzalez et al. 2019b; López-Gonzalez et al. 2019c; Nweze et al. 2020; Petry 2003; Russell et al. 2019b; Platz and Millar 2001; Reiche 2013; Welte et al. 2004; Williams et al. 2012). While positive effects reduce the stress of individuals and bring results such as satisfaction and relaxation (Lee et al. 2014), in negative situations, problems such as negative mood, depression, feelings of guilt, anxiety, problematic gambling/compulsive gambling, financial problems, addiction, physical and mental health issues can also occur, and both individuals and their family and social environment can be negatively affected by this situation (Abbott et al. 2018; Hing et al. 2015; Jenkinson et al. 2018; Ratelle et al. 2004). As the frequency and duration of the behavior of individuals increases, the risk of emerging psychological, physical, social, financial, and professional problems in individuals increases. In short, it is stated that excessive specific activity can cause serious problems regardless of its nature (Marks 1990; Petry 2016).

Excessive gambling behavior, previously classified as "pathological gambling," was first evaluated within the scope of "behavioral addiction" with the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V, American Psychiatric Association 2013). Similarly, the concept of addiction has previously referred to the excessive and out-of-control use of psychotropic substances; it has gained a behavioral (non-chemical) meaning with the evaluation of DSM-V (Nogueira et al. 2018). At this point, extreme and out of control situations for sports betting, which are considered as a form of gambling, can also be considered as "sports betting addiction" within the scope of behavioral addiction.

Many of the studies carried out so far have examined sports betting within the scope of gambling and have not considered the specific motivation elements of sports betting sufficiently. At this point, it is not specifically known which motivations of sports betting will produce positive results and which ones will produce negative results.

Considering that sports bettors can carry addiction risk factors just like gamblers, determining the motivations which affect the level of addiction can lead to the prevention of negative effects. However, although there are studies on sports betting and bettors in different parts of Europe, sports betting motivations differ according to some variables. Besides, thus far so limited researches handled and examined sports betting separately from gambling. This situation adds authenticity to this study which was conducted in Turkey. Also, it is stated that about 5 million people aged 18 and over are betting on sports legally in Turkey, and in addition to this, almost 5 million people are betting on sports illegally (fanatik.com 2019). Considering that the number of nearly 10 million people mentioned is too big compared to the general population of Turkey (12%). Consequently, it is important to know and measure the sports betting motivations via original scale and their effects of sports betting addiction risk of sports bettors in Turkey. In this context, the purpose of this study is to examine the effects of motivation factors specific to sports betting on sports betting addiction risk, through the development and validation of "Sports Betting Motivation Scale (SBMS)"and the adaptation of the "Problem Sports Betting Severity Index (PSBSI)" was adapted.

Methods

The study was conducted at 3 stages, firstly, Sports Betting Motivation Scale (SBMS) was developed to determine sports betting motivations (Study 1). Secondly, the Problem Gambling Severity Index (PGSI) developed by Ferris and Wynne (2001), was renamed as Problem Sports Betting Severity Index (PSBSI) and not only adapted to Turkish but also in accordance with sports betting and validated (Study 2). Finally, in the third stage, an exploratory study was conducted to examine which motivations of individuals to bet on sports are related to sports betting addiction and how these motivations affect the risk of sports betting addiction (Study 3).

Study 1 (Development and Initial Validation of SBMS)

Participants and Procedure

In the SBMS development stage progressive approach has been adopted and the steps suggested by the experts were followed (Bryman 2012; Churchill Jr 1979). Accordingly, first of all, to specify domain of construct and to create an item pool, an extensive literature review was conducted to assess all general sports betting motivations. Firstly, judgment sampling and secondly snowball sampling methods were used to recruit the participants. Face-to-face in-depth interviews were held with the participants (M_{age}=38.10 years; SD=11.75; 100% males; range 21–71) who bet on sports regularly (n=30). Sports betting is one of the activities in Turkey where men attend and prefer more (Gökce Yüce et al. 2017; Gökce Yüce 2020). Accordingly, since all of the interviews were held in betting shops (land-based) during about a month and all the sport bettors in these places were male the whole sample consisted of men. Also, in the context of snowball sampling, all participants recommended male sports bettors. In interviews, participants were asked a question about why they bet on sports. After deciphering and analyzing qualitative data, an item pool was created (74 items). Prior to the data collection process for the pilot study, content validity for the SBMS was established through the process described by Lawshe (1975), by five experts in the research area, and the instrument was modified accordingly (reduced to 63 items). Structural validity was carried out with both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), and a criterion validity analysis and internal reliability test with Cronbach's alpha. For the validity of the measurements, it is recommended that the characteristics of the sample collected in the pilot study should have similar characteristics to the group that constitutes the original sample of the study, and even, if possible, data should be collected from the original population (Netemeyer et al. 2003). Accordingly, in the first stage of the pilot study, data were collected both online and face-to-face from the sports fans (n=251, 229 males and 22 females, M_{age} = 28.86 years; SD = 10.41; 91.23% male, 8.77% female; range 18-57) who bet on sports regularly for last 12 months. Before conducting EFA, the suitability of the data for factor analysis was examined by the Kaiser-Meyer-Olkin (KMO) coefficient and Barlett's Sphericity Test. As a result of the analyses, it was found that the data were suitable for factor analysis. Principal Component Analysis was used in EFA. Accordingly, items that did not have the expected values (n=26) were removed from the scale respectively and the analysis was repeated each time. After this reduction, a structure of 7 dimensions and 37 items was obtained. Data were collected from a different sample to test the validity and reliability of

the structure obtained after the scale purification process was carried out according to the results obtained from the EFA. Accordingly, at this stage, data were collected both online and face-to-face from the sports fans (n=230, 219 males and 11 females, M_{age} = 25.02 years; SD = 6.12; 95.22% male, 4.78% female; range 18–52) who regularly bet on sports for last 12 months. Before starting the CFA analysis, multivariate normality values were examined and it was determined that the values were at the expected level. The structure of the SBMS model was tested using Structural Equation Model with Maximum Likelihood method under the scope of CFA.

Data Analysis

In the development and validation stage construct validity of SBMS was assessed using EFA and CFA. Structural equation modeling (SEM) was used to assess the criterion validity and internal consistency was assessed with Cronbach's alpha and construct reliability (CR). Before conducting exploratory factor analysis, the suitability of the data for factor analysis was examined by the Kaiser-Meyer-Olkin (KMO) coefficient and Barlett's Sphericity Test, and also before the CFA analysis, multivariate normality values were examined. In CFA the maximum likelihood estimation method was used and to determine goodness of fit, Root Mean Square Residuals (RMSEA), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI; NNFI) were used. Also to assessed discriminant validity interdimensional correlation coefficients and Average Variance Extracted (AVE) were examined. SPSS version 20 and AMOS version 24 programs were used in the analysis of the data.

Results

After the literature review and qualitative interviews and expert opinions to determine the structures within the scope of the research, a pilot study was carried out with a scale containing 63 items. Before conducting EFA, the suitability of the data for factor analysis was examined by the Kaiser-Meyer-Olkin (KMO) coefficient and Barlett's Sphericity Test. As a result of the analysis, it was found that the data set was suitable for EFA (Hair et al. 2014) [(KMO) coefficient = .876, Barlett's Sphericity Test (χ^2) = χ^2 = 4345.609, p < .001)]. After the analysis, the factor load values of the items, overlap, and the scree plot were examined. In line with this information, 26 items that did not have the expected values were removed from the scale respectively and the analysis was repeated each time. After this reduction, a structure of 7 dimensions (make money, fun, socialization, recreation/ escape, knowledge of the game, interest in the sport, being in the game) and 37 items were obtained. The total variance explained was determined as 58.32%. The factor loading values of the SBMS was determined to have ranged between .483 and .802. Cronbach's alpha value of the factors of SBMS scale was determined between (α=.698) and (α=.907) as the result of EFA and the item-total correlation values in the scale vary between (.313) and (.596). All CR values are above .60 and AVE values are between (.41) and (.55), CR value should be greater 0.60 and AVE should be greater than 0.5 (Fornell and Larcker 1981). However, Fornell and Larcker (1981), stated that if AVE is less than 0.5, but composite reliability is higher than 0.6, the convergent validity of the construct is still adequate. The details of SBMS are presented in Table 1.

Table 1 Validity and reliability coefficients of Sports Betting Motivation Scale

Factor/Item	Factor Loading	CR	AVE	Variance (%) (Eigenvalues)
Make Money (α=.907)		0.912	0.512	25.156% (9.811)
Item 16	.784			
Item 22	.772			
Item 28	.770			
Item 15	.748			
Item 19	.745			
Item 30	.734			
Item 12	.685			
Item 24	.659			
Item 31	.641			
Item 17	.592			
Fun (α=.851)		0.850	0.420	11.783% (4.595)
Item 41	.771			
Item 39	.726			
Item 61	.699			
Item 51	.686			
Item 59	.666			
Item 55	.541			
Item 53	.534			
Socialization (α=.808)		0.829	0.451	7.201% (2.808)
Item 5	.743			
Item 7	.720			
Item 4	.710			
Item 3	.699			
Item 13	.638			
Item 8	.483			
Recreation-Escape (α=.811)		0.807	0.458	4.931% (1.923)
Item 40	.777			
Item 37	.696			
Item 48	.680			
Item 38	.644			
Item 32	.568			
Knowledge of the game(α=.741)		0.688	0.426	%4.01 (1.564)
Item 62	.694			
Item 63	.691			
Item 56	.565			
Interest in sport (α=.698)		0.671	0.407	3.184% (1.242)
Item 6	.715			
Item 33	.646			
Item 35	.542			
Being in the game (α=.784)		0.711	0.553	2.831% (1.104)
Item 1	.802			
Item 2	.681			
TOTAL (α=.920)				**58.320%**

The structure obtained after EFA was tested with CFA. Model fit values of the model as the result of CFA are as follows; [(χ^2 = 1028.842, df = 569, χ^2/df = 1.808, RMSEA = .05, GFI =

.88, AGFI = .86, CFI = .98, IFI = .90, and TLI (NNFI) = .97]. The path diagram of SBMS is presented in Fig. 1.

According to the results obtained, it was determined that SBMS model fit index values are among the reference values and are at an acceptable level (Hair et al. 2014; Kline 2016). To test the discriminant validity, interdimensional correlation coefficients were examined. Kline (2016) states that the relevant values must be below .85 to ensure discriminant validity. Accordingly, it was determined that the correlations between the factors changed between
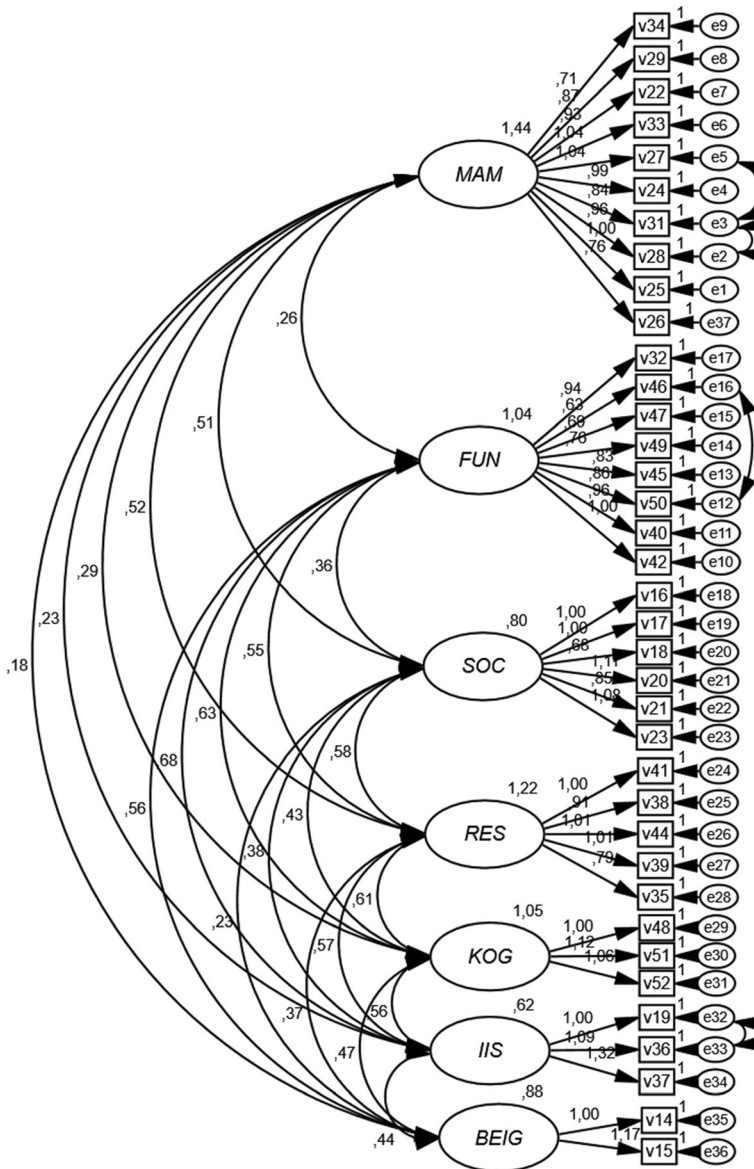

Fig. 1 The model of SBMS (MAM: Make Money; FUN: Fun; SOC: Socialization; RES: Recreation/Escape; KOG: Knowledge of the game; IIS: Interest in sport; BEIG: Being in the game)

(r= .091) and (r= .518) and had a valid value. In the CFA stage, it was determined that the total Cronbach's alpha value of SBMS was (α = .934) and the Cronbach's alpha value of the dimensions vary between (α=.757) and (α=.932). Item total correlation values, however, vary between (.351) and (.631). The factor loadings of SBMS for CFA ranged between (.422) and (.817). Correlation coefficients and Cronbach's alphas of CFA seen as Table 2.

According to all these data, it as determined that SBMS has an adequate construct validity and it can be used to determine the sports betting motivations of the individuals in Turkey.

Study 2 (Adaptation and Validation of PSBSI, from the PGSI by Ferris and Wynne 2001)

Participants and Procedure

Gambling behaviors above normal were evaluated for the first time in the context of "Behavioral Addiction" with DSM-V (2013). According to this, excessive and unusual behavior of sports betting, which is considered as a form of gambling, can also be considered as "sports betting addiction" within the scope of behavioral addiction. However, sports betting has its own unique dynamics compared to other forms of gambling. For that, PSBSI was adapted from the index developed by Ferris and Wynne (2001), the original language of which is English and the name is Problem Gambling Severity Index (PGSI). The PGSI assesses problem gambling behaviors and detrimental social consequences in nonclinical settings and it is purposed to be adopted to assess the general population. In the PSBSI adaptation process, all the expressions related to "gambling" and "bet" in the index were replaced with the phrase "sports betting" or adapted to sports betting. Also, in each question in the index, the word "gambling" has been changed to "sports betting" to describe sports betting. For example, the question "Have you felt that you might have a problem with gambling?" has been changed as "Have you felt that you might have a problem with sports betting?" The questions that did not describe gambling were made to describe sports betting. For example, the question "Have you bet more than you could really afford to lose?" has been changed as "Have you bet on sports more than you could really afford to lose?". All questions in the index are adapted accordingly and also the note "Thinking about the last 12 months" in the original index has been changed to "Thinking about the last 12 months of your sports betting behaviour." The index was renamed to Problem Sports Betting Severity Index (PSBSI). After these changes were made, the method of Brislin (1970), which is widely used in intercultural research, was used in the

Table 2 Correlation coefficients and Cronbach's alphas of CFA

Factor	1	2	3	4	5	6	7
1. Make Money	-						
2. Fun	.094	-					
3. Socializatiom	.255**	,140*	-				
4. Res/Escape	,299**	,313**	,345**	-			
5. Knowledge of the game	,146*	,503**	,341**	,340**	-		
6. Interest in sports	,101	,518**	,293**	,234**	,399**	-	
7. Being in the game	,002	,499**	,091	,092	,199**	,332**	-
Cronbach's alpha (α)	.932	.853	.830	.881	.838	.757	.839

** $p < 0.01$, * $p < 0.05$

translation study of the Index to Turkish. PSBSI, as the original index, comprises nine items and rated on a four-point scale 0 (never) to 3 (almost always). The final score ranges from 0 to 27, and can be interpreted as follows: 0 = non-problem sports bettors; 1–2 = low-risk sports bettors; 3–7 = moderate-risk sports bettors; and 8 and more = problem sports bettors. Within the scope of validity reliability, as for "Study 1" data were collected both online and face-to-face from the sports fans (n=251, 229 males and 22 females, M_{age} = 28.86 years; SD = 10.41; 91.23% male, 8.77% female; range 18-57) who bet on sports regularly for last 12 months. Also, EFA, CFA, and Cronbach's alpha (α) internal consistency reliability coefficient, were examined.

Data Analysis

The data analysis was as for Study 1.

Results

After the adaptation and translation process both EFA and CFA conducted to determine whether the factor structure of the scale was a valid model. As for "Study 1" firstly the suitability of the data for factor analysis was examined by the (KMO) coefficient and Barlett's Sphericity Test and it was found that the data set was suitable for EFA (Hair et al. 2014) [(KMO) coefficient = .904, Barlett's Sphericity Test (χ^2) = χ^2 = 1025.627, p < .001)]. The PSBSI Cronbach's alpha indicated very good reliability (α = .901) in the current sample of sports bettors. At this point, no item was required to be deleted. At the end of the factor analysis, a single factor structure with an eigenvalue above 1 emerged. The explained variance value of the single factor structure was determined as 65.558%. Model fit values are as follows; [(χ^2= 42.551, df = 24, χ^2/df = 1.773, RMSEA = .05, GFI = .96, AGFI = .92, CFI = .98, IFI = .98, and TLI (NNFI) = .97]. It was determined that the model fit index values of PSBSI are among the reference values and are at an acceptable level (Hair et al. 2014; Kline 2016). Also, determined that CR (.918) and AVE (.554) values were expected level (Fornell and Larcker 1981). The details of PSBSI are presented in Table 3.

According to all this information, it was determined that PSBSI has similar psychometric features as PGSI and in this study, it can be used to determine the risks of individuals' sports betting addiction.

Table 3 Validity and reliability coefficients of Problem Sports Betting Severity Index

Factor/Item	Factor Loading	CR	AVE	Variance (%)
Item 8	.812			
Item 5	.800			
Item 7	.789			
Item 6	.764	0.918	0.554	65.55%
Item 1	.751			
Item 4	.739			
Item 2	.714			
Item 3	.700			
Item 9	.612			
Cronbach's alpha (α)	.901			

Study 3 (Exploratory Study, Effects of Sports Betting Motivations on Sports Betting Addiction)

Participants and Procedure

Judgement sampling was used in this study and the data were collected between January 2019 and May 2019 both online and face-to-face. Bettor behavior is closely related to fan behavior due to factors such as active-passive participation and follow-up (Paul and Weinbach 2010). Accordingly, at the data collection stage, the participants were told that they would be included in the research if they were primarily interested in sports and bet on sports regularly. The participants who fulfilled both conditions were briefly informed about the study and asked whether they volunteered to participate in the study. Accordingly, to determine the effects of sports betting motivations on sports betting addiction risk, data were collected from sport fans (n=643, 574 males and 69 females, M_{age} = 27.39 years; SD = 7.89; 89.2% male, 10.8% female; range 18–51) who live in Turkey and bet on sports regularly for last 12 months. No compensation was given for participating in the study. Also, anonymity of the participants was guaranteed (no personal data were collected). After collecting the data, multi-linear regression analysis was carried out to determine the effects of individuals' sports betting motivations on the risk of sports betting addiction. Before the analyzes, multicollinearity values were examined to determine the suitability of the data set and as well as to test the assumptions of the regression analysis. SPSS version 20 and AMOS version 24 programs were used to analyze the data. Before starting all studies, the study was approved by the research team's university Ethics Committee.

Instruments

Data was collected through SBMS and PSBSI. In addition, demographic information such as age, gender, income level, education level of the participants, and information on which platform and how often they bet on sports were collected.

Sports Betting Motivation Scale (SBMS)

SBMS has been developed within the scope of the research and its validity and reliability have been ensured. SBMS, which has a 5-point Likert-type structure from "strongly disagree" to "strongly agree," consists of 7 dimensions and 37 items. Dimensions and sample items are as seen in Table 4.

Problem Sports Betting Severity Index (PSBSI)

PSBSI was used to determine the problem sports betting levels (addiction risk) of the participants. The PSBSI is an adapted and validated Turkish version of the Problem Gambling Severity Index (PGSI; Ferris and Wynne 2001) where the words "gambling" and "bet" was replaced with the words "sports betting" and "sports bet." The PSBSI comprises nine items and is rated on a four-point scale from 0 (never) to 3 (almost always). Total scores range from 0 to 27. Participants were categorized into one of the following groups based on the PSBSI score: 0=non-problem sports bettors; 1–2=low-risk sports bettors; 3–7=moderate-risk sports bettors; and 8+ = problem sports bettors.

Table 4 SBMS dimensions and sample items

Dimensions	Samples
Make Money	"I bet on sports to buy the things that I want to buy."
	"I bet on sports to make easy money."
Fun	"It's fun to try my luck with sports betting."
	"I bet on sports because it is fun"
Socialization	"Sports betting is a good reason for me to gather with my friends."
	"We gather with people around me to bet on sports."
Recreation / Escape	"Sports betting helps me stay away from my concerns."
	"Sports betting helps me get away from the routine of everyday life."
Knowledge of the game	"I bet on sports to prove myself in sports competitions."
	"I bet on sports to see if my predictions about sports betting are correct."
Interest in the Sports	"I bet on sports because I love football."
	"I bet on sports because I love sports competitions."
Being in the game	"It's enjoyable to watch the sports competition I bet on."
	"It's exciting to bet on the sports competitions I watch."

Data Analysis

In the present study, it was examined with regression analysis which motivations of individuals to bet on sports are related to sports betting addiction risk and how these motivations affect the risk of sports betting addiction. Accordingly, the multi-linear regression analysis was performed with each dimension of SBMS as the independent variable and PSBSI as the dependent variable. Prior to the analysis, it was tested with multiple linear correlation analysis to test the meeting of the assumptions of regression analysis, and the values of Tolerance Index (Ti) and Variance Inflation Factor (VIF) were examined. Participants' demographic variables such as age, income level, and education, their platform preferences for sports betting and frequency of sports betting, as well as percentage-frequency and arithmetic averages for the scores received from the sports betting addiction index were examined. SPSS version 20 and AMOS version 24 programs were used in the analysis of the data.

Results

Descriptive Statistics

As can be seen in Table 5, the vast majority of sports bettors participating in the survey are male (89.3%). The most intense age ranges are 18–21 (32.2%) and 22–28 (32.7%), while the most intense groups in education level groups are high school (55%) and undergraduate (41.7%). While the majority of the participants have medium (22.2%) and high (35.5%) levels of income, most of them bet on sports via the websites (54.1%). Finally, most of the sports bettors stated that they bet on sports 2-3 times a week (43.7%).

The PSBSI score of all (100%) sports bettors participating in the survey is between 9-27. While most of the participants' score is seen to be 9 (12.4%), there is no dominant distribution among the other scores ($M_{PSBSI} = 16.88$, $SD = 5.57$; range = 9 to 27). Accordingly, it can be stated that all participants are at risk of sports betting addiction (see Table 6).

Table 5 Participants' demographic

Demographic	n	(%)
Gender		
Male	574	89.3
Female	69	10.7
Age		
18-21	207	32.2
22-28	210	32.7
29-35	109	17.0
36-41	57	8.9
42 and older	60	9.3
Education		
High School	357	55.5
Undergraduate	266	41.4
Graduate	20	3.1
*Income level**		
Low	143	22.2
Middle	271	42.1
High	229	35.6
Sports Betting Platform		
Betting Shops	295	45.9
Websites	348	54.1
Frequency of Sports Betting		
Every day	102	15.9
Once a few days (2-3 per week)	279	43.4
Once a week	161	25.0
Once in a couple of weeks	101	15.7

Note. * Based on Turkish Statistical Institute (TurkStat), Income and Living Conditions Survey Regional Results (2018) statistics

Table 6 PSBSI scores of the participants

Problem Sports Betting Severity Index Scores*	n	%	mean, sd
9.00	80	12.4	*16.88; 5.57*
10.00	46	7.2	
11.00	44	6.8	
12.00	32	5.0	
13.00	21	3.3	
14.00	20	3.1	
15.00	29	4.5	
16.00	30	4.7	
17.00	26	4.0	
18.00	30	4.7	
19.00	35	5.4	
20.00	41	6.4	
21.00	42	6.5	
22.00	42	6.5	
23.00	37	5.8	
24.00	31	4.8	
25.00	29	4.5	
26.00	11	1.7	
27.00	17	2.6	

Note * The final score ranges from 0 to 27, and can be interpreted as follows: 0 = non-addictive sports bettors; 1–2 = low-risk sports bettors; 3–7 = moderate-risk sports bettors; and 8 and more = problem sports bettors

Regression Analysis

A multi-linear regression analysis was performed in order to determine which sports betting motivations have a predictive effect on sports betting addiction risks. The relevant model is as shown in Fig. 2. and the regression analysis results are as shown in Table 8. Whether the necessary assumptions were met have been examined via correlation analysis, Tolerance Index (T_i) and Variance Inflation Factor (VIF). Accordingly, correlation analysis was first examined to determine for multicolinetary (see Table 7).

As seen in Table 7, although there are positive relations between the dimensions of SBMS, it is seen that the correlation values change from $r = .004$ to $r = .644$. Accordingly, correlation values were determined to be at the expected level (Kline 2016). In addition, the lowest T_i value was found to be .46 and the VIF values are from 1.487 to 2.172. T_i values are expected to be above 0.2 and VIF values are expected to be below 4 (Hair et al. 2014). Accordingly, it was determined that there is no multicolinetary regarding the data.

As can be seen in Table 8, it was found that the results of multi-linear regression analysis performed to examine the level of sports betting motivation factors predicting the risk of sports betting addiction are statistically significant [$F=31,123$, $p<.01$]. As the result of the model, when all independent variables and standardized regression coefficients (β) are analyzed, it was found that the positive predictors are make money ($\beta = .267$, $p<.01$), socialization ($\beta = .219$, $p<.01$) and being in the game ($\beta = .148$, $p<.01$), and the negative predictor is fun ($\beta = -.306$, $p<.01$). Rec/Escape ($\beta = .092$, $p> .05$), knowledge of the game ($\beta = .025$, $p> .05$) and interest in sport ($\beta = .074$, $p> .05$) factors have been determined not to be significant predictors. Also, the adjusted R^2 value ($\Delta R^2 = .247$) reveals that approximately 25% of the risk of sports betting addiction can be explained by the factors that make up the sports betting motivations.
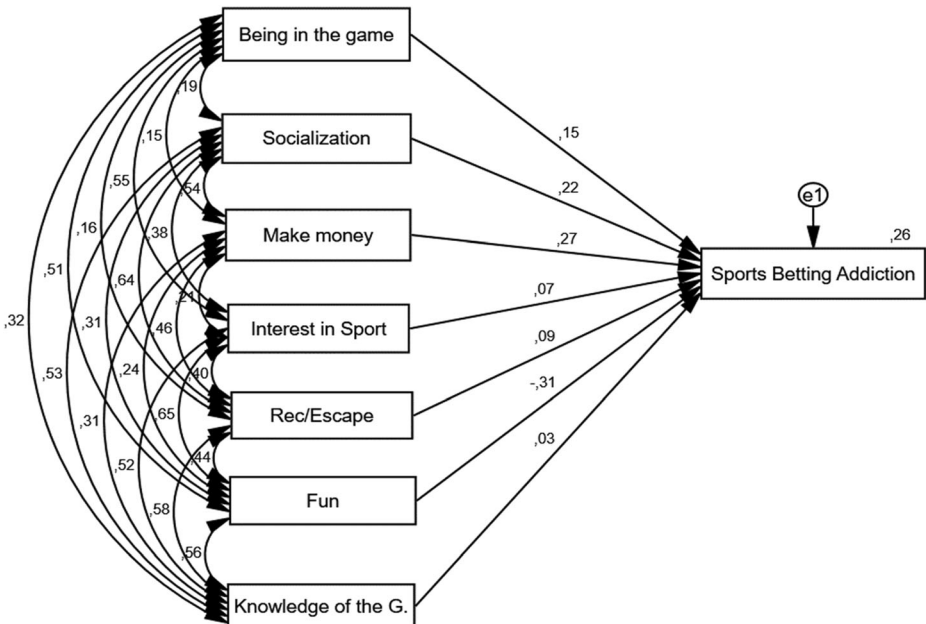

Fig. 2 The effect model of sports betting motivations on the risks of sports betting addiction

Table 7 Correlations among dimensions of SBMS and PSBSI

Measures	1	2	3	4	5	6	7	8
1.Sports Betting Addiction	-							
2.Make Money	,400**	-						
3.Fun	,004	,239**	-					
4.Socialization	,397**	,544**	,313**	-				
5.Rec/Escape	,292**	,464**	,436**	,644**	-			
6. Knowledge of the game	,190**	,305**	,561**	,532**	,579**	-		
7. Interest in sport	,146**	,207**	,651**	,384**	,404**	,522**	-	
8. Being in the game	,137**	,149**	,508**	,190**	,164**	,316**	,551**	-

$**p < .01$, two tailed

Discussion

Addiction, which has been defined as the compulsive uncontrolled use of habit-forming drugs for many years, has been discussed in a non-chemical form within the scope of behavioral patterns as of the 90's and it has been stated that all kinds of excessive behaviors or activities carry risks that may cause addiction (Griffiths 1996; Marks 1990). Gambling behaviors are at the top of these behaviors (Griffiths 1995; Griffiths 1996). It is thought that sports bets can be evaluated as sports betting addiction in the context of behavioral addictions along with their unique qualities. Based on this idea, this research was conducted to determine which sports betting motivations affect sports fans' risk of sports betting addiction.

According to the results of the research, it was determined that the motivations of "make money," "socialization," and "being in the game" are positive predictors of the risk of sports betting addiction and the "fun" factor is a negative predictor. "Recreation/escape," "knowledge of the game," and "interest in sport" motivations were not found to be significant predictors of the risk of sports betting addiction.

According to the results obtained, it can be stated that the risk of sports betting addiction will increase as individuals' motivation to make money, socialization, and being in the game increase on sports betting. However, the inverse relationship between the risk of fun and sports betting addiction reveals that the risk of sports bet addiction will decrease as individuals' motivation of fun on sports betting increases.

Individuals who bet on sports generally approach sports activities in two economic aspects, namely investment and consumption. While the consumption approach involves the benefit and satisfaction of participating in/watching or following sports events, there is an expectation of a higher return and increasing the welfare of individuals in the investment approach by

Table 8 Model of multiple linear regression for variables predicting sports betting addiction risks

Variable	B	SE	β	t	p
Make money	1.695	.265	.267	6.397	.000**
Fun	-2.450	.404	-.306	-6.069	.000**
Socialization	1.292	.298	.219	4.335	.000**
Rec/Escape	.555	.302	.092	1.836	.067
Knowledge of the game	.148	.288	.025	.516	.606
Interest in sport	.487	.331	.074	1.471	.142
Being in the game	.877	.254	.148	3.453	.000**

$R=.505$, $R^2=.255$, $\Delta R^2=.247$, $F=31.123$, $**p< 0.001$

risking more money (Gordon et al. 2015; Humphreys et al. 2013; Ignatin 1984; Mahan III et al. 2012). The motivation of making money in SBMS represents the investment approach. Similar studies conducted in different countries are in line with these research results. Fang and Mowen (2009), concluded that the motivation of individuals living in the USA to make money is one of the top motivation elements of sports betting. While Koross (2016) and Okoti (2019), state that the motivation of university students in Kenya to bet on sports is making money, whilst Lamont and Hing (2020), find the same results for young men in Australia. They find that bettors believe that they can make money much faster and easier than they do in their daily life thanks to sports betting. Similar statements have also emerged in interviews while developing the scale for this study. Lee et al. (2014), revealed in their research on sports betting in South Korea that motivation of making money can lead to obsessive passion and may have negative consequences. López-Gonzalez et al. (2019b), however, found that in Spain, sports bettors' motivation is making money but they believe that this is not something that could lead to addiction. This also reveals that individuals' motivation to make money carries a serious risk of addiction over time.

Sports betting offers individuals an exciting subjective experience of socializing, with the feeling of belonging to a group and being part of the community (Wann 1995; Wann et al. 2015; Labrador and Vallejo-Achón 2020). Studies (Fang and Mowen 2009; Funk et al. 2006; Hing et al. 2016; Neighbors et al. 2002), in line with the results obtained in the study, indicate that some sports fans and sports bettors bet on sports with the intention to participate in activities with other individuals and spend time with friends. This can also be explained by social identity theory. Social identity is shared with others and provides a basis for shared social action (Reicher et al. 2010). In addition, it is stated in social identity theory that people shape their behaviors with their motivation to achieve and maintain a positive self-esteem (Tajfel and Turner 2010). For some bettors, the importance and construction of social identity is more important than the pleasure of sports betting (Lamont and Hing 2020). According to the social identity theory, individuals may need to continue these actions in order to stay in social groups to which they think they belong. At this point, although individuals who bet on sports and are involved in various social activities related to it feel themselves valuable and important in the group, the possibility of individuals feeling alone outside the group may cause such activities to become habitual as a result of repeated behaviors. Behavioral addictions mean situations that increase personal or social problems and lead to lack of control over behavior as a result of repeated actions (Petry 2016; Marks 1990). In this context, the risks of sports betting addiction of individuals who bet on sports with the purpose of socialization can be evaluated from this perspective. Also, with the development of technology, socialization activities where sports betting is seen as a tool takes place in online environments as well. Within the scope of the study, the majority of individuals (54%) stated that they bet on sports via internet platforms. Sports bettors gather in social media, forums, and similar mediums, making predictions and discussions about the results of sports competitions (Gainsbury et al. 2015; Miller et al. 2016; Wen et al. 2016). This information also shows that the relationship between socialization motivation and sports betting addiction is a situation that needs to be evaluated in a different perspective.

The motivation of "being in the game" entirely focuses on the experiential benefit of consumption for sports betting. The main reasons for the being in the game motivation of the individuals are stated as the individuals' desire to add excitement to the competition that they will watch live or that they watch the competition to further increase their excitement and earning after betting on sports (Humphreys et al. 2013; Lamont and Hing 2020; Paul and

Weinbach 2010). Similarly, Nelson et al. (2007) and Wann (1995) stated that sports fans bet on sports for the purpose of being in a game. In all cases, sports betting is in the position of a complementary activity of sports consumption. Due to the place of sports betting within the sports industry, everybody who bets on sport, whether sports fan or not, has become a sports consumer. (Li et al. 2012). Accordingly, sports bettors can be referred to as sports consumers as well. Sport consumption can be referred to as psychological or physical reactions that occur before, during, or after use of a concrete or abstract sports good or service. While psychological reactions include perceptions, emotions, and assessments of sports experience, physical reactions include physiological reactions of stimulation and stress due to sports experience (Funk et al. 2016). While the mentioned consumption for sports betting refers to pre-competition bets or long-term bets, the consumption during the competition can be referred to as in-play betting. As stated by Funk et al. (2016), psychological or physical reactions that occur during or after consumption may be severe enough to cause sports betting addiction. With the development of new media technologies, individuals can bet on sports anytime, anywhere via their mobile devices or computers (Deans et al. 2016; Hing et al. 2017). Researches (Hing et al. 2016; Hing et al. 2018; Killick and Griffiths 2019; Lopez-Gonzalez and Griffiths 2017; López-Gonzalez et al. 2017; López-Gonzalez et al. 2020; Russell et al. 2019a) show that live bets are more harmful than pre-match or long-term bets and increase the risk of addiction in individuals. In addition, positive or negative experiences (motivation to win or gain back what is lost) created by sports betting with the motivation of being in the game can motivate individuals to repeat the behavior (LaBrie et al. 2007). At this point, the results showing that the bets to increase the excitement of the match will increase the addiction risks of individuals and are similar to the results of this study.

In the research, it was determined that the motivation of fun is a significant negative predictor of the risk of sports betting addiction. However, it was determined that recreation-escape, knowledge of the game, and interest in the sport dimensions are not significant predictors of sports betting addiction. Lee et al. (2014) concluded that individuals who bet on sports with motivation of recreation-escape and excitement achieve positive outcomes such as stress reduction, relaxation, and so on. The conclusion that the risk of addiction will decrease as individuals' motivation of fun increases, indicates that individuals who bet on sports for recreation and fun either watch the risk consciously or bet with amounts that they can afford to lose. Morris (2004) states that individuals who bet on sports with the purpose of excitement and fun usually bet with small amounts and their addiction risks are low. Abbott et al. (2018) similarly state that addiction of the recreational bettors can be controlled and they are in the low-risk group. Accordingly, it can be thought that individuals' conscious preferences and expectations about possible outcomes are the basis for the fun motivation for sports betting. Sports betting with fun motivation is a form of entertainment comparable to the most popular group activities such as playing sports, listening to music, or attending social meetings (Labrador and Vallejo-Achón 2020; Pokerjoe 2016). At this point, it can be stated that the results of the research have similar characteristics with the previous research. Similar statements can be said for knowledge of the game and interest in the sport as well. Other studies state that individuals who bet by trusting their knowledge and who have the "knowledge of the game" motivation as referred to in SBMS, bet only for the branch/competition they know based on their skills and knowledge (Abbott et al. 2018; Labrador and Vallejo-Achón 2020; Morris 2004). In this context, it is an expected situation that the knowledge of the game factor is not one of the predictors of sports betting addiction.

Limitations and Future Research

The current research is not, however, without limitations. The primary limitation to the generalization of this study is about the sampling characteristics. The present study comprises Turkish sports bettors only. While the data provided some important insights concerning the motivations and problem sports betting among Turkish bettors, these findings cannot be generalized to all sports bettors. To confirm the findings reported here and to achieve more generalizable results, larger and more representative samples from Turkey and other countries are needed so that the findings can be examined and compared. The second limitation concerns the present study data relied on self-report data that may be subject to various common methods biases including social desirability and memory recall. Hence, caution must be taken in drawing causal or directional conclusions for future studies. And the third limitation is as, in most studies on sport betting and gambling, the majority of the participants in the present study were men. Therefore, it is considering important to increase the number of female population in future studies. The new technologies developing as the pioneer of change today have not only penetrated daily life, but have also changed the behavior, attitude, and motivation of the bettors and transformed them. In this context, current handling of sports betting addiction risks along with the motivations of sports betting individuals specific to sports betting is valuable in that it sheds light on scientific studies for further research. In future studies on sports betting, it is deemed important to consider the motivations of sports betting and the effects on addiction levels obtained in this study. Because of cognitive bias, bettors generally perceive that they do not carry a risk of addiction by internalizing their sports betting behaviors (Gökce Yüce et al. 2017; López-Gonzalez et al. 2019b). For this reason, awareness-raising activities should be carried out through all media tools, especially sports betting websites and betting shops, regardless of the motivation variable, that sports betting can be addictive and cause psychological, social, and economic harm to individuals. It should be emphasized, however, that sports betting should not be regarded as an income channel. Sports betting platform providers can employ frequent mandatory short questionnaire forms about betting motivations. Besides, bettors can be subjected to a classification according to their motivations using personal information processing algorithms or similar methods according to their betting habits and the amount they spend. As a result, some limits may be imposed on bettors by public policy, or awareness can be raised by repeated warnings during betting. All these can have a deterrent effect for sports betting addicts. Also, by comparing the profiles and sports betting motivations of bettors under the risk of sports betting addiction with their personality variabilities, it can be examined whether they differ or not. Thus, the negative results that may arise in the future can be minimized by considering their personality characteristics. Although sports betting has its own characteristics, it is directly affected by culture and geography. For this reason, studies can be conducted in different countries to determine the typologies of sports bettors, comparisons can be made and some universal evaluation criteria can be developed.

Conclusion

The findings demonstrate that the SBMS appears to be a reliable and valid instrument for assessing sports betting motivations. Also the findings provided PSBSI validity for the use of the Turkish and sports betting adapted version of PGSI. As a conclusion main study, it has been determined that the motivations for make money, socialization, and being in the game

carry the risks that can lead to sports betting addiction, and that individuals may be adversely affected by this situation as a result of the fact that these motivation elements lead the behavior in a frequent and repeated manner. However, recreation/escape, knowledge of the game, and interest in sports and entertainment motivations were found to have no meaningful effect to increase the risk of sports betting addiction. Besides, the negative inverse relationship between entertainment motivation and sports betting addiction risk revealed that fun motivation is an element that can minimize sports betting addiction risk. Therefore, it is determined that the motivations of making money, socialization, and being in the game should be controlled to prevent possible negative outcomes in individuals.

Declarations

Ethics Approval All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000.

Conflict of Interest The authors declare no competing interests.

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