

Evaluation of The Effect of The VAR System on The Matches Played in the 2022 FIFA World Cup and UEFA Women's EURO 2022

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Abstract

Football is one of the most important sports branches in the world that people adopt and show interest in. It has also become an indispensable tool for countries to emphasise their unique cultures and to promote themselves. Based on these points, in football, which has become an industry and a source of commercial income with the passing of time, it has been important to follow the competitions meticulously, to examine every detail, and to minimise the errors to the minimum level. Especially in big organisations, this situation is more prominent. In this regard, the video assistant referee system, which is a product of teamwork, has been developed through digital platforms to assist and support the referee during the match. The aim of this study is to reveal the effect of the VAR system on the matches played in the 2022 FIFA World Cup and UEFA Women's EURO 2022. In the study, 64 matches played in the 2022 FIFA World Cup, 31 matches played in the UEFA Women's EURO 2022 and 95 matches in total were analysed. VAR decisions in the tournaments were evaluated separately on 11 parameters (accuracy of the goal awarded, accuracy of the goal not awarded, goal cancellation, goal awarded, accuracy of the penalty awarded, accuracy of the penalty not awarded, penalty cancellation, penalty awarded, red card awarded, red card cancelled and other). The data were analysed in SPSS 25.0 package program and descriptive statistics, percentage and frequency values were used in the analysis. According to the results obtained, it was determined that VAR had a direct effect on the 2022 World Cup only in some of the group matches; in the UEFA Women's EURO 2022, in some group matches and in the France Netherlands quarter-final match. As a result, it can be said that although the VAR system faced some reactions when it was first used, it contributed to the accuracy and reliability of the decisions made in the match and the tournament or league was shaped in line with the results that the teams deserved.

Keywords: Decision-aid Technology, FIFA, Football, UEFA, VAR System

VAR Sisteminin 2022 FIFA Dünya Kupası ve UEFA Kadınlar Euro 2022'de Oynanan Müsabakalar Üzerindeki Etkisinin Değerlendirilmesi

Öz

Futbol, insanların benimsediği ve ilgi gösterdiği, dünya üzerinde en önemli spor branşlarından biridir. Ülkelerin kendine has kültürlerini ön plana çıkarma ve kendilerini tanıma hususunda da değişilmez bir araç haline gelmiştir. Bu noktalardan hareketle, geçen zamanla beraber bir endüstri haline gelen ve ticari bir gelir kaynağı olan futbolda, müsabakaların titizlikle takip edilmesi, her detayının incelenmesi, hataların en asgari seviyeye indirgenmesi önemli olmuştur. Özellikle büyük organizasyonlarda bu durum daha ön plana çıkmaktadır. Bu hususta, müsabaka sırasında hakeme yardımcı ve destek olması amacıyla dijital platformlar aracılığıyla oluşturulan ve ekip çalışmasının bir ürünü olan video yardımcı hakem sistemi geliştirilmiştir. Bu çalışmanın amacı da VAR sisteminin 2022 FIFA Dünya Kupası ve UEFA Kadınlar Futbol Şampiyonası'nda oynanan müsabakalar üzerindeki etkisini ortaya koymaktır. Araştırmada 2022 FIFA Dünya Kupası'nda oynanan 64; UEFA Kadınlar Futbol Şampiyonası'nda oynanan 31, toplamda 95 müsabaka incelenmiştir. Turnuvalardaki VAR kararları ayrı ayrı 11 parametre (verilen golün doğruluğu, verilmeyen golün doğruluğu, gol iptali, gol verilmesi, verilen penaltının doğruluğu, verilmeyen penaltının doğruluğu, penaltı iptali, penaltı verilmesi, kırmızı kart verilmesi, kırmızı kart iptali ve diğer) özelinde değerlendirilmiştir. Veriler SPSS 25.0 paket programında analiz edilmiş ve analizde tanımlayıcı istatistiklerden yüzde ve frekans değerlerinden yararlanılmıştır. Elde edilen sonuçlara göre, VAR'ın 2022 Dünya Kupası'na sadece grup müsabakalarının bazılarında; 2022 UEFA Kadınlar Futbol Şampiyonası'nda ise, bazı grup müsabakalarında ve Fransa Hollanda çeyrek final müsabakasında doğrudan etkisi olduğu belirlenmiştir. Sonuç olarak, VAR sistemi ilk kullanılmaya başlandığında kısmen tepkilerle karşılaşmış olsa da müsabakada verilen kararların doğruluğu ve güvenilirliği bakımından katkı sağladığı ve takımların hak etmiş olduğu sonuçlar doğrultusunda turnuva veya ligin şekillendiği söylenebilir.

Anahtar Kelimeler: Karar – yardım teknolojisi, FIFA, Futbol, UEFA, VAR sistemi

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INTRODUCTION

Technological developments in the world in recent years have also manifested itself in sports and its effect has gradually increased (Dyer, 2015; Fouché, 2017). In football, which has the feature of being the most watched sports branch worldwide, technology has been used in many innovative steps in data collection and data interpretation (Tabuk, 2022), and recently it has also shown itself in minimising the errors in referee decisions as much as possible (Çankaya et al., 2020). With the inclusion of digital media technologies in football, the decision-making situation related to challenging and critical positions during the competition has become more comfortable, and clear (Ugondo & Tsokwa, 2019).

Referees, who are responsible for managing a sporting event in accordance with the rules and in a fair manner, are generally seen as responsible for unfavourable results (Catteeuw et al., 2009). This is especially true for football, which is the most financially lucrative sport in the globalised sports world (Scanlon et al., 2022) and one of the most popular sports branches (Manning & Levy, 2006). In particular, the fact that football spectators watching the match outside the stadium can watch the replay of a controversial position causes them to question the decisions of the referees and creates prejudice against the referees (Collins, 2010). In addition, referees' decisions may be influenced by the match atmosphere, the importance of the match, fan pressure and the strength of the teams (Boyko et al., 2007; Dohmen, 2008; Unkelbach & Memmert, 2010). In order to prevent such problems, decision-assistance technology and replay systems, which are used in American football, basketball, rugby and tennis competitions, have come to the forefront for football and are thought to help referees in terms of correct decision-making (Collins & Evans, 2008; Leveaux, 2010). In this context, FIFA has also initiated the Video Assistant Referee, i.e., VAR system (Çankaya et al., 2020). On 1 September 2016, the VAR system was first tested in the friendly match between Italy and France (Kayhan et al., 2020), and was officially used for the first time in the 2017 FIFA Confederations Cup and was officially approved and fully used in the 2018 World Cup (Scanlon et al., 2022).

The VAR application allows the referee or referees to make a decision by replaying the position on the screen placed at the edge of the pitch, in case the referee or referees officiating the match are undecided on any position that may affect the result of the match. In addition, in this system, a different panel of referees in a specially prepared room can follow the competition from many different screens and angles, re-watch the controversial positions and make notifications or warnings to the referee officiating the competition (Çankaya et al., 2020). VAR is activated before the goal, whether there is any violation for the goal to be invalidated, whether there is a clear error in the penalty decisions not awarded or awarded, whether there is a clear error in any dismissal decision other than the yellow card not awarded or awarded, and which player should be penalised when the referee gives a dismissal or caution to the wrong player from the offending team (TFF, 2018). In addition, this system also provides support in terms of whether the ball crossed the goal line and the issuance of card penalties for violations outside the referee's field of vision (Tabuk, 2022).

With the widespread use of the VAR application, which was started to be used to minimise referee errors, the opinions of referees, athletes or fans involved in football towards VAR have been discussed (Caz et al, 2021; Demir & Bektaş, 2022; Ekizoğlu & Akyüz, 2022; Engin &

Çelik, 2019; Erdoğan, 2021; Hamsund & Scelles, 2021; Spitz et al., 2021; Winand et al., 2021), evaluating their attitudes or developing scales (Demir et al., 2022; Kayhan et al., 2020; Tabuk, 2022). When these and similar studies are evaluated together, it can be said that the main criticism of VAR in its implementation phase is the idea that it disrupts the tempo and flow of the game (Dyer, 2015; Svantesson, 2014). However, considering that a referee has to make approximately more than 130 decisions in an international football competition (Helsen et al., 2006) and that any incorrect decision can have financial consequences for the club, players, and managers (Kolbinger & Lames, 2017), the use of VAR can be considered beneficial. In fact, in a study on tennis and other sports, it was stated that applications that may be like VAR were successful (Carboch et al., 2016; Kolbinger & Lames, 2017).

Although there are studies in the literature that are similar to our research, in some of these studies, researchers have made analyses more specific to the leagues in their own countries and evaluated their views on VAR (Carlos et al., 2019; Çankaya et al., 2020; Gürler & Polat, 2021; Han et al., 2020; Meneguete et al., 2022; Ponce-Bordón et al., 2022), while in some others, the time to examine the VAR application and the possibility of making the right decision are emphasised (Errekagorri et al., 2020; Spitz et al., 2021; Zhang et al., 2022). At this point, it is thought that it is important to evaluate the VAR application by taking into consideration big and sound organisations such as the World Cup and European Championships as well as leagues in terms of the reliability and usability of the system. There are few studies on this subject in the literature (Büyüklebi et al., 2022; Kubayi et al., 2021; Zhang et al., 2022). It is thought that it is important to consider both women's and men's national football teams separately, which is an important difference of our study from the existing studies, and that the study will contribute to the literature in this respect. In this direction, the aim of the study is to investigate the effect of VAR decisions on the matches in the 2022 FIFA World Cup and UEFA Women's EURO 2022. In the study, it is tried to examine in detail what the results may be if VAR is not applied, the decisions in the matches where VAR is applied and the results of these decisions.

METHOD

Research Design

Document analysis is a scientific research method that can be defined as the collection, review, questioning and analysis of various documents as the primary source of research data. This method is mostly used in the literature as a complement to other research methods, but it is also used as a stand-alone method (Sak et al., 2021). In document analysis, data are obtained by examining existing records and documents. It involves finding, reading, noting, and evaluating the sources for a specific purpose (Karasar, 2005). In other words, document analysis is a series of processes that take place in the process of examining and evaluating printed and electronic (computer-based and internet-accessible) materials (Bowen, 2009). Retrospective cohort study model, which is one of the subheadings of observational study, was used in the study. Retrospective study model, which is one of the subheadings of observational study, was used in the study. In retrospective studies, the identification or determination of data depends on the information recorded in the past. No addition can be made to the data. The researcher has no control over the data (Çaparlar & Dönmez, 2016).

Universe-Sample

A total of 95 matches (World Cup: 64; Women's Euro: 31) played by a total of 40 countries (World Cup: 24; Women's Euro: 16) were analysed by evaluating the matches in the 2022 FIFA World Cup and UEFA Women's EURO 2022 in terms of different parameters.

Ethical Approval

The ethics committee approval of this study was obtained from Bandırma Onyedi Eylül University Social and Human Sciences Research Ethics Committee with the decision dated 10.03.2023 and numbered 2023-2.

Data Collection

The data of the study were collected through FIFA official website (<https://www.fifa.com/fifaplus/en/home>) and UEFA official website (<https://www.uefa.com/>). VAR decisions in the tournaments were evaluated separately on 11 parameters (accuracy of the goal awarded, accuracy of the goal not awarded, goal cancellation, goal awarded, accuracy of the penalty awarded, accuracy of the penalty not awarded, penalty cancellation, penalty awarded, red card awarded, red card cancelled and other).

Data Analysis

The data were analysed in SPSS 25.0 package program and descriptive statistics; percentage and frequency values were used in the analysis. By showing the numbers and percentages of the data obtained, it was tried to reveal the use of VAR and its effect on the competitions.

RESULTS

Data on the use of the VAR system in the 2022 FIFA World Cup and UEFA Women's EURO 2022 are shown in Table 1.

Table 1. Total number of VARs applied in tournaments

Tournament Name	Played in	Total Number of Matches	Total Number of Applications to VAR
2022 FIFA World Cup	Qatar	64	28
UEFA Women's EURO 2022	England	31	41

The distribution of 69 positions analysed with the VAR system in 2022 FIFA World Cup (28) and UEFA Women's EURO 2022 (41) group and upper round matches is presented in Table 2.

Table 2. Total number of VARs applied in group competitions and upper rounds

Tournament Name	Group Matches	Last 16	Quarter Final	Semi Final	Final	Total
2022 FIFA World Cup	25	2	1	-	-	28
UEFA Women's EURO 2022	33	-	3	3	2	41

The distribution of 69 positions analysed with the VAR system in the competitions played in the 2022 FIFA World Cup (28) and UEFA Women's EURO 2022 (41) is presented in Table 3.

Table 3. Distribution of VAR decisions in tournaments

Tournament	Decisions	Number	%
2022 FIFA World Cup	Accuracy of Goal Awarded	1	%3.6
	Accuracy of the Disallowed Goal	-	-
	Goal Cancellation	7	%25
	Goal Decision	1	%3.6
	Accuracy of the Penalty Awarded	6	%21.4
	Correctness of the Penalty Not Awarded	2	%7.1
	Penalty Awarded	5	%17.8
	Penalty Cancellation	4	%14.3
	Red Card	1	%3.6
	Red Card Cancellation	-	-
	Other	1 (Penalty Decision)	%3.6
	Total	28	%100
UEFA Women's EURO 2022	Accuracy of Goal Awarded	15	%36.6
	Accuracy of the Disallowed Goal	1	%2.4
	Goal Cancellation	6	%14.6
	Goal Decision	1	%2.4
	Accuracy of the Penalty Awarded	3	%7.3
	Correctness of the Penalty Not Awarded	6	%14.6
	Penalty Awarded	6	%14.6
	Penalty Cancellation	2	%4.9
	Red Card	-	-
	Red Card Cancellation	1	%2.4
	Other	-	-
	Total	41	%100

When Table 2 is examined, it is determined that in the FIFA World Cup, with the VAR system, 1 goal given by the referees was decided to be correct, 7 goals were cancelled, 1 goal that was not counted was valid, 1 red card was given, 4 penalty decisions were cancelled, 5 penalty decisions were decided, 6 penalties given by the referees and 2 penalties not given were decided to be correct, 1 penalty was repeated due to rule violations, and a total of 28 decisions were controlled by the VAR system.

In the UEFA Women's EURO 2022, 15 goals awarded by the referees and 1 goal disallowed by the referees were decided to be correct, 6 goals were cancelled, 1 goal that was not counted was valid, 1 red card and 2 penalty decisions were cancelled, 6 penalty decisions were awarded, 3 penalties awarded by the referees and 6 penalties not awarded were decided to be correct, and a total of 41 decisions were checked by the VAR system.

At the end of the 2022 FIFA World Cup group competitions, the rankings in the groups are given in Table 4.

Table 4. 2022 FIFA World Cup group stage country rankings

A	B	C	D
Netherlands	England	Argentina	France
Senegal	USA	Poland	Australia
Ecuador	Iran	Mexico	Tunisia
Qatar	Wales	Saudi Arabia	Denmark
E	F	G	H
Japan	Morocco	Brazil	Portugal
Spain	Croatia	Switzerland	South Korea
Germany	Belgium	Cameroon	Uruguay
Costa Rica	Canada	Serbia	Ghana

At the end of the group competitions, Netherlands, Senegal, England, USA, Argentina, Poland, France, Australia, Japan, Spain, Morocco, Croatia, Brazil, Brazil, Switzerland, Portugal and South Korea qualified for the last 16 (Table 4).

The data showing what kind of differences may occur in the results of the group competitions without VAR application are given in Table 5.

Table 5. VAR decisions in group matches and their impact on the outcome of the match

Matches	Match Result	VAR Decision	Result of the Match Without VAR
Qatar - Ecuador	0-2	Goal cancellation (On the grounds of offside)	0-3
England – Iran	6-2	Penalty given (For foul play)	6-1
Belgium – Canada	1-0	Penalty given in favour of Canada	1-0 (Kanada penaltidan yararlanamadı)
Wales – Iran	0-2	1.Iran goal cancelled (for offside) 2.Wales red card	0-3
Poland – Saudi Arabia	2-0	Penalty given (For foul play)	2-0 (Saudi Arabia failed to capitalise on a penalty)
Belgium – Morocco	0-2	Morocco goal cancellation (On the grounds of offside)	0-3
Spain – Germany	1-1	Germany goal cancellation (On the grounds of offside)	1-2
Cameroon – Serbia	3-3	Cameroon goal decision (No offside)	2-3
Brazil – Switzerland	1-0	Brazil goal cancellation (On the grounds of offside)	2-0
Holland – Qatar	2-0	Netherlands goal cancellation (On the grounds of handball)	3-0
Tunisia – France	1-0	France goal cancellation (On the grounds of offside)	1-1
Croatia – Belgium	0-0	Croatia penalty cancellation (On the grounds of offside)	0-0 (If the penalty had been awarded and Croatia had scored, the score would have changed)
Ghana – Uruguay	0-2	Penalty given (For foul play)	0-2 (Ghana failed to capitalise on a penalty)

When Table 5 is analysed, it is seen that there are 3 matches that can directly affect the result in the absence of VAR. It can be said that the most important of these is the Spain-Germany match. If there was no VAR, Germany would have exited from Group E as the group leader,

while Spain would have failed to qualify for the last 16 round and would have bid farewell to the World Cup. In the Tunisia - France match, France would have emerged as the group leader with 8 points, while Tunisia would have finished the group in third place with 2 points instead of 4. In the Cameroon - Serbia match, if there was no VAR, Serbia would have finished third in the group and Cameroon would have finished fourth.

Without the VAR application, the rankings that would have been formed in the groups at the end of the group matches played in the 2022 FIFA World Cup are given in Table 6.

Table 6. Country rankings at the end of the 2022 FIFA World Cup group stage without VAR

A	B	C	D
Netherlands	England	Argentina	France
Senegal	USA	Poland	Australia
Ecuador	Iran	Mexico	Tunisia
Qatar	Wales	Saudi Arabia	Denmark
E	F	G	H
Germany	Morocco	Brazil	Portugal
Japan	Croatia	Switzerland	South Korea
Spain	Belgium	Serbia	Uruguay
Costa Rica	Canada	Cameroon	Ghana

It is understood that the same teams would have been promoted to the last 16 in Groups A, B, C, D, F, G and H without the VAR application. However, it was seen that Germany, who did not qualify for the last 16 in Group E, would have qualified as the group leader and Spain, who qualified for the last 16 as the group runner-up, would not have exited the group and Japan would have exited the group as the group runner-up, not as the group leader.

The data showing what kind of differences may occur in the results of the second round (last 16) competitions without VAR application are given in Table 7.

Table 7. VAR decisions in the second round (last 16) matches and changes in the result of the match

Match	Match Result	VAR Decision	Result of the Match Without VAR
France – Poland	3-1	1. Penalty decision in favour of Poland (for offside) 2. Repeat penalty in favour of Poland	3-0

Without VAR, there would have been no change in the result of the last 16 matches, only the final score would have changed. The data showing what kind of differences may occur in the results of the quarter-final matches without VAR application are given in Table 8.

Table 8. VAR decisions in the quarter-final matches and the changes they created in the result of the match

Match	Match Result	VAR Decision	Result of the Match Without VAR
England - France	1-2	Penalty decision in favour of England (for a foul)	1-2 (England failed to capitalise on a penalty)

Without VAR, there was no change in the quarter-final match result due to England missing the penalty. In the 2022 FIFA World Cup, VAR decisions were not made in the semi-final and final matches, so they were not tabulated.

UEFA Women's EURO 2022, the rankings in the groups at the end of the group competitions are given in Table 9.

Table 9. UEFA Women's EURO 2022 group stage standings

A	B	C	D
England	Germany	Sweden	France
Australia	Spain	Netherlands	Belgium
Norway	Denmark	Switzerland	Iceland
Northern Ireland	Finland	Portugal	Italy

At the end of the group competitions, England, Australia, Germany, Spain, Sweden, Sweden, Netherlands, France, and Belgium qualified for the quarterfinals (Table 9). The data showing the differences in the results of the group competitions without VAR application are given in Table 10.

Table 10. VAR decisions in group matches and their impact on the outcome of the match

Matches	Match Result	VAR Decision	Result of the Match Without VAR
Norway – Northern Ireland	4-1	Penalty given	3-1
Germany – Denmark	4-0	Goal cancellation (For offside)	5-0
Belgium – Iceland	1-1	Penalty given in favour of Iceland	1-1 (İzlanda penaltidan yararlanamadı)
Sweden – Switzerland	2-1	Penalty awarded cancelled	2-2 (If Switzerland had scored)
Netherlands – Portugal	3-2	1. Penalty given in favour of Portugal. 2. Netherlands - Goal cancelled (for offside)	4-1
France – Belgium	2-1	Penalty given in favour of France	2-1 (France failed to capitalise on a penalty)
Switzerland – Netherlands	1-4	Goal given (Not offside)	1-3
Sweden – Portugal	5-0	Goal cancellation (For offside)	6-0
Iceland – France	1-1	1. Goal cancelled out (France) (for offside) 2. Goal cancelled out (France) (for handball) 3. Penalty given in favour of Iceland	0-3

According to Table 10, the match that would have directly affected the result without the VAR application would have been the Iceland-France match. Without the application, the result of the match would have been 3-0 in favour of France and France national team would have completed the group with 9 points. In the other match, Sweden-Switzerland, if the penalty had not been cancelled and Switzerland had scored the penalty, the ranking in Group C would have changed and Sweden would have dropped to 2nd place with 5 points.

Without the VAR application, the rankings that would have been formed in the groups at the end of the group matches played in the UEFA Women's EURO 2022 are given in Table 11.

Table 11. Country rankings at the end of the UEFA Women's EURO 2022 group competitions without VAR application

Group A	Group B	Group C	Group D
England	Germany	Netherlands	France
Australia	Spain	Sweeden	Belgium
Norway	Denmark	Switzerland	Iceland
Northern Ireland	Finland	Portugal	Italy

Without the VAR application, the same teams would have advanced to the quarterfinals at the end of the group competitions (Table 11). However, the Netherlands national team would have finished 1st in Group C instead of Sweden national team (assuming that Switzerland scored the penalty in the Sweden-Switzerland match) and would have played against Belgium national team in the quarter-final match, not against France national team.

The data showing what kind of differences may occur in the results of the quarter-final matches without VAR application are given in Table 12.

Table 12. VAR decisions in quarter-final matches and changes in the result of the match

Matches	Match Result	VAR Decision	Result of the Match Without VAR
Sweden – Belgium	1-0	Goal cancellation (For offside)	2-0
France – Netherlands	1-0	Penalty given	0-0 (Goes to penalties)

Without the VAR application, at the end of the quarter-final competitions, Sweden would have advanced to the next round, while the winner of the France-Netherlands match would have been determined by penalties. At the end of the penalties, France could have reached the semi-finals again, or the Netherlands national team could have been the winner and matched with the Germany national team in the semi-finals.

DISCUSSION

This study was conducted to evaluate the effect of VAR application on the competitions played in the 2022 FIFA World Cup and UEFA Women's EURO 2022. In the study, the effect of VAR on the match results and what kind of results may occur in the absence of VAR are tried to be revealed. In this context, VAR control was provided 28 times in the 2022 FIFA World Cup and 41 times in the UEFA Women's EURO 2022 (Table 1). It is thought that this situation is due to the presence of more controversial positions or positions that need to be controlled in competitions involving women. In addition, it was observed that 25 of the VAR controls in the 2022 FIFA World Cup were in the group competitions, 2 in the last 16 round and 1 in the quarter-final, while there was no VAR control in the semi-final and final. In the UEFA Women's EURO 2022, it was determined that 33 of the VAR controls were in the group competition, 3 in the quarterfinal, 3 in the semifinal and 1 in the final (Table 2). When the 2022 FIFA World Cup was evaluated in terms of the distribution of VAR decisions, it was found that it was mostly (25%) used for goal cancellation, while in the UEFA Women's EURO 2022, it was mostly (36.6%) used to determine the correctness of the awarded goal (Table 3).

In the 2022 FIFA World Cup, when the effect of VAR decisions on the results of the group matches was evaluated, it was seen that it had an effect on the results of Spain-Germany (Germany goal cancellation), Cameroon-Serbia (Cameroon goal decision) and Tunisia-France (France goal cancellation) matches (Table 5). If VAR had not been applied in the 2022 World Cup, it is understood that the German national team, which did not qualify for the last 16 in Group E, would have advanced as the group leader, and Spain, which reached the last 16 as the group runner-up, would not have exited the group; also Japan would have advanced to the next round as the group runner-up, not the group leader. On the other hand, it was observed that there were 2 VAR decisions in the France-Poland match in the last 16 round, but they did not change the result (Table 7), and in the England-France quarter-final match, there was 1 VAR decision (England penalty decision), but it did not change the result since England could not benefit from the penalty awarded (Table 8). As a result, it can be said that VAR has a direct impact on the 2022 World Cup only in the group competitions.

In the UEFA Women's EURO 2022, when the effect of VAR decisions on the results of the group matches was evaluated, it was seen that VAR intervened in 3 decisions in the Iceland-France match (France 2 goal cancellations, Iceland penalty decision) and this had a direct effect on the match result. Furthermore, in the Sweden-Switzerland match, the penalty awarded in favour of Switzerland was cancelled as a result of the application to VAR and this decision was determined to have influenced the result of the match. Otherwise, assuming that Switzerland had converted the penalty into a goal, the match would have ended in a draw and the Swedish national team would have qualified for the next round as the runner-up, not the leader. In this case, he would not have met the Belgian national team, but the French national team in the quarterfinals. On the other hand, in the France-Netherlands quarterfinal match, if the penalty was not given in favour of France with the VAR application, the match would have ended in a draw and the match would have gone to extra time. Considering all these results, it can be said that VAR had a direct impact on some of the group and quarter-final competitions in the UEFA Women's EURO 2022.

VAR is an example of how it can be used to assist this process in decision-making. This system has had a significant impact on decision-making in professional level football. In 2195 competitions played in 13 countries, it was reported that 9732 checks for potential game-changing events took place in an average time of 22 seconds. The correct decision after VAR intervention was found to be significantly higher than the referee's initial decision, and this accuracy was reported to increase from 92.1% to 98.3% (Spitz et al., 2021).

FIFA also announced that this rate was 99.3% in the 2018 World Cup (BBC, 2022). Looking at similar studies in the literature, it was found that more than 34 goals were disallowed in the first season of the use of the VAR system in the Premier League and offside decisions continued to create a significant controversy (Mather, 2020). Kubayi (2020) reported in his study of the 2018 World Cup that most goals were scored from penalties, which can be attributed to the use of Video Assistant Referees (VARs), which are designed to review video footage of controversial or uncertain decisions and advise the referee if a wrong decision is made. Vergonis et al. (2019) stated in their study that 13 goals (7.6% of total goals) were scored after the use of VAR in the 2018 FIFA World Cup, and the effect of these goals on the outcome of the game was very important. At the end of their study, they reported that VAR had a decisive

effect on goal scoring and that most of the goals scored through VAR (60%) were due to penalty kicks. Although there are studies suggesting that slow motion can make an event appear as if it was previously thought, rather than what it actually was, and can, for example, turn a yellow card foul into a red card (Caruso et al., 2016; Spitz et al., 2018), and that referees may therefore be biased (Caruso et al., 2016; Spitz et al., 2018), VAR technology has created opportunities for a large number of referees and match officials (Ugondo and Tsokwa, 2019) and has also made socio-economic contributions (Tabuk, 2022).

As a result, it can be said that although the VAR system faced some reactions when it was first used, it contributed to the accuracy and reliability of the decisions made in the competition and the tournament or league was shaped in line with the results that the teams deserved.

RECOMMENDATIONS

Studies similar to our study can be continued in the next seasons and tournaments to be organised, and comparisons can be made with respect to previous seasons. In addition, all components of the football community can be informed through such studies that the VAR system is an important application that supports the referee in order to eliminate the uncertainties experienced during the competition in football, and in this way, prejudiced thoughts and negative opinions that may occur on referees and referee decisions can be prevented.

Conflicts of Interest: There is no personal or financial conflict of interest within the scope of the study.

Authors' Contribution: Study Design- GB, SNM; Data Collection- GB, SNM; Statistical Analysis- GB, SNM; Manuscript Preparation- GB, SNM. All authors read and approved the final manuscript.

Ethical Approval

Ethics Committee: Bandırma Onyedi Eylül University Social and Human Sciences Research Ethics Committee

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