



EVALUATION OF VIDEO CHALLENGE SYSTEM IN VOLLEYBALL FROM THE POINTS OF CLASSIFICATION REFEREES

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Abstract:

In order to prevent referee mistakes in volleyball, Video Challenge System has been used in our country since 2015. The aim of the research is to examine the functionality of this system from the perspective of Classification Volleyball Referees assigned in the Efeler and Sultans Leagues and to offer opinions and suggestions for the development of the system. The research was carried out with the screening model, which is one of the quantitative research methods. Participants were reached with a 20-question Video Challenge System Questionnaire, which was developed for the purpose of collecting data in the research. The sample of the research consists of a total of 67 people who participated in the interim seminar with the participation of A and AB Classification volleyball referees in Ankara on 18 December 2021, with a physical questionnaire. The analysis of the data was made with the SPSS 26.0 program and the data on demographic variables were analyzed according to frequency analysis. When the findings of the study are examined; 91.1% of A and AB Classification Volleyball Referees said that the Video Challenge System contributed positively to the course of the match, 98.5% found the VCS applied in our country useful, 94% said that the referees were more comfortable in the matches played with VCS. observed that, 98.6% of them stated that VCS minimized the wrong decisions in numbers that could affect the match or set result, 91.1% stated that VCS directly positively affected the set or match result in competitions with high game quality, and 97%. They stated that the VCS facilitated the work of the referees in terms of making decisions, especially in the most difficult moments of the match. As a result, it has been concluded that the satisfaction of the referees who referee the Efeler and Sultans

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League matches, which are the highest level leagues of the Turkish Volleyball Federation, with the Video Challenge System is at a very high level. With the results obtained, it is thought that the Video Challenge System has a positive contribution to the fair conclusion of the matches and the surrender of the right.

Keywords: volleyball, video challenge system, referee

1. Introduction

The sport, which was less sensational when it was practiced amateurishly, has become completely professional today (Şahin, 2009). This professionalization starts with the transfer of athletes from many countries of the world for the success of the club, to the modernization of gyms and equipment and changes in sports rules, making both volleyball and sports more attractive. In sports that are attractive to spectators, the struggle between forces can sometimes be interrupted by referee decisions. To eliminate this situation, to protect rights, and to ensure justice, the Video Challenge System has become an indispensable approach. The international success achieved in volleyball at the level of clubs and national teams in recent years is known. It is not a new phenomenon that national and international achievements in sports create value in the daily life of society (Şahin, 2009). It is clear that successful matches in sports should be limited to the centimeter, gram, and second system only (Şahin, 2018).

Activities carried out individually or as a group for the purpose of competition, exertion, and entertainment in line with the determined rules are called sports (Dönmez, 2002). Sports have taken their place in our lives for many different purposes until today. The concept of sports has developed day by day with similar stages such as making people's appearance more attractive, providing entertainment to favorite people, and attracting the attention of a community (Çevik, 2022).

Today, the elements that make up sports can generally be examined under three main headings: spectators, athletes, and referees (Beyaztaş, 2019). The important basic element of sports is the referees, who compete on the field of play together with the athletes and hold the fate of that match in their hands (Pepe et al., 1999).

Volleyball is a sport that requires these issues: being able to act in harmony with the team dynamics, taking responsibility in the team, working in cooperation, being a leader, being self-confident, and making appropriate and timely decisions (Aracı, 2001). The most important and interesting feature of volleyball is the rapid succession of ball plays and various defensive and offensive variations. Today's volleyball, aims to prioritize a show with high viewing pleasure, and since the audience wants to win, they expect a sportive show with team or individual struggles of the athletes instead of referee mistakes (TVF Referee Guide and Instructions, 2023). Also, volleyball includes many important interconnected elements. The harmonious interaction of these elements puts volleyball in a special position among rally games (Fröhner, 1999). The fast game structure of volleyball makes it difficult for the referees who referee the competitions of

this branch to make decisions, and the wrong decisions they may make in the competitions may negatively affect them and be under the pressure of the fans (Akarçeşme et al., 2023). However, referee mistakes in matches can cause socially and economically devastating problems for clubs, athletes, and spectators, causing referees to lose self-confidence and increase anxiety and stress levels (Koçak, 2019).

In refereeing, it is a priority that the game rules are at the same level for all participants, fair and impartial (Gökdemir & Kara Küçük, 1996). The need for technological systems is increasing day by day in order to keep up with the speed of high-level games in competitions and to assist referees in the decisions they make in these competitions (Tükenmez, 2021). In this context, it is inevitable to examine whether the video challenge system used in the high-level matches of indoor volleyball, whose popularity is increasing day by day, contributes positively to the referees' making the right decisions. For this purpose, this study aimed to determine the satisfaction levels of A and AB Class volleyball referees with the use of VCS technology.

2. Method

The research was carried out with the scanning model, one of the quantitative research methods, and the data obtained was studied. In order to collect data in the study within the framework of the scanning model, a 20-question survey developed by the researchers about the Video Challenge System applied in indoor volleyball was created. The pre-test-post-test study was planned and applied to Gedik University Faculty of Sports Sciences 4th grade students in a classroom environment with an interval of one month. Questions that could not be understood or answered during the pre-test were redesigned and the post-test was applied. During the post-test phase, it was observed that the participants answered all questions clearly and completely. The validity study of the survey was carried out with the participation of Gedik University Faculty of Sports Sciences 4th grade students in the classroom environment and was checked by the pre-test-post-test method within a period of one month.

2.1 Universe and Sample

The study population of the research consists of referees who attended the intermediate seminar for A and AB Class Volleyball Referees organized by the Turkish Volleyball Federation between 18 December 2021.

The sample of the research was collected by participating in a physical survey in the seminar hall of the hotel where 67 referees from the 70 A and AB Class referees who refereed the matches between Efeler and Sultans, the top league of the Turkish Volleyball Federation, attended the seminar.

2.2 Data Collection Tool

It was collected with the Personal Information Form created by the researchers in the light of the demographic information of the participants; To examine the Audience Video

Challenge System in Indoor Volleyball, a multiple-choice and 5-point Likert system survey developed by the researchers was used, such as "strongly disagree, disagree, undecided, agree and strongly agree". For the study, the necessary permissions were obtained from the Turkish Volleyball Federation and the data was obtained by taking the opinions of A and AB Class volleyball referees.

2.3 Analysis of Data

IBM SPSS 26 statistical program was used to analyze the data obtained from the 20-question Video Challenge System survey form prepared by the researchers. Data on demographic variables were examined according to frequency and percentage analysis. The survey questions were interpreted according to frequency, percentage, and average analyses.

3. Findings

3.1 Information on the Demographic Characteristics of the Participants

Table 1: Gender Distribution of Participants

Variables	N	%
Female	13	19,40
Male	54	80,60
Total	67	100

As seen in Table 1, 19.40% of the participants in the study are female and 80.60% are male.

Table 2: Age Status of Distribution of Participants

Variables	N	%
25-30 age range	1	1,5
31-35 age range	4	6,0
36-40 age range	24	35,8
41-45 age range	27	40,3
46-50 age range	6	9,0
51-55 age range	5	7,5
Total	67	100

As seen in Table 2, the majority of the participants included in the study are in the 41-45 age range.

Table 3: Educational Status Distribution of Participants

Variables	N	%
Associate Degree	2	3,00
Bachelor Degree	49	73,10
Postgraduate	16	23,90
Total	67	100

As seen in Table 3, the educational status of the participants included in the study is 3.00% associate degree graduate, 73.10% undergraduate degree and 23.90% postgraduate degree.

Table 4: Licensed Volleyball Playing Status

Variables	N	%
Yes	38	56,70
No	29	43,30
Total	67	100

As stated in Table 4, it is seen that the majority of the participant referees (56.70%) included in the study played volleyball with a license.

Table 5: Referee Cockade Distribution

Variables	N	%
National	50	74,6
International	17	25,4
Total	67	100

As stated in Table 5, 74.6% of the participants in the study have national referees cockade and 25.4% have international referee cockade.

Table 6: Active Referee Year Duration Status

Variables	N	%
5-10 Years	8	11,9
11-15 Years	10	14,9
16-20 Years	29	43,30
21-25 Years	14	20,9
26-30 Years	5	7,5
31-35 Years	1	1,5
Total	67	100

As stated in Table 6, 43.30% of the participants included in the study have been active referees for 16-20 years.

Table 7: Preference Distribution for Watching the Competition

Variables	N	%
From Sport Hall	28	41,80
From TV	36	53,70
From IP TV	3	4,5
Total	67	100

As stated in Table 7, it is seen that 41.80% of the participants in the study preferred to watch the competitions from the gym, 53.4% from television, and 4.5% from IP TV. It is seen that participants mostly prefer to watch the competitions on television.

Table 8: Higher Education Graduation Status in Sports Sciences

Variables	N	%
Yes	14	20,9
No	53	79,1
Total	67	100

As stated in Table 8, 79.10% of the participants included in the study did not have a Higher Education Graduate in Sports Sciences.

3.2 Frequency, Percentage, and Average Findings of Participants' VES Evaluation Survey Data

A VCS evaluation survey consisting of 20 questions on a 5-point Likert scale was administered to the participants.

Table 9: Video Challenge System 3rd Survey
Question Frequency, Percentage, and Average Values

3th VCS Question	N	%	A
I totally disagree	0	0,0	4,87
I disagree	0	0,0	
I'm undecided	2	3,0	
I agree	5	7,5	
I totally agree	60	89,6	
Total	67	100	

"Video Challenge System (VCS) contributes positively to the match." The frequency, percentage and average distribution of the answers given by the participants to the question are shown in Table 11.

Table 10: Video Challenge System 4th Survey
Question Frequency, Percentage, and Average Values

4th VES Question	N	%	A
I totally disagree	0	0,0	4,82
I disagree	0	0,0	
I'm undecided	1	1,5	
I agree	10	14,9	
I totally agree	56	83,6	
Total	67	100	

"I find the VCH implemented in our country useful." The frequency, percentage, and average distribution of the answers given by the participants to the question are shown in Table 12.

Table 11: Video Challenge System 9th Survey
Question Frequency, Percentage, and Average Values

9th VCS Question	N	%	A
I totally disagree	1	1,5	4,63
I disagree	0	0,0	
I'm undecided	3	4,5	
I agree	15	22,4	
I totally agree	48	71,6	
Total	67	100	

“I observe that the referees are more comfortable in the matches played with VCS.” The frequency, percentage, and average distribution of the answers given by the participants to the question are shown in Table 11.

Table 12: Video Challenge System 10th Survey
Question Frequency, Percentage, and Average Values

10th VCS Question	N	%	A
I totally disagree	1	1,5	4,85
I disagree	0	0,0	
I'm undecided	0	0,0	
I agree	6	9,0	
I totally agree	60	89,6	
Total	67	100	

“VCS minimizes incorrect decisions on points that could affect the match or set outcome.” The frequency, percentage, and average distribution of the answers given by the participants to the question are shown in Table 12.

Table 13: Video Challenge System 13th Survey
Question Frequency, Percentage, and Average Values

13th VCS Question	N	%	A
I totally disagree	0	0,0	4,58
I disagree	1	1,5	
I'm undecided	5	7,5	
I agree	15	22,4	
I totally agree	51	68,7	
Total	67	100	

“VCS has a direct positive effect on the set or match result in competitions with high game quality.” The frequency, percentage, and average distribution of the answers given by the participants to the question are shown in Table 13.

Table 14: Video Challenge System 17th Survey
Question Frequency, Percentage and Average Values

17th VCS Question	N	%	A
I totally disagree	1	1,5	4,76
I disagree	1	1,5	
I'm undecided	0	0,0	
I agree	9	13,4	
I totally agree	56	83,6	
Total	67	100	

"It makes the referees' job easier, especially in terms of making decisions at the most difficult moments of the match." The frequency, percentage, and average distribution of the answers given by the participants to the question are shown in Table 14..

4. Discussion

The popularity of volleyball in our country and around the world is increasing day by day and rapidly. Supporting the volleyball branch, which has a high degree of traceability, with technological aids contributes to the fair playing of the game and therefore to the increase of viewing pleasure.

In this study, the satisfaction levels of A and AB Class Volleyball Referees with the Video Evaluation System were examined.

When the findings of the study were examined; it was found that 91.1% of A and AB Class Volleyball Referees said that the Video Challenge System made a positive contribution to the match. When looking at the literature, there is no study on the satisfaction of volleyball referees with the Video Challenge System. Looking at the studies conducted, Çevik (2022) examined the VCS from the perspective of the spectators and concluded that 89.9% of the spectators said that the Video Challenge System made a positive contribution to the match.

In our study, it was determined that 98.5% of A and AB Class Referees found the use of VCS applied in our country useful in competitions. Regarding the subject, Altıntaş (2022), in his study investigating the effect of the Video Challenge System on the decision-making of referees, stated that VCS helps referee the volleyball matches objectively and that the use of this system is found useful by the referees. Looking at the different studies conducted, Çevik (2022) stated that in his study examining the VCS from the audience's perspective, 86.4% of the audience responded positively to the question "I find the VCS used in our country useful." In our study, it was determined that 94% of the referees observed that the referees were more comfortable in the matches played with VCS. (Vangphumyai, 2016) found similar results with our study in their study. In this study, it was stated that when the referee had the right to request a VCS review of the referee's decision, the referees were more relaxed and less likely to make wrong or controversial decisions. When looking at different studies on the subject, Çevik (2022) examined the VCS from the perspective of the audience and found that 74.4% of the participants

responded positively to the question "I observe that the referees are more comfortable in the matches played with the VCS."

In our study, it was determined that 98.6% of the referees stated that VCS minimized incorrect decisions that could affect the match or set outcome. Similar results emerge in other studies. (Altıntaş, 2022) stated in his study that 90% of the volleyball referees who participated in the research had positive effects of VCS on match management. When looking at different studies on the subject, Çevik (2022) examined VCS from the perspective of the audience and stated that "VCS minimizes incorrect decisions in numbers that may affect the match or set outcome." 93.2% of the audience participants stated that they responded positively to the question.

In our study, it was determined that 91.1% of the referees stated that VCS had a direct positive impact on the set or match result in competitions with high game quality, and 97% stated that VCS made their job easier, especially in terms of making decisions at the most difficult moments of the match. Looking at other studies, (Ghezelsefloo & Alavi, 2022) stated that technologically supported image systems make it easier for referees to make decisions and help them make safer decisions. Looking at the different studies on the subject, Çevik (2022) examined VCS from the perspective of the spectators and stated that "VCS has a direct positive impact on the set or match result in competitions with high game quality." It was stated that 86.3% responded positively to the question, and 93.4% responded positively to the question "VCS makes the referees' job easier, especially in terms of making decisions at the most difficult moments of the match."

5. Conclusion and Suggestions

The Video Challenge System, which allows the footage of the game and ball movements to be re-watched in volleyball competitions, upon the request of the coach and the referee participants, in order to ensure the delivery of rights and correct management, has been used in our country since 2015.

As a result, the results obtained from A and AB Class Volleyball Referees stated that the referees who referee the Efeler League and Sultans League matches, one of the top level leagues of the Turkish Volleyball Federation, are highly satisfied with the Video Challenge System, that it reduces referee mistakes, ensures the distribution of the right to the right participant, and that the system has a significant positive contribution to volleyball. It was understood from the survey data. According to the data obtained, it has been determined that when the waiting time during the VCS request review is above the reasonable waiting time, it causes the rhythm of the game to decrease. It can be said that it would be appropriate to give referees the authority to not accept such requests in order to prevent volleyball coaches from tactically requesting VCS to stop the opponent's high performance. It is recommended to develop solutions to reduce this waiting time. The number of times teams have the right to use VCS in a set can be stated on the scoreboard in the arena. At the end of rallies that result in offensive hits and block points, the net contact control requested by the teams leads to debate as to whether the players' contact

with the net occurs before or after they are out of the game. In order to prevent these discussions, it is recommended to present the image of both the ball out of play and the players touching the net in one frame in the image transmitted to the hall and the broadcaster. It can be said that appointing a VCS Referee may be more beneficial as it is anticipated that it will contribute to reducing the review time in the Play-Off Final Stage matches of the Efeler and Sultans league.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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