

Investigation of Fan Attitudes Toward the Video Assistant Referee System in Football



Engin VURAL^{1*}, Tuncay KIRATLI², Sinem TOÇOĞLU³, Yavuz YILDIRIM⁴

^{1*}Mus Alparslan University, Institute of Social Sciences, Muş/Türkiye

²Bayburt University, Graduate School of Education, Department of Physical Education and Sports, Bayburt/Turkey

³Dokuz Eylül Üniversitesi, Necat Hepkon Spor Bilimleri Fakültesi, İzmir, Türkiye

⁴Sakarya University of Applied Sciences, Graduate School of Education, Department of Recreation, Sakarya/Turkey

*Corresponding authors: Engin VURAL

*Email: enginvural06@gmail.com

ABSTRACT

This study aims to examine fan attitudes toward the Video Assistant Referee (VAR) system, which is applied in football matches involving Super League teams where professional football clubs compete. A total of 403 volunteer fans, 181 female and 222 male, between the ages of 19 and 65 from Bitlis Province, Turkey, participated in the study. Data were collected using a personal information form and the Video Assistant Referee (VAR) System Fan Attitude Scale developed by Tabuk (2022). The study data were analyzed using the SPSS 26 software package. A one-way MANOVA test was applied to the data. As a result of the analysis, no significant difference was found in any of the factors according to the gender variable ($p>0.05$). However, according to marital status, a significant difference was found in the factors of contribution to football and competition pressure. The mean contribution to the football score of single individuals was higher than that of married individuals, while the mean competition pressure score of married individuals was significantly higher than that of single individuals ($p<0.05$). Regarding the age variable, a significant difference was found in the factors of contribution to football and competition pressure. The mean contribution to the football score of participants between the ages of 19 and 25 was higher than that of those between the ages of 46 and 55 ($p<0.05$). A significant difference was also found in all factors according to educational level. It was determined that the mean scores for contribution to football and game management were higher among secondary education-level participants than among graduate-level participants ($p<0.05$). In the competition pressure factor, the mean score of undergraduate graduates was higher than that of secondary education graduates. Additionally, for general VAR attitude, the mean score of undergraduate graduates was significantly higher than that of graduate-degree holders ($p<0.05$). In conclusion, the research findings indicate that while there was no significant difference in attitudes toward the VAR system based on gender, significant differences were observed in certain factors according to marital status, age, and education level. In particular, it was observed that single and younger participants had higher perceptions of contribution to football, married individuals felt competition pressure more intensely, and attitudes toward the VAR system varied as the level of education increased. Future studies should analyze psychological and sociocultural factors to gain a deeper understanding of how attitudes toward the VAR system are shaped across different demographic groups.

Keywords: Video Assistant Referee (VAR) System, Football, Fans.

INTRODUCTION

Football is the most widely followed sport in history and a frequent topic of discussion. It is a sport that increases both fan engagement and the enjoyment of watching (Kayhan, Bardakçı, & Caz, 2020). Football is played on a green field with specific dimensions by two opposing teams, each consisting of eleven players, one of whom is the goalkeeper. The word "football" originates from the combination of the English words "foot" and "ball". It is a game consisting of two 45-minute halves, where the objective is to score a goal in the opponent's net without using the hands or arms,

except for the goalkeeper, by controlling the ball with the foot, body, or head (Yardımcı, 1996).

Although there are many different sports, football attracts the most attention in the sports industry (Aydın, Turgut, & Bayırlı, 2007). Globally, football generates an annual economic volume of nearly 300 billion dollars (Akşar, 2005). The goods and services consumed directly or indirectly by football fans constitute the foundation of this economic impact. Since the first official football match in England in 1866 (İnan, 2007), football has become an economically significant sector. Today, it stands out as a rapidly growing segment of the entertainment industry, and its role in popular culture continues to

expand (Koçer, 2012). Beyond football teams and athletes, the football industry directly or indirectly encompasses many sectors, including media, entertainment, betting, tourism, and sports equipment (Devecioğlu & Çoban, 2003).

For the control and fairness of the game, FIFA (The Fédération Internationale de Football Association) has established rules requiring six referees on the field: the referee, two assistant referees, a fourth referee, and two linesmen (Turkish Football Federation, 2020). The referee serves as the authority to whom players from both teams appeal during the match (Morgan, 2000). In a football match, referees are responsible for enforcing the rules of the game. The referee, who ensures rule compliance, plays a central role in regulating player behavior and their interactions with opponents (Bangsbo, 2003).

FIFA first approved the use of the Video Assistant Referee (VAR) system in a friendly match between France and Italy on September 1, 2016, to review controversial situations. The VAR system, which was applied for the first time in an international match, was described as a “revolution in football” and continued to be used in the 2018 World Cup in Russia (Demir, 2019). In Turkey, the Turkish Football Federation (TFF) implemented the VAR system during the 2018-2019 Spor Toto Super League Lefter Kucukandonyadis Season (Erdoğan, 2021).

The VAR system is described as an innovative mechanism that allows for the review of plays and the modification of decisions in cases of intense objections that may affect the outcome of the match. Referees can make more accurate decisions by replaying incidents on the VAR screen located on the sidelines. Additionally, in a dedicated VAR room in Riva, Turkey, a separate team of referees monitors the match from different angles and can alert the main referee about controversial situations (Engin & Çelik, 2019). The VAR system, implemented with FIFA’s approval for reviewing controversial incidents, is used to evaluate goals, penalties, red cards, and cases of mistaken identity in disciplinary decisions. The system is activated upon the referee’s request, allowing incidents to be reviewed on video so that the referee can make a decision based on the provided information (Demir, 2019).

The integration of modern technological advancements into sports is now commonplace.

Particularly in football, the use of technology to assist referees in managing matches fairly is of great importance. In this context, examining fan attitudes toward the VAR system used in matches is considered highly significant.

This study aims to analyze fan attitudes toward the VAR system, which is applied in football matches involving Super League teams in Turkey. This study presents insights into the VAR system from the fans’ perspective and offers necessary recommendations. It is believed that these recommendations could contribute to the further development of the VAR system from different perspectives.

METHOD

Research Model

In this study, the general survey model, one of the quantitative research methods, was used. Quantitative research involves quantifying collected data and presenting it using symbols. Additionally, quantitative research is a repeated, objective procedure based on observations and measurements. In this research model, different statistical and mathematical models were used to categorize the data into specific groups and ensure accurate analysis. This approach allows researchers to present findings objectively, without personal interpretation (Johnson & Christensen, 2024).

Population and Sample of the Study

The sample of this study was determined using the convenience sampling method. Convenience sampling refers to selecting a sample from a group in a non-random manner based on specific criteria set by the researcher. This method allows data to be collected from the target population in the fastest and most cost-effective way (Malhotra, 2004). Kinnear and Taylor (1996) reported that the convenience sampling method was used in 53% of studies in the field. In research conducted by Kurtuluş (2004), it was found that convenience sampling was used in 90% of studies in Turkey. The sample of this study consisted of 403 volunteer supporters selected through convenience sampling among individuals aged 19-65 residing in Bitlis Province, Turkey. This age range was chosen to include participants who had completed primary and secondary education and had advanced reasoning skills at the university level.

Table 1. Descriptive statistics results for the participants

Gender	n	%
Kadın	181	44,9
Erkek	222	55,1
Marital Status	n	%
Evli	118	29,3
Bekar	285	70,7
Age	n	%
19-25	246	61,0
26-35	87	21,6
36-45	55	13,6
46-55	15	3,7
Education Status	n	%
Ortaöğretim	232	57,6
Lisans	132	32,8
Lisansüstü	39	9,7
Toplam	403	100,0

According to table 1 is examined, 44.9% (n=181) of the participants were female, 55.1% (n=222) were male; 29% (n=118) were married, 70.7% (n=285) were single; 61,0% (n=246) were between the ages of 19-25, 21,6% (n=87) between the ages of 26-35, 13,6% (n=55) between the ages of 36-45, 3,7% (n=15) between the ages of 46-55; 57,6% (n=232) had secondary education, 32,8% (n=132) had undergraduate education, and 9,7% (n=39) had graduate education.

Data Collection Tools

Data were collected using a Personal Information Form prepared by the researcher and the "Video Assistant Referee (VAR) System Fan Attitude Scale" developed by Tabuk (2022). These tools were administered to volunteer participants in Bitlis Province, Turkey, ensuring a large sample size. The Personal Information Form included demographic questions such as gender, age, marital status, and education level. The "Video Assistant Referee (VAR) System Fan Attitude Scale", developed by Tabuk (2022), consists of 9 items

divided into 3 subscales: Contribution to Football (3 items), Game Management (3 items), and Competition Pressure (3 items). The scale is a 7-point Likert-type measurement, with response options ranging from "Completely Appropriate" to "Completely Inappropriate". The minimum possible score on the scale is 9, while the maximum is 63. Higher scores indicate a more positive attitude toward the VAR system in football, meaning that participants perceive the VAR system as contributing positively to the game.

Data Analysis

All data collected in this study were analyzed using the SPSS 26 software package. A normality test was applied to the variables, confirming that the data followed a normal distribution. Consequently, one-way MANOVA, a parametric test, was used for analysis. Additionally, the Bonferroni multiple comparison test was applied to determine differences between groups. The significance level was set at $p < 0.05$.

FINDINGS

Table 2. Comparison of Attitudes towards the Video Assistant Referee (VAR) System According to Gender

	Gender	n	X	Sd.	F	p
Contribution to Football	Female	181	6.14	3.18	0.183	0.669
	Male	222	6.00	3.26		
Game Management	Female	181	10.02	4.52	0.915	0.339
	Male	222	10.50	5.42		
Competition Pressure	Female	181	11.09	5.25	3.853	0.050
	Male	222	12.23	6.18		
General Attitude	Female	181	27.25	9.09	2.137	0.145
	Male	222	28.73	10.88		

In Table 2, the values obtained from the one-way MANOVA analysis (Pillai's Trace = 0.010; $F = 1.359$; $p = 0.255$; $\eta^2 = 0.010$) indicate that there is no significant difference in the mean scores of the

following factors based on gender: Contribution to Football ($F = 0.183$; $p = 0.669$), Game Management ($F = 0.915$; $p = 0.339$), Competition Pressure ($F = 3.853$; $p = 0.050$), and General Attitude Towards

VAR ($F = 2.137$; $p = 0.145$). Thus, gender does not appear to influence attitudes toward the VAR system.

Table 3. Comparison of Attitudes towards the Video Assistant Referee (VAR) System According to Marital Status

	Marital Status	n	X	Sd.	F	p
Contribution to Football	Married	118	5.56	2.74	4.101	0.044
	Single	285	6.27	3.38		
Game Management	Married	118	9.95	4.91	0.755	0.386
	Single	285	10.43	5.09		
Competition Pressure	Married	118	13.07	5.94	9.257	0.003
	Single	285	11.15	5.66		
General Attitude	Married	118	28.58	9.77	0.425	0.515
	Single	285	27.85	10.28		

In Table 3, the values obtained from the one-way MANOVA analysis (Pillai's Trace = 0.048; $F = 6.720$; $p = 0.000$; $\eta^2 = 0.048$) indicate that there is a significant difference in the following factors based on marital status: Contribution to Football ($F = 4.101$; $p = 0.044$) and Competition Pressure ($F = 9.257$; $p = 0.003$). However, there is no significant difference in: Game Management ($F = 0.755$; $p =$

0.386) and General Attitude towards VAR ($F = 0.425$; $p = 0.515$). According to the Post Hoc (Bonferroni) test, the differences are as follows: Single participants had significantly higher mean scores in Contribution to Football compared to married participants, whereas married participants had significantly higher mean scores in Competition Pressure compared to single participants.

Table 4. Comparison of Attitudes towards the Video Assistant Referee (VAR) System According to Age

	Age	n	X	Sd.	F	p	Difference
Contribution to Football	19-25 years (a)	246	6.38	3.50	2.930	0.033	a>d
	26-35 years (b)	87	5.71	2.74			
	36-45 years (c)	55	5.65	2.68			
	46-55 years (d)	15	4.33	1.63			
Game Management	19-25 years (a)	246	10.35	5.11	0.895	0.444	
	26-35 years (b)	87	10.57	4.92			
	36-45 years (c)	55	9.33	4.82			
	46-55 years (d)	15	11.07	5.32			
Competition Pressure	19-25 years (a)	246	10.73	5.67	9.079	0.000	b>a
	26-35 years (b)	87	14.29	5.44			
	36-45 years (c)	55	12.40	5.74			
	46-55 years (d)	15	10.40	5.89			
General Attitude	19-25 years (a)	246	27.47	10.35	2.424	0.065	
	26-35 years (b)	87	30.57	9.14			
	36-45 years (c)	55	27.38	10.28			
	46-55 years (d)	15	25.80	9.88			

In Table 4, the values obtained from the one-way MANOVA analysis (Pillai's Trace = 0.113; $F = 5.218$; $p = 0.000$; $\eta^2 = 0.038$) indicate that there is a significant difference in the following factors based on age: Contribution to Football ($F = 2.930$; $p = 0.033$) and Competition Pressure ($F = 9.079$; $p = 0.000$). However, there is no significant difference in: Game Management ($F = 0.895$; $p = 0.444$) and

General Attitude towards VAR ($F = 2.424$; $p = 0.065$). According to the Post Hoc (Bonferroni) test, the differences are as follows: participants aged 19-25 had significantly higher mean scores in Contribution to Football compared to those aged 46-55, while participants aged 26-35 had significantly higher mean scores in Competition Pressure compared to those aged 19-25.

Table 5. Comparison of Attitudes towards the Video Assistant Referee (VAR) System According to Education Level

	Education Status	n	X	Sd.	F	p	Difference
Contribution to Football	Secondary Education (a)	232	6.37	3.46	3.279	0.039	a>c
	Undergraduate (b)	132	5.82	2.84			
	Postgraduate (c)	39	5.08	2.73			
Game Management	Secondary Education (a)	232	10.50	5.08	3.205	0.042	a>c
	Undergraduate (b)	132	10.48	4.96			
	Postgraduate (c)	39	8.36	4.72			
Competition Pressure	Secondary Education (a)	232	10.69	5.53	9.769	0.000	b>a
	Undergraduate (b)	132	13.42	5.80			
	Postgraduate (c)	39	12.05	6.15			
General Attitude	Secondary Education (a)	232	27.56	10.24	3.334	0.037	b>c
	Undergraduate (b)	132	29.71	9.86			
	Postgraduate (c)	39	25.49	9.78			

In Table 5, the values obtained from the one-way MANOVA analysis (Pillai's Trace = 0.097; $F = 6.758$; $p = 0.000$; $\eta^2 = 0.048$) indicate that there is a significant difference in all measured factors based on education level: Contribution to Football ($F = 3.279$; $p = 0.039$), Game Management ($F = 3.205$; $p = 0.042$), Competition Pressure ($F = 9.769$; $p = 0.000$), and General Attitude towards VAR ($F = 3.334$; $p = 0.037$). According to the Post Hoc (Bonferroni) test, the differences are as follows: participants with secondary education had significantly higher mean scores in Contribution to Football and Game Management compared to those with postgraduate education, while participants with undergraduate education had significantly higher mean scores in Competition Pressure compared to those with secondary education. Additionally, participants with undergraduate education had significantly higher mean scores in General Attitude toward VAR compared to those with postgraduate education.

DISCUSSION

In this study, the attitudes of fans towards the Video Assistant Referee (VAR) System, applicable in the football matches of Super League teams, were examined based on gender, marital status, age, and educational status.

When the research findings were analyzed, it was found that there was no significant difference in the mean scores for contribution to football, game management, competition pressure, and general attitude based on gender ($p > 0.05$). Reviewing the literature, Saygıdar (2023) compared the referee self-efficacy and attitudes towards the video referee system according to gender among football referees. This study found that male participants had higher attitudes towards the VAR system compared to female participants. This could be explained by the fact that male participants, who generally have more match experience, are more frequently exposed to video referee system practices.

Regarding marital status, the research showed a significant difference in the contribution to football and competition pressure factors ($p < 0.05$). However, no significant differences were found in game management and general attitude ($p > 0.05$). The results indicated that the mean score of single participants was higher in the contribution to the football factor, while the mean score of married participants was significantly higher in the competition pressure factor. In a study conducted by Tabuk (2022), a scale was developed to determine fan attitudes towards the VAR system. Although the study explored general fan attitudes toward the VAR system, it did not evaluate differences based on demographic variables like marital status. Similarly, in the study "Development of The Attitude Scale Towards Video Assistant Referee (VAR) in Turkish Football" by Kayhan et al. (2020), fans' attitudes towards VAR were measured, but marital status was not addressed as a variable.

The study also found significant differences in contribution to football and competition pressure based on the age of participants ($p < 0.05$), although no significant differences were found in game management and general attitude ($p > 0.05$). In the contribution to football factor, participants aged 19-25 had higher mean scores compared to those aged 46-55. This suggests that younger participants are more likely to perceive VAR as contributing to football. Reviewing the literature, Saygıdar (2023) found that attitudes towards the VAR system became more positive with increasing age. Similarly, Hamsund and Scelles (2021) reported that fans generally had positive attitudes towards VAR and were satisfied with its use. Demir and Bektas (2022) found that referees believed the VAR system negatively impacted the viewing pleasure, but fans agreed with this to a lesser extent. Samuel et al. (2020) examined the impact of the VAR system in the Israeli league and found that, although the system caused pauses in the game, it played a significant role in ensuring fairness. Despite a

decrease in viewing pleasure, making the right decisions was seen positively by the public. Tamir and Bar-Eli (2021) stated that the VAR system caused interruptions in the game, sometimes exceeding 10% of total game time, which could be negatively perceived by the audience.

For the competition pressure factor, the results revealed that participants aged 26-35 had significantly higher mean scores than those aged 19-25. The study suggests that competition pressure tends to increase with age, especially for those in the 26-35 age group. In line with these findings, a study by Erdoğan (2021) found that football players in leagues with VAR technology experienced reduced stress levels and lower pressure on referees, which contributed to fairness in the game. Significant differences were also found in the mean scores for contribution to football, game management, competition pressure, and general attitude according to the participants' educational status ($p < 0.05$). In the contribution to football and game management factors, those with secondary education had higher mean scores compared to those with postgraduate education. In the competition pressure factor, participants with an undergraduate education had higher mean scores than those with secondary education. Regarding general attitude, those with an undergraduate education had significantly higher mean scores than those with graduate education. The results suggest that participants with higher education levels generally had more positive attitudes toward the VAR system.

Saygıdar (2023) compared the attitudes of participants towards the VAR system based on their educational levels but found no significant difference ($p > 0.05$). However, the study determined that participants with undergraduate and graduate education levels had more favorable attitudes toward the VAR system. This could be explained by increased awareness and understanding of the VAR system among those with higher education. Baldwin (2014) in his study "Video killed the sports referee: The role of video replay technology in creating anxiety and stress amongst rugby league referees" argued that while the VAR system might reduce stress for referees, its novelty could increase pressure on certain situations, potentially causing stress among them.

CONCLUSION

In conclusion, the research findings indicate that while no significant difference was found in the general attitude towards the VAR system based on gender, male participants exhibited higher attitudes towards it. Regarding marital status, age, and education variables, significant differences were observed in the contribution to football, game management, and competition pressure factors.

Specifically, single and younger participants had higher perceptions of the contribution to football. Additionally, the study revealed that as the level of education increased, so did awareness of the VAR system, leading to more distinct attitudes. While existing literature emphasizes the VAR system's role in ensuring fairness, it also highlights its negative impact on the fluidity of the game. The findings of this study underscore the multifaceted effects of the VAR system on the overall dynamics of football, revealing both its positive and negative influences on the sport.

SUGGESTIONS

Future research could explore how attitudes towards the VAR system vary across different leagues and cultural contexts. Qualitative studies that analyze referees' and players' in-depth experiences with the VAR system could provide valuable insights to enhance the system's effectiveness. Football authorities should consider fans' perceptions and expectations of the VAR system and develop more transparent and effective communication strategies. Additionally, technological and institutional improvements should be prioritized to minimize the impact of VAR on referees' decision-making processes and maintain the fluidity of the game. Given that education level influences attitudes towards the VAR system, it may be beneficial to organize awareness-raising programs targeted at referees and football players.

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