

*Investigation of Referee Self-Efficacy Levels of Football in the 2nd Region of Turkey Football Federation

Türkiye Futbol Federasyonu 2. Bölge Futbol Hakemlerinin Özyeterlilik Düzeylerinin İncelenmesi

Ibrahim Duran¹, **Emre Altundağ²

¹ Kütahya Dumlupınar Üniversitesi Spor Bilimleri Fakültesi, ibrahimdurann43@gmail.com, 0000-0002- 9062- 1534

² Kütahya Dumlupınar Üniversitesi Spor Bilimleri Fakültesi, emre.altundag@dpu.edu.tr, 0000-0002-7010-5065

ABSTRACT

The aim of this study is to examine the self-efficacy levels (REFS) of football referees in the 2nd region of the Turkish Football Federation league based on variables such as gender, classification, refereeing experience, licensed football playing experience, and the province where they officiate. A total of 204 referees (21 women, 183 men) working as Provincial Referees, Regional Referees, and Regional Assistant Referees in the provinces of Kocaeli, Sakarya, Bursa, and Kütahya participated in the study. Kruskal-Wallis H and Mann-Whitney U tests were used for data analysis. The findings revealed no significant difference in self-efficacy levels between referees who had played licensed football and those who had not; however, it was observed that referees with licensed football experience had higher self-efficacy levels compared to those without such experience. A significant difference was found in favor of male referees based on the gender variable. The classification variable showed significant differences in physical competence, game knowledge, pressure, and total REFS scores. Moreover, significant differences were detected in the subdimensions of pressure, decision-making, communication, and game knowledge, as well as in the total REFS scores according to refereeing experience. A significant difference was found in the pressure subdimension based on the province variable. In conclusion, it is evident that customized training programs should be developed to enhance the self-efficacy levels of referees, particularly for female referees and those who have not played licensed football. Additionally, it is essential to organize training programs aimed at improving physical fitness, game knowledge, and decision-making skills under pressure. Such programs are believed to support the professional development of referees and enhance their overall performance.

Keywords: Soccer referee, self-efficacy, pressure, decision making.

ÖZET

Bu araştırmanın amacı, Türkiye Futbol Federasyonu liginde görev yapan 2.bölge futbol hakemlerinin özyeterlilik düzeylerini (HÖYÖ) cinsiyet, klasman durumu, hakemlik süresi, lisanslı futbol oynama durumu ve görev yapılan il gibi değişkenlere bağlı olarak incelemektir. Araştırmaya Kocaeli, Sakarya, Bursa ve Kütahya illerinde İl Hakemi, Bölgesel Hakem ve Bölgesel Yardımcı Hakem olarak görev yapan toplam 204 hakem (21 kadın, 183 erkek) katılmıştır. Verilerin analizinde Kruskal-Wallis H ve Mann-Whitney U testleri kullanılmıştır. Bulgular, lisanslı futbol oynayan hakemler ile oynamayanlar arasında özyeterlilik düzeyinde anlamlı bir fark olmadığını göstermiştir; ancak, lisanslı futbol oynayan hakemlerin özyeterlilik düzeylerinin oynamayanlara göre daha yüksek olduğu gözlemlenmiştir. Cinsiyet değişkenine göre, erkek hakemler lehine anlamlı bir fark ortaya çıkmıştır. Klasman değişkeni, fiziksel yeterlilik, oyun bilgisi, baskı ve HÖYÖ toplam puanlarında anlamlı farklılıklar göstermiştir. Ayrıca, hakemlik süresine göre baskı, karar verme, iletişim, oyun bilgisi alt boyutlarında ve HÖYÖ toplam puanlarında anlamlı farklar tespit edilmiştir. İl değişkenine göre ise baskı alt boyutunda anlamlı farklılık bulunmuştur. Sonuç olarak, hakemlerin özyeterlilik düzeylerini artırmak için kadın hakemler ve lisanslı futbol oynamamış hakemler için özelleştirilmiş eğitim programlarının geliştirilmesi gerektiği açıktır. Ayrıca, fiziksel yeterlilik, oyun bilgisi ve baskı altında karar verme becerilerini geliştirmeye yönelik eğitimlerin düzenlenmesi zorunludur. Bu tür programların hakemlerin mesleki gelişimini destekleyeceği ve genel performanslarını iyileştireceği düşünülmektedir.

Anahtar Kelimeler: Futbol hakemi, özyeterlilik, baskı, karar verme.

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**Corresponding author:
emre.altundag@dpu.edu.tr

INTRODUCTION

Football continues to dominate as the world's most popular sport, engaging millions of fans and participants globally (Demirhan vd., 2014). At the heart of the game, football referees serve as the ultimate authority, ensuring that the rules are upheld and that matches are conducted fairly. Their critical role in decision-making under pressure requires a unique combination of technical knowledge, experience, and mental resilience (Webb, Rayner, Cleland, & O'Gorman, 2020). Their ability to perform these tasks effectively hinges not only on their technical expertise and experience but also on their self-efficacy—their confidence in their ability to execute their responsibilities successfully (Bandura, 1977).

Research has shown that self-efficacy plays a crucial role in athletic and officiating performance, particularly in high-pressure environments like football refereeing (Guillén & Feltz, 2011). In the context of football refereeing, it reflects the referees' belief in their competence to handle various aspects of their role, from decision-making and game management to dealing with the stress and pressures inherent in officiating. High self-efficacy can enhance a referee's performance by improving their decision-making accuracy, resilience under pressure, and overall effectiveness in managing matches (Guillén & Feltz, 2011). The ability to make decision-making under pressure is closely related to mindfulness in sports. Mindfulness enables an athlete to stay in the moment, prevent distractions, and have a positive impact on performance. Especially in stressful or high-pressure situations, mindfulness facilitates athletes' ability to make quick and accurate decisions. This emerges as a key psychological skill that enhances performance in training sessions and competitions (Kozak et al., 2021).

The importance of self-efficacy in football refereeing has become increasingly recognized, leading to a growing body of research exploring the factors that influence referees' confidence and performance (Demirhan vd., 2019). One area of interest is the impact of prior football playing experience on referees' self-efficacy (Helsen & Bultynck, 2004). Previous research suggests that referees with a background in playing football may possess a deeper understanding of the game and its nuances, which could potentially enhance their self-efficacy and performance on the field. Conversely, referees without such experience may

face different challenges and require tailored support to build their confidence and effectiveness (MacMahon, Helsen, Starkes, & Weston, 2007; Philippe, Vallerand, Andrianarisoa, & Brunel, 2009; Slack, Maynard, Butt, & Olusoga, 2015).

Understanding the impact of playing experience on referees' self-efficacy is crucial for developing effective training programs and support mechanisms (MacMahon & Mildenhall, 2012; Weston et al., 2012). This study aims to compare the self-efficacy levels of football referees with licensed playing such experience, considering referees' classifications and genders. By thoroughly examining whether playing experience contributes positively to referees' self-efficacy and their ability to manage the various demands of officiating, this research addresses a critical aspect of football refereeing.

The insights gained from this study will offer valuable information about the role of self-efficacy and the potential benefits of playing experience. Ultimately, the findings aim to inform practices and policies that can support referees in their professional development, ensuring they are well-equipped to handle the complexities of modern football matches.

METHODS

Research Model: This study employs a quantitative research model (Creswell & Creswell, 2017), focusing on Provincial Referees, Regional Referees, and Regional Assistant Referees actively working in the provinces of Bursa, Kocaeli, Sakarya, and Kütahya during the 2022-2023 season. The research aims to investigate the self-efficacy levels of referees based on variables such as gender, classification, refereeing experience, licensed football playing status, and the province they work in.

Participants: During the 2022-2023 season, a total of 204 referees participated in the study, consisting of 21 women and 183 men. The referees were categorized as follows: 168 Provincial Referees, 14 Regional Referees, and 22 Regional Assistant Referees. The participants represented four provinces: 62 from Kütahya, 32 from Kocaeli, 44 from Sakarya, and 66 from Bursa. Among the referees, 114 (55.9%) had played football at a licensed level, while 90 (44.1%) had not. In terms of refereeing experience, 108 referees (52.9%) had 5 years or less of experience, 63 referees (30.9%) had between 6 and 10 years of experience, and 33 referees (16.2%) had over 11 years of experience.

Referee Self-Efficacy Scale (REFS): The Referee Self-Efficacy Scale (REFS) was initially developed by Myers et al. in 2012 (Myers, Feltz, Guillén, & Dithurbide, 2012). Its Turkish adaptation was later carried out by Karaçam and Pular (Karacam & Pular, 2017). The purpose of the scale is to measure referees' self-efficacy levels. It consists of 18 items and has five sub-dimensions: communication, pressure, physical fitness, decision-making, and game knowledge. REFS is calculated based on these sub-dimensions and uses a 5-point Likert-type format. Grading options of the scale items are indicated as "Strongly disagree=1" and "Strongly agree=5" (Karacam & Pular, 2017). The scale does not include any reverse-coded items. The reliability coefficient of the original scale is 0.90 (Demirtaş & Yıldız, 2021).

Statistical Analysis: The data were tested for normality using the Kolmogorov-Smirnov test, and since the data did not meet the normality assumption, non-parametric tests, namely the Kruskal-Wallis H and Mann-Whitney U tests, were applied (McKight & Najab, 2010). Spearman's correlation test was used to examine the relationships between variables. The results were evaluated at a significant level of 0.05 ($p < 0.05$).

Ethical principles of the study: Investigation of Self-Efficacy Levels of Football Referees in the 2nd Region of Turkey Football Federation ethical approval was obtained from the Scientific Research and Publication Ethics Committee of Kütahya Dumlupınar University with decision number 27.07.2023-312.

RESULTS

Table 1. Descriptive Analysis of Participants' Demographic Information

		N	%
Gender	Male referee	183	89,7
	Female referee	21	10,3
	Total	204	100,0
Licensed Football Playing Status	Played football	114	55,9
	Not played football	90	44,1
	Total	204	100,0
Refereeing Classification	Provincial referee	168	82,4
	Regional referee	14	6,9
	Regional assistant referee	22	10,8
	Total	204	100,0
Refereeing Experience (Years)	5 years or less	108	52,9
	6-10 years	63	30,9
	11 years and more	33	16,2
	Total	204	100,0

Table 2 presents the parameters reveals statistically significant differences based on the gender variable in the following sub-dimensions: Physical Competence (Mann-Whitney U = 1408.5; -2.048; $p < 0.05$), Pressure (Mann-Whitney U = 1208.5; -3.254; $p < 0.05$), Decision-Making (Mann-Whitney U = 1010.0; -3.824; $p < 0.05$), Communication (Mann-Whitney U = 1328.0; -2.472; $p <$

0.05), Game Knowledge (Mann-Whitney U = 1403.5; -2.139; $p < 0.05$), and in the total Referee Self-Efficacy Scale (REFS) score (Mann-Whitney U = 1051.5; -3.409; $p < 0.05$). The mean scores indicate that male participants have higher average scores than female participants across all sub-dimensions.

Table 2. Results of the Mann-Whitney U Test Analysis for the Gender Variable

Variables	Gender	N	Mean Ranks	Z	p
Physical Fitness	Male	183	105,3	-2,048	,041*
	Female	21	78,0		
Pressure	Male	183	106,4	-3,254	,001*
	Female	21	68,5		
Decision-Making	Male	183	107,4	-3,824	,000*
	Female	21	59,1		
Communication	Male	183	105,7	-2,472	,013*
	Female	21	74,2		
Game Knowledge	Male	183	105,3	-2,139	,032*
	Female	21	77,8		
REFS Total	Male	183	107,2	-3,409	,001*
	Female	21	61,0		

$p < 0.05$

Table 3. Analysis Results of the Kruskal-Wallis H Test for the Refereeing Classification Variable

Variables	Refereeing Classification	N	Mean Ranks	X ²	p
Physical Fitness	Provincial referee	168	95,4	14,293	,001*
	Regional referee	14	130,0		
	Regional assistant referee	22	138,6		
Pressure	Provincial referee	168	97,8	8,095	,017*
	Regional referee	14	126,2		
	Regional assistant referee	22	122,8		
Decision-Making	Provincial referee	168	99,6	3,564	,168
	Regional referee	14	127,3		
	Regional assistant referee	22	108,4		
Communication	Provincial referee	168	98,7	5,224	,073
	Regional referee	14	130,6		
	Regional assistant referee	22	113,1		
Game Knowledge	Provincial referee	168	97,1	10,212	,006*
	Regional referee	14	141,0		
	Regional assistant referee	22	119,2		
REFS Total	Provincial referee	168	94,9	16,383	,000*
	Regional referee	14	146,7		
	Regional assistant referee	22	132,2		

Table 3 present, significant differences were found in the sub-dimensions of Physical Competence ($\chi^2 (2, n=204) = 14.293; p < 0.05$), Pressure ($\chi^2 (2, n=204) = 8.095; p < 0.05$), Game Knowledge ($\chi^2 (2, n=204) = 10.212; p < 0.05$), and the Total REFS scores ($\chi^2 (2, n=204) = 16.383; p < 0.05$) based on the refereeing classification variable. However, no significant differences were detected in the sub-dimensions of Decision-Making ($\chi^2 (2, n=204) = 3.564; p > 0.05$) and Communication ($\chi^2 (2, n=204) = 5.224; p > 0.05$). The average scores indicate that regional assistant referees had higher mean scores in the Physical Competence sub-dimension, regional referees had higher mean scores in the Pressure and Game Knowledge sub-dimensions, and regional referees also had higher mean scores in the Total REFS scores compared to others.

Table 4. Analysis Results of the Mann-Whitney U Test for the Variable of Playing Football with a License

Variables	Licensed Football Playing Status	N	Mean Ranks	Z	p
Physical Fitness	Played football	114	104,8	-,662	,508
	Not played football	90	99,4		
Pressure	Played football	114	105,6	-,992	,321
	Not played football	90	98,5		
Decision-Making	Played football	114	107,5	-1,466	,143
	Not played football	90	96,1		
Communication	Played football	114	107,4	-1,443	,149
	Not played football	90	96,2		
Game Knowledge	Played football	114	106,2	-1,092	,275
	Not played football	90	97,7		
REFS Total	Played football	114	107,4	-1,360	,174
	Not played football	90	96,2		

Table 4 present no statistically significant differences were found in the subdimensions of Physical Competence, Pressure, Decision-Making, Communication, Game Knowledge and Total REFS scores based on the variable of playing football with a license.

Table 5. Analysis Results of the Kruskal-Wallis H Test for the Variable of Refereeing Experience (Years)

Variables	Refereeing Experience (Years)	N	Mean Ranks	X ²	p
Physical Fitness	5 years or less	108	94,34	4,674	,097
	6-10 years	63	112,90		
	11 years and more	33	109,35		
Pressure	5 years or less	108	86,46	23,51	,000*
	6-10 years	63	118,33		
	11 years and more	33	124,76		
Decision-Making	5 years or less	108	87,91	19,10	,000*
	6-10 years	63	111,98		
	11 years and more	33	132,14		
Communication	5 years or less	108	82,03	32,18	,000*
	6-10 years	63	122,00		
	11 years and more	33	132,27		
Game Knowledge	5 years or less	108	89,92	12,92	,002*
	6-10 years	63	112,01		
	11 years and more	33	125,52		
REFS Total	5 years or less	108	83,37	24,92	,000*
	6-10 years	63	120,59		
	11 years and more	33	130,58		

Table 5 present the no statistically significant difference was found in the Physical Competence sub-dimension ($\chi^2(2, n=204) = 4.674$; $p > 0.05$) based on the variable of refereeing experience (years). However, statistically significant differences were found in the sub-dimensions of Pressure ($\chi^2(2, n=204) = 23.51$; $p < 0.05$), Decision-Making ($\chi^2(2, n=204) = 19.10$; $p < 0.05$), Communication ($\chi^2(2, n=204) = 32.18$; $p < 0.05$), Game Knowledge ($\chi^2(2, n=204) = 12.92$; $p < 0.05$), and Total REFS scores ($\chi^2(2, n=204) = 24.92$; $p < 0.05$). When examining the mean values, referees with 11 or more years of experience had higher average scores compared to others in the sub-dimensions of Pressure, Decision-Making, Communication, and Game Knowledge, as well as in the Total REFS scores.

Table 6. Spearman Correlation Analysis Results Among the REFS Sub-Dimensions

	Physical Competence	Pressure	Decision-Making	Communication	Game Knowledge
Physical Fitness	1,000				
Pressure	,277**	1,000			
Decision-Making	,439**	,539**	1,000		
Communication	,801**	,633**	,764**	1,000**	
Game Knowledge	,516**	,390**	,665**	,768**	1,000

Table 6 presents a significant and positive relationship was found between the Physical Fitness sub-dimension and the sub-dimensions of Pressure ($r_s = 0.277$, $p < 0.05$), Decision-Making ($r_s = 0.439$, $p < 0.05$), Communication ($r_s = 0.801$, $p < 0.05$), and Game Knowledge ($r_s = 0.516$, $p < 0.05$). A significant and positive relationship was also found between the Pressure sub-dimension and the sub-dimensions of Decision-Making ($r_s = 0.539$, $p < 0.05$), Communication ($r_s = 0.633$, $p < 0.05$), and Game Knowledge ($r_s = 0.516$, $p < 0.05$). Additionally, a significant and positive relationship was observed between the Decision-Making sub-dimension and the sub-dimensions of Communication ($r_s = 0.764$, $p < 0.05$) and Game Knowledge ($r_s = 0.665$, $p < 0.05$). Lastly, a significant and positive relationship was found between the Communication sub-dimension and the Game Knowledge sub-dimension ($r_s = 0.768$, $p < 0.05$).

DISCUSSION AND CONCLUSION

In this study, the effects of gender, football experience, refereeing class, and refereeing experience on referee performance were examined. The findings indicate that these factors play a significant role in referees' self-confidence, decision-making abilities, and stress management skills. Specifically, male referees, referees with football experience, and more experienced referees were found to perform better, demonstrating advantages in these areas. These results align with the complex and varied findings in the literature highlighting the need for further in-depth research into the factors influencing refereeing performance.

Gender Differences: Our study found significant differences in the Total REFS scores and sub-dimensions based on gender, with male referees scoring higher than female referees. This suggests that male referees may possess higher self-confidence, potentially due to their greater involvement in football from a young age and their experience managing matches predominantly involving male players. This could positively impact their self-efficacy, whereas female referees might face more anxiety, affecting their performance.

Supporting literature shows mixed results. Dereceli et al. (2019) identified significant differences favoring males in communication, physical fitness, and pressure sub-dimensions, but no differences in decision-making and game knowledge (Dereceli, Ünlü, & Erbaş, 2019). Sevinç et al. (2021) reported advantages for male referees in physical fitness, game knowledge, decision-making, and

pressure (Sevinç, Gerek, & Arslan, 2021). Koçak (2019) found no significant gender differences in pressure, communication, and game knowledge but noted advantages for males in physical fitness and decision-making (Koçak, 2019). Other studies, such as those by Çelik (2020) and Adıgüzel (2018), found no significant gender differences in decision-making or overall REFS scores (Adıgüzel, 2018; Çelik, 2020). This highlights the complexity of gender differences in refereeing performance, with various studies offering divergent findings.

Football Experience: Our findings revealed no significant differences in Total REFS scores and sub-dimensions based on whether referees played football with a license. Nevertheless, referees who played football scored higher across all sub-dimensions, suggesting that football experience may enhance referees' self-efficacy in the sport.

Literature supports this, though results vary. Demirtaş and Yıldız (2021) found no significant differences in communication but noted advantages in pressure, game knowledge, physical fitness, and decision-making for those with football experience (Demirtaş & Yıldız, 2021). Şirin (2021) observed no differences in stress sources based on football experience (Şirin, 2021). Other studies, like those by Cengiz et al. (2008) and Denizli (2010), highlight the positive impact of football experience on referees' skills and performance (Cengiz, Pular, & Cengiz, 2008; Denizli, 2010). However, some studies, including those by Açııcı and Çebi (2020) and Yerebatan (2019), found no significant differences based on playing football (Açııcı & Çebi, 2020; Yerebatan, 2019). This underscores the potential benefits of football experience while also indicating the need for further research to explore these relationships.

Refereeing Class: Our study identified significant differences in Total REFS scores and sub-dimensions based on refereeing class. Specifically, no significant differences were found in communication and decision-making across classes, but significant differences were observed in physical fitness, game knowledge, and pressure, with regional referees scoring higher.

This suggests that higher refereeing classes involve greater responsibilities and pressures. Regional referees, who cover less distance during matches, may have higher physical fitness scores compared to central referees. Literature supports these findings with variations. Kaya and Tuncel (2021) found higher self-confidence in A-class referees. Johansen and Haugen (2013) observed increased anxiety in first-division referees (Johansen & Haugen, 2013; Kaya & Tuncel, 2021). Sevinç et al. (2021) noted differences in game knowledge and decision-making for national-level referees (Sevinç et al., 2021). However, studies by Öntürk et al. (2020) and Dinç (2017) found no significant differences in stress levels and professional attributes across referee classes (Dinç, 2017; Öntürk et al., 2020). These results highlight the complex relationship between refereeing class, responsibilities, and performance.

Refereeing Experience: Our study found no significant differences in physical competence based on refereeing experience, indicating that referees maintain their physical readiness throughout their careers. However, significant differences were noted in pressure, decision-making, communication, game knowledge, and Total REFS scores, with more experienced referees scoring higher.

This suggests that increased experience enhances referees' performance in these areas. Supporting literature, including studies by Aguilar et al. (2021) and Johansen et al. (2022), confirms that experienced referees handle stress better and exhibit higher self-efficacy (Aguilar, Castillo-Rodriguez, Chinchilla-Minguet, & Onetti-Onetti, 2021; Johansen, Haugen, & Erikstad, 2022). Aksoy (2019) and Pular and Karaçam (2017) similarly highlight the positive impact of experience on self-confidence and self-efficacy (Aksoy, 2019; Karacam & Pular, 2017). Conversely, Öntürk et al. (2020) found no significant differences in stress or self-esteem based on experience, although Atılğan and Tükel (2020) identified differences in decision-making styles (Atılğan & Tükel, 2019; Öntürk et al., 2020). These findings underscore the positive correlation between refereeing experience and enhanced performance and self-efficacy.

Overall, our study contributes to understanding how gender, football experience, refereeing class, and experience impact refereeing performance, aligning with some literature while highlighting areas for further exploration.

As a result, gender, football experience, refereeing class, and refereeing experience significantly influence the Total REFS scores and sub-dimensions. Male referees generally scored higher across various dimensions compared to female referees, indicating potential differences in self-confidence and performance under pressure. Referees with football experience also scored higher overall, suggesting that playing football may enhance self-efficacy in refereeing. Significant differences based on refereeing class were found, with regional referees excelling in pressure, game knowledge, and overall scores, reflecting the increased responsibilities and expectations at higher levels. Additionally, referees with more experience performed better in pressure, decision-making, communication, and game knowledge, highlighting the positive impact of experience on these aspects.

Recommendations: To support female referees and address potential performance disparities, training programs should focus on building self-confidence and managing anxiety. Incorporating football experience into referee training can enhance self-efficacy and performance. Additionally, providing specialized training for referees at different levels can help improve their ability to manage pressure and game knowledge. Ongoing professional development and regular assessments are essential to maintaining and improving refereeing skills throughout their careers.

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