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Development and Validation of the Attitude Scale towards Indoor Football (Astroturf)

Halı Saha Futbol Tutum Ölçeğinin Geliştirilmesi ve Geçerlilik Çalışması

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ABSTRACT

Indoor football (astroturf football) is a popular sport, particularly among men. This study aims to develop a valid and reliable measurement tool to assess the attitudes of individuals playing indoor football. For this purpose, an item pool was initially created. During the development process, relevant literature was reviewed, observations were made of individuals playing indoor football, and expert opinions were consulted to formulate the statements. Based on expert feedback, necessary eliminations, mergers, and revisions were made to the item pool. The final 36-item form was administered to 491 participants, and the data were analyzed using Exploratory Factor Analysis (EFA). Based on the EFA results, Confirmatory Factor Analysis (CFA) was conducted on the resulting structure. EFA results indicated a two-factor structure consisting of 18 items. The first factor, labeled "Interest," included 11 items, while the second factor, labeled "Discipline," comprised 7 items. These two factors together explained 59.139% of the total variance. The two-factor structure derived from the EFA was confirmed by the CFA. The CFA results indicated that the model met good and acceptable fit indices. Reliability analyses of the scale and its subdimensions were performed, and the stability coefficient was calculated. The internal consistency coefficients of the scale were .941 for the Interest dimension, .825 for the Discipline dimension, and .921 for the overall scale. The stability coefficients were .913 for Interest, .782 for Discipline, and .921 for the total score. As a result, a valid and reliable two-dimensional measurement tool was developed to assess the attitudes of individuals playing indoor football.

Keywords: Indoor football, attitudes towards indoor football, interest in indoor football, discipline in indoor football

ÖZ

Halı saha futbolu özellikle erkek bireyler arasında yaygın olarak görülen bir spor branşıdır. Çalışmanın amacı halı saha futbolu oynayan bireylerin tutum seviyelerini tespit etmeyi amaçlayan geçerli ve güvenilir bir ölçme aracı geliştirmektir. Bu amaçla önce madde havuzu oluşturulmuştur. Madde havuzunun oluşturulması sürecinde ilgili literatür taranmış, halı saha futbolu oynayan bireyler gözlenmiş ve uzman görüşüne de başvurarak madde havuzunu oluşturacak önermeler geliştirilmiştir. Önerme listesindeki maddelerle ilgili uzman görüşleri de dikkate alınarak gerekli eleme, birleştirme ve düzeltmeler yapılmıştır. Bu şekilde oluşturulan 36 maddelik form 491 bireye uygulanmış, ortaya çıkan veriler sayesinde Açıklayıcı Faktör Analizi (AFA) yapılmıştır. AFA sonuçlarına göre ortaya çıkan yapı Doğrulayıcı Faktör Analizi (DFA) ile analiz edilmiştir. AFA sonucunda ölçeğin 18 maddeden oluşan iki faktörlü bir yapıya sahip olduğu tespit edilmiştir. Birinci faktörde 11, ikinci faktörde yedi madde bulunmuştur. Birinci faktör ilgi, ikinci faktör disiplin olarak tanımlanmış olup, bu iki faktörün toplam varyansın % 59.139'unu açıkladığı anlaşılmıştır. AFA sonucunda ortaya çıkan iki faktörlü yapı DFA ile doğrulanmıştır. DFA sonuçlarına göre ortaya çıkan yapının model uyum kriterlerini iyi uyum ve kabul edilebilir uyum düzeyinde karşıladığı tespit edilmiştir. Geliştirilen ölçek ve alt boyutları ile ilgili olarak güvenirlik analizleri yapılmış, kararlılık katsayısı hesaplanmıştır. Ölçeğin hesaplanan iç tutarlılık katsayıları ilgi boyutu için .941, disiplin boyutu için .825, toplamı için .921'dir. Ölçeğin kararlılık katsayıları ise ilgi boyutu için .913, disiplin boyutu için .782, toplamı için .921'dir. Sonuçta halı saha futbolu oynayan bireylerin halı saha futboluna yönelik tutum düzeylerini belirlemede kullanılacak iki boyutlu geçerli ve güvenirliği kanıtlanmış bir ölçme aracı geliştirilmiştir

Anahtar Kelimeler : Halı saha futbolu, halı saha futboluna yönelik tutum, halı saha ilgisi, halı saha futbolunda disiplin

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Introduction

Sports contribute significantly to individuals' physical, mental, emotional, and social development. It enhances knowledge, skills, and leadership abilities, offering individuals opportunities for self-discovery and discipline. The concept of physical activity, established with the first human movements, not only serves as an indicator of vitality but also encompasses a comprehensive framework that includes all bodily functions. The process by which humans have come to understand their corporeal structure and acquire in-depth knowledge thereof has enabled a better comprehension of the effects of physical activities on the organism; consequently, over time, physical activity has secured an indispensable role in the field of health (Ağırbaş et al., 2021).

Additionally, sports play a critical role in helping individuals cope with psychological and physiological challenges. Internationally, sports promote friendship and peace while also positively contributing to national economies. A successful sports experience can increase self-confidence (Tatlısu & Kan, 2023). The media's portrayal of sports, individuals' efforts to cope with stress, stay fit, and the achievements in international sports have made sports a significant part of daily life and societal morale. These factors highlight the importance of sports in contributing to societal dynamics (Başer, 1986; Açıkada & Ergen, 1990; Sunay & Saracaloğlu, 2003).

The global significance of sports has transformed it into a crucial sector, emphasizing the importance of athletes, clubs, and countries' success. In this context, athletes' success depends on performing sports in the healthiest and most efficient manner (Bayraktar & Kurtoğlu, 2009). Football plays a crucial role in fostering a healthy and high-performance sports culture. It not only captures widespread attention but also encourages athletes to use creativity to overcome their opponents (Özüak & Çağlayan, 2019). This offers individuals an opportunity to gain practical skills that can be applied not only in football but also in everyday life.

Football has become a focal point in various societies throughout history and has evolved into an essential aspect of daily life (Erdoğan, 2008). With millions of licensed players worldwide, football remains the most popular sport (Aşçı, 2009). Its growing presence in sports continues to captivate large audiences (Göksel et al., 2016). Research shows that football is not just a game but also a professional sport that offers an exciting viewing experience and has significant commercial value. As a continually expanding and evolving form of entertainment, football has emerged as a major industry, exciting millions of fans around the world. Football's global popularity is characterized by emotional expression, passion, and support from dedicated fans, who follow and cheer for their clubs with great hope (Ali, 2013; Yapıcıoğlu, 2002; Acar et al, 2008).

Football functions as a system with its own unique communication mechanisms and institutions, providing entertainment, power, joy, and national pride (Koçer, 2012; Kuyucu, 2014). Additionally, it contributes to the formation of individual identities and fosters interactions between different social identities. Recognized as a global industry, football attracts millions of enthusiasts (Singh &Lamba, 2019).

Football encompasses a series of mechanisms and institutions that function with their own unique communication system and language (Talimciler, 2006). Football is a globally significant sport, offering individuals not only entertainment but also experiences of power, strength, sorrow, joy, national pride, and identity formation. In addition to contributing to the development of personal identities, football facilitates the interaction and encounter of different social identities (Talimciler, 2008). Furthermore, football is widely recognized as a global industry, attracting millions of passionate fans (Göksel & Serarslan, 2015).

Today, football is a sport played by millions of licensed athletes and followed by an even larger audience. It also stands out as a physical activity in which people participate during their leisure time. Football is generally considered a game, and it is widely acknowledged that it has positive impacts on the physical and mental health of young people (Öcalan, 2005).

As a result of the enormous interest in football, scholars and private entrepreneurs in the sports field have made various plans and innovations in this industry. Football is not only enjoyable to watch but also to play. However, with increasing urbanization, access to and utilization of sports fields have become more difficult due to the decreasing availability of open spaces suitable for sports activities. At this point, indoor football fields, or astroturf fields, have emerged. These fields are

covered with a special surface and surrounded by wire fences, designed specifically for playing football.

Artificial surfaces have been developed as a solution that offers durability, versatility, and ease of maintenance, while also being suitable for indoor facilities. The lighting of fields and the use of synthetic surfaces in sports facilities have significantly increased playing hours and the revenues generated. Compared to natural grass, artificial surfaces are more resistant to seasonal weather conditions, offering continuous use (Drakos et al., 2013). Most of these facilities are operated by private entrepreneurs.

Astroturf fields have become a popular option for sports enthusiasts to engage in activities like playing football several times a week. In Turkey, astroturf fields are often the first choice for amateur athletes when they want to play football. These facilities have not only contributed to the widespread practice of the sport but also provided a more accessible environment for sports lovers, enhancing the overall football-playing experience.

Astroturf fields are typically preferred by individuals who wish to spend their free time playing football after work, especially in the evening hours. Today, these fields have become indispensable spaces for football, thanks to the improved facilities they offer (Dogar & Aydinoglu, 2019). The reasons for the popularity of astroturf fields include the following:

- Work-related stress: The intense work schedules lead individuals to astroturf fields in the evening to relax and engage in physical activity.

- Increased urbanization and reduced physical activity spaces: As urbanization increases, the availability of suitable spaces for sports decreases, thus raising the importance of astroturf fields.

- Increased use of technology and reduced social interaction: The growing dependence on technology has led to a decline in social interaction, and astroturf fields provide a social environment to balance this effect.

- The demand for safe and comfortable facilities: As society becomes more aware, the demand for safe and comfortable spaces for sports has grown, making astroturf fields a preferred option (Dogar & Aydinoglu, 2019).

These factors are critical in enhancing the functionality of astroturf fields and influencing individuals' preferences for sports activities.

This study identifies a gap in the availability of a measurement tool to assess the attitudes of individuals playing indoor football. Currently, there is no scale in the existing literature that can be used to evaluate the attitudes of indoor football players. Therefore, this research is expected to fill this gap in the literature and make a meaningful contribution to the field.

The aim of this research is to develop a valid and reliable measurement tool to systematically assess the attitude levels of individuals who play indoor football. The scale to be developed will be used to deeply understand and evaluate the attitudes of indoor football players toward their sports activities. This scale aims to provide comprehensive information regarding individuals' perceptions, motivations, experiences, and overall attitudes toward indoor football, thus offering a valuable tool for researchers and sports managers. Consequently, this study not only aims to develop a measurement tool but also to serve as a foundational resource for understanding general attitudes toward indoor football, thereby making a significant contribution to the academic literature.

Methods

Research Model

This study is a scale development study. Following the guidelines proposed by DeVellis & Thorpe (2021), key steps in the scale development process include defining the behaviors to be assessed, generating an item pool, selecting a measurement method, consulting with experts, administering the scale to a sample group, conducting item analysis, and finalizing the scale based on the results. These steps ensure that the developed scale is both reliable and valid.

Data were collected from 491 participants, including university students and individuals from different age groups who had the potential to play indoor football. The initial 55-item list was piloted on 129 individuals, and after expert review and necessary revisions, the item list was reduced to 36 items.

Item Pool Development

During the scale development process, the attitudes and behaviors related to indoor football, which the scale would focus on, were first identified. The determination of these behaviors was based on a review of the relevant literature, interviews with individuals playing indoor football, and observations related to the game. Within this scope, the behaviors observed before, during, and after the game were identified, and a list of statements was created. The determined statements focused on attitudes and behaviors toward indoor football. Initially, a draft list of 55 items was developed and, as De Vellis (2017) suggested, was administered to 129 individuals for a pilot study. Based on the feedback from the pilot test and expert opinions, the list of 55 items was reduced to 36 items after necessary eliminations, mergers, and revisions. This draft form consisting of 36 items was administered to 491 participants, and the collected data were analyzed using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) to finalize the scale.

Data Collection

The data were collected from volunteers using written forms. The participants mainly consisted of university students, but individuals with the potential to play indoor football were also included. Also, Ethical Committee Approval for this study was taken from Erzincan Binali Yıldırım University Human Research Health and Sports Science Ethics Committee with a decision dated 29 March 2024 and numbered 03/11. Verbal consent was obtained from all the participants.

Data Analysis

EFA was conducted to determine the structure of the draft scale. The theoretical structure identified through EFA was then tested using CFA. Cronbach's Alpha was calculated to determine the internal consistency of the scale, and test-retest methodology was used to assess the stability coefficient. The analyses related to EFA were conducted using a statistical package program for social sciences. Bartlett's Test was used to determine whether the data followed a multivariate normal distribution, and the correlation coefficients were examined to assess the linear relationship. CFA analyses were performed using the AMOS software.

Results

EFA Findings: In this context, the suitability of the data for factor analysis was assessed (Karagöz, 2017). For this evaluation, correlation matrices in the dataset were examined, and the results of Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) test were calculated (Table 1). Bartlett's test determines whether the data come from a multivariate normal distribution. A high test result increases the likelihood that the results are significant (Tavşancıl, 2002). The null hypothesis (H0) of "the correlation matrix is an identity matrix" should be rejected through Bartlett's test. The analysis results showed that H0 was rejected ($X^2 = 5366.567$, df = 153, $p < .001$), confirming that the data followed a multivariate normal distribution. The KMO test measures the adequacy and size of the sample. A value of 0.90 or above is considered very high (Sharma, 1996; Tavşancıl, 2002). The analysis results indicated that the sample size for this study was excellent (KMO = .932).

Table 1.
KMO and Bartlett's Test Results

Kaiser-Meyer-Olkin (Sample Adequacy):		.932
Bartlett's Test of Sphericity Approx.	X^2	5366.57
	df	153
	Sig.	.000

For the developed scale, it is recommended that the difference between two high loadings be at least .01. Items with high loadings on two or more factors are classified as overlapping items and can be excluded from the scale (Büyüköztürk, 2024). According to the analysis results, items with a difference of .1 or less on multiple factors were considered overlapping items. These items were removed from the scale one by one, and the analyses continued. As a result, the number of items in the

scale was determined to be 18. The eigenvalue graph of the Indoor Football Attitude Scale (IFAS) is shown in Figure 1. The eigenvalue is a key coefficient in deciding the number of factors and calculating the variance explained by each factor. In factor analysis, factors with an eigenvalue of one or greater are considered (Büyüköztürk, 2024).

Upon examining Figure 1, it was observed that there were two factors with an eigenvalue greater than one. After removing the overlapping items from the draft scale, the remaining 18-item scale formed a two-factor structure. It was concluded that the two-factor structure of the scale was appropriate. The two-factor structure explained 59.158% of the total variance. The first factor explained 38.02% of the total variance, while the second factor explained 21.119% of the total variance.

Figure 1. Factor Line Graph

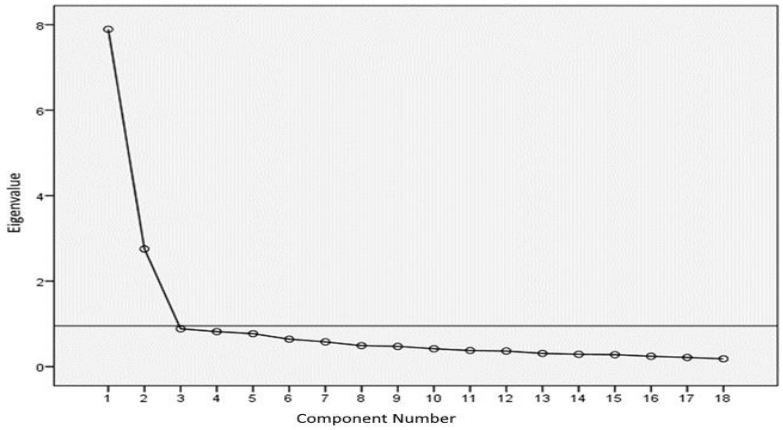

Figure 1. *Factor Line Graph*

Table 2.
Rotated Component Matrix

Component		Item No	New Item No	Statements
Factor 1	Factor 2			
.859		5	1	Playing football always makes me happy.
.834		2	2	I have a great passion for football.
.813		10	3	I am always excited to play football.
.800		6	4	Time flies when I play football.
.791		12	5	I always try to find opportunities to join matches.
.781		3	6	Playing football increases my adrenaline.
.768		9	7	Playing football boosts my self-confidence.
.764		7	8	Playing football is good for my mental health.
.748		8	9	Football helps me cope with stress.
.744		1	10	I cannot imagine a life without football.
.665		4	11	Playing football improves my physical health.
	.773	24	12	Football players' communication with teammates is important.
	.764	26	13	Football should follow game rules.
	.750	25	14	Leadership in football games is important.
	.726	23	15	Warming up for at least 10 minutes before playing is necessary.
	.702	33	16	The cleanliness of the playing area is crucial.
	.674	35	17	Wearing appropriate uniforms is essential.
	.479	16	18	Shower facilities at the end of the match are important.

Explained total variances: First factor = 38.020, Second factor = 21.119, Total = 59.139
Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization

The factor loadings of the 18 items and their distribution across factors are shown in Table 2. The factor loadings of items in the first factor range from .859 to .665, while the loadings in the second factor range from .773 to .479. A factor loading of 0.45 or higher is considered a good criterion for item selection (Büyüköztürk, 2024). The scale, consisting of 18 items in total, explained 59.139% of the variance, with the first factor explaining 38.020% and the second factor explaining 21.119%. Considering the items in the relevant factors, the first factor was named "Interest" and the second factor "Discipline."

Table 3.
Internal Consistency and Stability Coefficients of the Scale

Scale	Item Count	Cronbach's Alpha (N=491)	Stability Coefficient (3-4 weeks, N=50)
Interest	11	.941	.913
Discipline	7	.825	.782
Total	18	.921	.921

The internal consistency and stability coefficients of the scale are shown in Table 3. The internal consistency coefficient for the Interest dimension was calculated as .941, for the Discipline dimension as .825, and for the entire scale as .921. Additionally, the test-retest method was used to determine the stability coefficient. For this purpose, the 18-item scale was administered to 50 individuals with a 3–4-week interval. Based on the results of both administrations, the stability coefficients were calculated as .91 for the Interest dimension, .78 for the Discipline dimension, and .92 for the total score. These results indicate that the scale and its subdimensions are highly reliable (Tavşancıl, 2002; Karagöz & Bardakçı, 2020).

CFA Results

Confirmatory Factor Analysis (CFA) was conducted to test the validation of the scale structure. The results for the goodness-of-fit indices of the 18-item, two-factor scale formed based on Exploratory Factor Analysis (EFA) are presented in Table 4, while the Path Diagram is shown in Figure 2.

Table 4.
Model Fit Criteria (Karagöz, 2017, p. 466; Erkorkmaz et al., 2013) and CFA Results

Model Fit Criterion	Good Fit	Acceptable Fit	Index	Result
CMIN/SD (X^2/df)	0-3	3-5	3.595	Acceptable Fit
AGFI	.90-1.00	.85-.90	.871	Acceptable Fit
GFI	.90-1.00	.85-.90	.901	Acceptable Fit
CFI	.95-1.00	.90-.95	.936	Acceptable Fit
NFI	.95-1.00	.90-.95	.913	Acceptable Fit
NNFI (TLI)	.95-1.00	.90-.95	.925	Acceptable Fit
RFI	.95-1.00	.90-.95	.899	Acceptable Fit
IFI	.95-1.00	.90-.95	.936	Acceptable Fit
RMSEA	.00-.05	.05-.08	.073	Acceptable Fit
RMR	.00-.05	.05-.10	.044	Good Fit
PNFI	.95-1.00	.50-.95	.782	Acceptable Fit
PGFI	.95-1.00	.50-.95	.069	Acceptable Fit
SRMR	0≤SRMR≤0.05	0.05≤RMSEA≤0	.045	Good Fit

The calculated fit values for the scale were found to meet the good and acceptable fit criteria specified in the literature (Karagöz, 2016, p. 974; Karagöz, 2017, p. 466; Hu & Bentler, 1999; Tabachnick & Fidel, 2015; Kline, 2015). According to the CFA results, the X^2/df value was less than 5 and significant (X^2/df = 3.595, $p < .01$), indicating that the model meets the acceptable fit criteria. The RMSEA value is used to measure the approximate fit of the model to the population. Values of .06 or less are considered to indicate good fit, while values between .08 and .06 suggest acceptable fit standards (Hu & Bentler, 1999). The RMSEA value (.073) falls within the acceptable fit range. The Comparative Fit Index (CFI = .936), Incremental Fit Index (IFI = .936), Adjusted Goodness-of-Fit Index (AGFI = .871), and Non-Normed Fit Index (NNFI = .925) were all within acceptable limits. Additionally, the RMR (.044) and SRMR (.045) indices met the good fit criteria. In summary, the calculated CFA results for the scale were found to meet both the good and acceptable fit criteria.

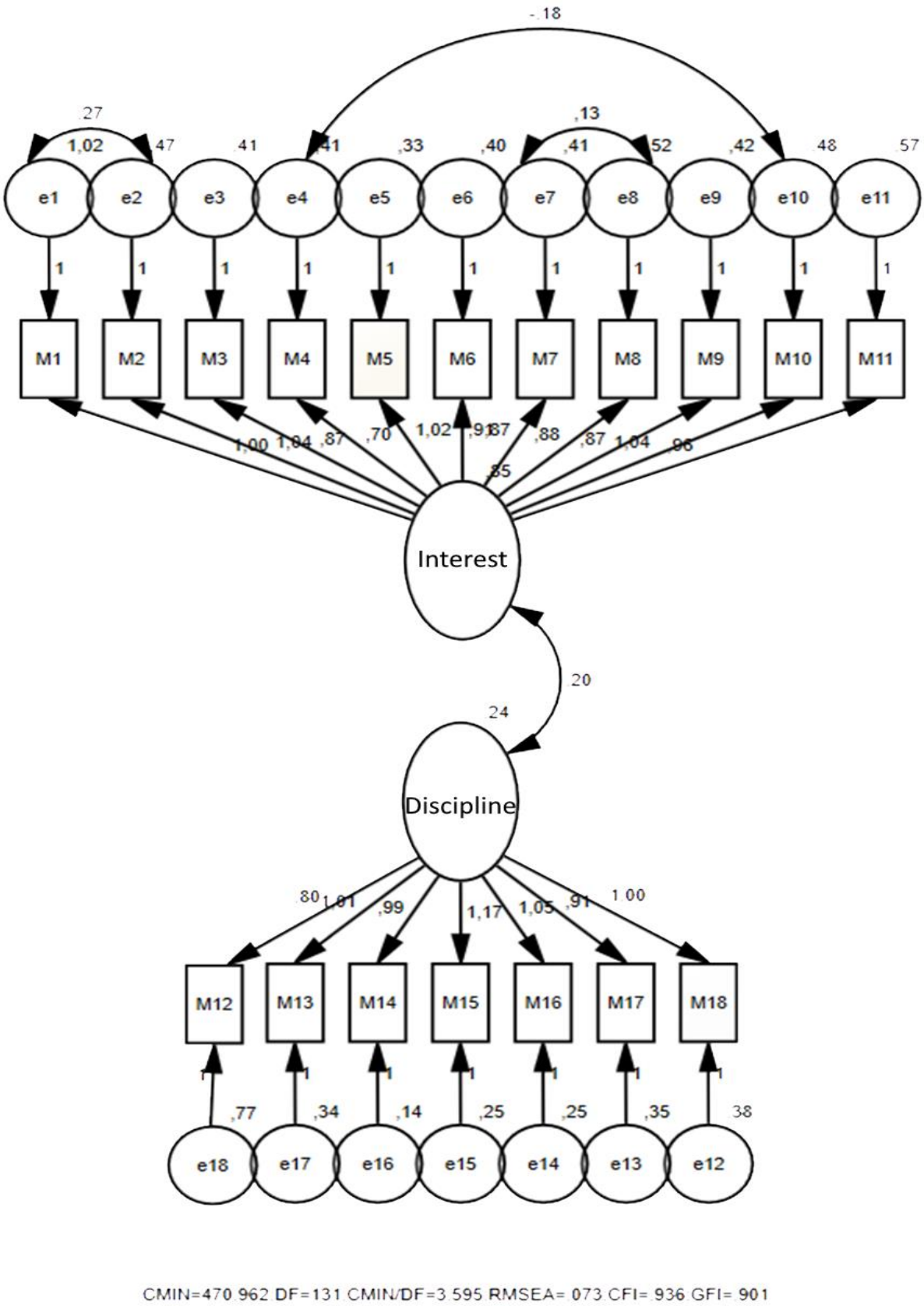

Figure 2. *Path Diagram for the Attitude Scale towards Indoor Football*

Discussion, Conclusion and Recommendations

The aim of this study was to develop a current, reliable, and valid attitude scale to evaluate the attitudes of individuals playing indoor football (astroturf football). To achieve this, attitudes and behaviors related to indoor football were first identified. This process involved reviewing relevant literature, consulting with field experts, interviewing individuals who play indoor football, and observing their behaviors before, during, and after the game. A list of 55 items was generated based on these findings, and, following pilot study results and expert feedback, the list was refined, merged, and reduced to form a draft scale of 36 items.

The 36-item draft scale was administered to 491 participants, and EFA was conducted on the results. Based on the EFA results, the 36-item draft was transformed into an 18-item, two-dimensional structure. The first dimension included 11 items, while the second dimension consisted of seven items. The two-factor, 18-item structure of the scale was validated using CFA. The CFA results indicated that the scale met the acceptable and good fit criteria (Karagöz, 2016, p. 974; Karagöz, 2017, p. 466; Hu & Bentler, 1999; Tabachnick & Fidel, 2015; Kline, 2015).

The internal consistency and stability coefficients for the developed scale and its subdimensions were calculated. The internal consistency coefficients were .94 for the Interest dimension, .83 for the Discipline dimension, and .92 for the entire scale. Stability coefficients for the test-retest method were calculated. The 18-item scale was administered to 50 participants at intervals of three to four weeks. Based on the data obtained, stability coefficients were calculated as .91 for the Interest dimension, .78 for the Discipline dimension, and .92 for the entire scale.

Higher scores on the scale indicate higher levels of attitude towards indoor football, while lower scores reflect lower levels of attitude towards the sport.

Etik Komite Onayı: Bu çalışma için etik komite onayı Erzincan Binali Yıldırım Üniversitesi İnsan Araştırmaları Sağlık ve Spor Bilimleri Etik Kurulundan 29 Mart 2024 tarih ve 03/11 sayılı karar ile alınmıştır.
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Ethical Committee Approval: Ethical Committee Approval for this study was taken from Erzincan Binali Yıldırım University Human Research Health and Sports Science Ethics Committee with a decision dated 29 March 2024 and numbered 03/11.
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References

Acar, M. F., Yapicioglu, B., Arikan, N., Yalcin, S., Ates, N., & Ergun, M. (2008). Analysis of goals scored in the 2006 World Cup. In *Science and Football VI* (pp. 261-268). Routledge.

Açıkada, C., & Ergen, E. (1990). *Bilim ve Spor* (p. 5). Büro Tek Ofset Matbaacılık, Ankara.

Ağırbaş, Ö., Tatlısu, B., & Karakurt, S. (2021). Geçmişten Günümüze Sağlık Alanında Egzersizlerin Rolü. *Spor ve Sağlık Araştırmaları* (Edt: Ağgön, Yıldızhan & Ağırbaş). Akademisyen Kitabevi A.Ş. Ankara.

Ali, A. H. (2013). A statistical analysis of tactical movement patterns in soccer. In *Science and Football (Routledge Revivals)* (pp. 302-308). Routledge.

Aşçı, A. (2009). Futbolcularda kuvvet performansının değerlendirilmesi. 3. *Ulusal Futbol Bilim Kongresi, Bildiri Kitabı s*, *27*.

Başer, E. (1986). *Uygulamalı Spor Psikolojisi* (31st ed., p. 28). MEGSB , Beden Terbiyesi Genel Müdürlüğü.

Bayraktar, B., Kurtoğlu, M. (2009). Sporda Performans, Etkili Faktörler, Değerlendirilmesi ve Artırılması. *Klinik Gelişim Dergisi,16*-24.

Büyüköztürk, Ş. (2024). *Sosyal bilimler için veri analizi el kitabı* (31.Baskı). Ankara: Pegem Yayıncılık.

DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications*. Sage publications.

Dogar, Y., & Aydinoglu, F. (2019). An Evaluation on the Lightings of Artificial Turf Football Fields Owned by Official Organizations and Private Enterprises. *Higher Education Studies, 12*(3), 45-49.

Drakos, M.C., Taylor, S.A., Fabricant, P.D., & Haleem, A.M. (2013). ''Synthetic Playing Surfaces and Athlete Health''. *Journal of the American Academy of Orthopaedic Surgeons, 21*(5): 293–302.

Erdoğan, İ. (2008). Futbol ve futbolu inceleme üzerine. *İletişim kuram ve araştırma dergisi*, *26*(2), 1-58.

Erkorkmaz, Ü., Etikan, İ., Demir, O., Özdamar, K. ve Sanisoğlu, S. Y. (2013). Doğrulayıcı faktör analizi ve uyum indeksleri. *Türkiye Klinikleri Journal of Medical Sciences, 33*(1), 210-223.

Göksel, A. G., & Serarslan, M. Z. (2015). Public relations in sports clubs: New media as a strategic corporate communication instrument. *Corporate Communication*, *2*(2), 275-283.

Göksel, A.G., Pala, A., Caz, Ç. (2016). Futbol Hakemlerinin Boş Zamanlarını Değerlendirme Tercihleri ile İletişim Becerileri Arasındaki İlişkinin İncelenmesi. *Uluslararası Hakemli İletişim ve Edebiyat Araştırmaları Dergisi (UHIVE), 11*, 15-28.

Hu, L. T. ve Bentler, P. M. (1999). Structural Equation Modeling: A Multidisciplinary Journal Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 37-41.

Karagöz, Y. (2016). *SPSS ve AMOS23 uygulamalı istatistiksel analizler*. Nobel Yayınevi.

Karagöz, Y. (2017). *SPSS ve AMOS uygulamalı nitel-nicel-karma bilimsel araştırma yöntemleri ve yayın etiği*. Nobel Yayınevi.

Karagöz, Y. ve Bardakçı, S. (2020). *Bilimsel araştırmalarda kullanılan ölçme araçları ve ölçek geliştirme*. Nobel Yayınevi.

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Fourth edition. Guilford publications, New York.

Koçer, M. (2012). Futbol Derneklerine Üye Olan Taraftarların Şiddet Ve Holiganizm Eğilimlerinin Belirlenmesi: Kayseri örneği. *Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 1*(32), 111-135.

Kuyucu, M. (2014). Futbol Endüstrisinde Sosyal Medya Pazarlama Uygulamaları. *Akademik Sosyal Araştırmalar Dergisi, 2*(7), 161-175.

Öcalan, M. (2005). "Futbolun Toplum Üzerine Etkisi". *Doğu Anadolu Bölgesi Araştırmaları Dergisi, 3*(3): 172-177.

Özüak, A., Çağlayan, A. (2019). Differential Learning as an Important Factor in Training of Football Technical Skills. *Journal of Education and Training Studies, 7*(6), 68-76.

Sharma, S. (1996). *Applied multivariate techniques*. John Wiley and Sons, New York.

Singh, P., & Lamba, P. S. (2019). Influence of crowdsourcing, popularity and previous year statistics in market value estimation of football players. *Journal of Discrete Mathematical Sciences and Cryptography*, *22*(2), 113-126.

Sunay, H., & Seda Saracaloğlu, A. (2003). Türk sporcusunun spordan beklentileri ile spora yönelten unsurlar. *Spormetre Beden Eğitimi ve Spor Bilimleri Dergisi*, *1*(1), 43-48.

Tabachnick, B. G. ve Fidell, L. S. (2015). *Çok değişkenli istatistiklerin kullanımı [Using multivariate statistics]*(Baloğlu, M. Çev.). Ankara: Nobel Yayın Dağıtım. California State University Northridge: Harper Collins College Publishers.

Talimciler, A. (2006). Türkiye'de Futbol ve İdeoloji İlişkisi: Medya'daki Futbol Söylemi Üzerine Bir İnceleme. *Sosyoloji Dergisi,* (15), 129-140.

Talimciler, A. (2008).Futbol Değil İş: Endüstriyel Futbol. *İletişim Kuram ve Araştırma Dergisi, 26*, 89-114.

Tatlısu, B., & Kan, M. E. (2023). Öğretmen Adaylarının Spor ve Farklı Değişkenler Açısından Zekâ Oyunlarına Karşı Tutumlarının İncelenmesi. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi, 12*(4), 1997-2003.

Tavşancıl, E. (2002). *Tutumların ölçülmesi ve SPSS ile veri analizi.* Nobel Yayın Dağıtım.

Yapicioglu, B. (2002). *Examination of the Latin and European Schools with the help of computerized match analysis programmes in the FIFA World Cup*. [Master's thesis, Ege University]. YÖK Tez Merkezi.

Appendix: 1

HALI SAHA FUTBOL TUTUM ÖLÇEĞİ (HSFTÖ)- Indoor Soccer Attitude Scale (HSFTÖ)

Madde Numarası	**Aşağıda halı saha futbolu ile ilgili önermeler verilmiştir. Lütfen her cümleyi dikkatle okuduktan sonra size en uygun olan birisini işaretleyiniz. Lütfen sadece bir seçeneği işaretleyiniz.** **Teşekkür ederiz.**	Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
1	Futbol oynamak beni her zaman mutlu eder.	(1)	(2)	(3)	(4)	(5)
2	Futbola karşı büyük bir tutkum var.	(1)	(2)	(3)	(4)	(5)
3	Futbol oynamak için her zaman heyecanlıyım.	(1)	(2)	(3)	(4)	(5)
4	Futbol oynarken zamanın nasıl geçtiğini anlamıyorum.	(1)	(2)	(3)	(4)	(5)
5	Maçlara katılmak için fırsat bulmaya çalışırım.	(1)	(2)	(3)	(4)	(5)
6	Futbol oynamak adrenalinimi yükseltir.	(1)	(2)	(3)	(4)	(5)
7	Futbol oynamak, özgüvenimi artırır.	(1)	(2)	(3)	(4)	(5)
8	Futbol oynamak, zihinsel sağlığıma iyi geliyor.	(1)	(2)	(3)	(4)	(5)
9	Futbol oynamak, stresle başa çıkmama yardımcı olur.	(1)	(2)	(3)	(4)	(5)
10	Futbolsuz bir yaşam düşünemiyorum.	(1)	(2)	(3)	(4)	(5)
11	Futbol oynamak fiziksel sağlığımı geliştirir.	(1)	(2)	(3)	(4)	(5)
12	Futbol oyuncuların takım arkadaşları ile iletişimi önemlidir.	(1)	(2)	(3)	(4)	(5)
13	Futbol oynarken oyun kurallarına uyulmalıdır.	(1)	(2)	(3)	(4)	(5)
14	Futbol oyununda takım liderliği önemlidir.	(1)	(2)	(3)	(4)	(5)
15	Futbol oynamadan önce en az 10 dakika ısınma hareketleri yapılmalıdır.	(1)	(2)	(3)	(4)	(5)
16	Fiziki mekân temizliği çok önelidir.	(1)	(2)	(3)	(4)	(5)
17	Futbol oynarken uygun forma ve giysiler giymek gerekir.	(1)	(2)	(3)	(4)	(5)
18	Maç sonunda duş imkânı çok önemlidir.	(1)	(2)	(3)	(4)	(5)

Interest: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11; Discipline: 12, 13, 14, 15, 16, 17, 18
No reverse-coded items are present.

Appendix: 2

Scoring of the Scale

The highest possible average score for the subdimensions of the scale is 5.00, while the lowest is 1.00. A higher average score indicates a stronger attitude towards the respective dimension, whereas a lower score reflects a weaker attitude. The cut-off points for evaluation, calculated based on the obtained average scores, are presented in the table below. Accordingly, an average score between 4.20 and 5.00 indicates a very high level of attitude, 3.40 and 4.19 represents a high level, 2.60 and 3.39 corresponds to a moderate level, 1.80 and 2.59 signifies a low level, and 1.00 and 1.79 reflects a very low level of attitude.

Average	Assessment
1.00-1.79	Very Low
1.80-2.59	Low
2.60-3.39	Moderate
3.40-4.19	High
4.20-5.00	Very High