Un estudio analítico del uso de la tecnología VAR y su relación con la vacilación psicológica de los árbitros en la Liga Profesional Iraquí

An analytical study of the use of VAR technology and its relationship to the psychological hesitation of referees in the Iraqi Professional League

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Abstract

Objective: Studying the opinions of referees on the use of VAR technology in Iraqi stadiums, and the extent of its impact on their decisions during matches, in addition to identifying their level of psychological hesitation.
Research methodology: The descriptive approach was adopted in two ways survey and correlation. The research community was represented by the referees of the Iraqi Professional Football League, numbering (80) referees. The researcher chose all referees as a sample, as the sample amounted to (80) referees, i.e. a percentage of (100%) of the community. After that, the researcher divided the selected sample into a survey consisting of (10) referees. To build the (VAR) questionnaire and find the scientific foundations for the psychological frequency scale, (80) referees were chosen.
Result: Through the data of the targeted sample and comparing the results of the weighted average, it is clear that the level of the obtained scores varied in (4.45 - 2.54), i.e. with a good rating, and this indicates the good value of the level of (VAR) technology from the referees' point of view. From reviewing the paragraphs of the final questionnaire, we note that (VAR) technology supports and assists the match referee in making his decisions, and at the same time we should not marginalize the role of the referee and (VAR) becomes the one who makes the decision on behalf of the referee.
Conclusions: The VAR technology has clearly and noticeably contributed to the development of the game of football and the absence of refereeing errors in matches by a percentage that may exceed (95%) in matches.

Keywords

VAR technology; psychological hesitation; professional league; football.

Resumen

Objetivo: Estudiar las opiniones de los árbitros sobre el uso de la tecnología VAR en los estadios iraquíes y el alcance de su impacto en sus decisiones durante los partidos, además de identificar su nivel de vacilación psicológica.
Metodología de investigación: Se adoptó el enfoque descriptivo en dos vertientes: encuesta y correlación. La comunidad de investigación estuvo representada por los árbitros de la Liga Profesional de Fútbol Iraquí, compuesta por (80) árbitros. El investigador eligió a todos los árbitros como muestra, ya que la muestra ascendía a (80) árbitros, es decir, un porcentaje del (100%) de la comunidad. Posteriormente, el investigador dividió la muestra seleccionada en una encuesta compuesta por (10) Árbitras. Para construir el cuestionario (VAR) y encontrar los fundamentos científicos de la escala de frecuencia psicológica, se eligieron (80) árbitros.
Resultado: A través de los datos de la muestra objetivo y comparando los resultados del promedio ponderado, se desprende que el nivel de las puntuaciones obtenidas varió en (4,45 – 2,54), es decir, con una buena valoración, y esto indica el buen valor del nivel de la tecnología (VAR) desde el punto de vista de los árbitros. De la revisión de los párrafos del cuestionario final, observamos que la tecnología (VAR) apoya y asiste al árbitro del partido en la toma de sus decisiones, y al mismo tiempo no debemos marginar el papel del árbitro y pasar a ser el (VAR) quien toma la decisión en nombre del árbitro.
Conclusiones: La tecnología VAR ha contribuido de forma clara y notoria al desarrollo del juego del fútbol y a la ausencia de errores arbitrales en los partidos en un porcentaje que puede superar el (95%) en los partidos.

Palabras clave

Tecnología lejana; Tenía ganas de ir en bicicleta; Liga Profesional; Fútbol americano.

Introduction

Many negative behaviors are the result of the rapid development witnessed by the world and its effects are reflected on humans in all fields and are also affected by the surrounding negative behaviors and phenomena, including the trait of psychological hesitation, which has become almost general and is a very dangerous psychological phenomenon and is considered one of the psychological problems that hinder athletic excellence (Khudhair et al., 2022).

In addition, mental stimulation of performance creates a nervous state for the stimulus that causes sensory reactions used to correct the path and try to do so in the next times, which is observed by making the right decisions, and sports confidence is also an important psychological factor in developing the skill level of a referee or football player, which leads to a sense of motivation to achieve in order to perform better.(Hashem et al., 2022) .

In recent years, football has witnessed a great development in the use of technology, and one of the most prominent of these developments was the introduction of video assistant referee (VAR) technology, which aims to reduce refereeing errors and achieve justice in matches. This technology relies on reviewing important refereeing decisions using video recordings, which helps referees make more accurate decisions in controversial cases, such as goals, penalties, red cards, and confirming the identity of the offending players (Khudhair et al., 2022

Despite the benefits provided by the VAR technology, its use may psychologically affect referees, as they face increasing pressure while making crucial decisions. One important psychological aspect that may be affected by this technology is psychological hesitation, which expresses a state of doubt and hesitation that may affect the referee when making a certain decision; for fear that it will be modified or canceled after reviewing the videoc

Relying on the VAR technology can reduce the referee's confidence in his field decisions, as he may become more hesitant to make immediate decisions, waiting for support or correction from the video room. Also, reviewing decisions repeatedly may affect the rhythm of the match and increase the psychological pressure on referees, especially in decisive matches (Khudhair et al., 2022).

VAR is a refereeing assistant system for football, which aims to review refereeing decisions using video recordings and communicate with the main referee via a headset when needed. The technology was developed in early 2010 under the supervision of the Royal Dutch Football Association (KNVB), where it underwent official tests during the 2012-2013 season of the Dutch Eredivisie. By 2014, the KNVB had submitted a petition to the International Football Association Board (IFAB) to make amendments to the laws of the game that would allow the technology to be used in wider trials. The board approved the request during its 2016 meeting, paving the way for the technology to be officially adopted. (Khudhair et al., 2022).

The principle of VAR technology is based on the philosophy of "minimal intervention for maximum benefit", meaning that it is used only in cases necessary to ensure fairness. The system aims to correct clear refereeing errors. FIFA has also warned players and team officials against excessive objection to the referee to request the use of technology, as it is forbidden to point to the video screen, it is forbidden to enter the video room, and whoever violates this is subject to direct expulsion.

Instances of using VAR technology: The referee can resort to VAR technology in only four

Identifying the offending player

Ensuring that the correct player is given a yellow or red card when a penalty foul occurs.

The mechanism of VAR during matches is that the VAR team, located in the video operation room, reviews any refereeing decision that falls within the four reviewable cases. This process is usually done in a “silent selection” manner, i.e. without the need to stop play, which reduces delays in the match. However, in some cases, the VAR team may ask the main referee to review the footage himself via the VAR screen located on the side of the pitch, which may lead to a temporary stoppage of play.

- When the referee reviews a shot using VAR, there are three possible scenarios:

- Cancellation of the decision: Based on the recommendation of the VAR team.
- Field review: The referee watches the shot on the screen and makes his final decision.
- The on-field review allows the referee to either maintain or change his initial decision.

It is important to emphasize that the final decision always belongs to the main referee, even if it contradicts the VAR team's recommendation. When conducting an on-field review, the referee can either confirm or overturn his initial decision. In fact-based cases, such as offside, the VAR makes the final decision. Therefore, VAR technology has become an essential part of modern football, as it seeks to achieve justice and reduce refereeing errors.. Despite the major role that VAR technology plays in reducing refereeing errors and achieving justice in matches, it is not without flaws and challenges that affect the flow of play and the efficiency of its use. The most prominent of these challenges are:

Frequent stoppages and breaking the rhythm of the match (Khudhair et al., 2022)

Reviewing refereeing shots takes a long time, which leads to the match being stopped several times during the match, which may affect the pace of play and reduce the enthusiasm of fans and players.

Lack of refereeing experience among VAR supervisors

In many cases, video technology officials do not have sufficient refereeing experience, which makes them vulnerable to errors in analyzing shots and making appropriate decisions.

Technical problems and high costs

The VAR system may face technical problems that affect the accuracy of its decisions, such as insufficient camera angles or delayed display of shots, which leads to controversial decisions. This technology also requires a large budget to install and maintain, which makes its application difficult in some countries that lack sufficient financial resources.

The need for intensive training for referees

The use of VAR requires intensive training courses for referees in order to master dealing with the technology correctly, and reduce the rate of refereeing errors during matches.

Hence, the importance of studying the relationship between the use of VAR technology and the psychological hesitation of referees emerges, to know the extent to which this technology affects their self-confidence, and making their decisions quickly and accurately, and working to provide solutions that help referees deal with the psychological pressures associated with the use of this technology and as it seeks to shed light on an important psychological aspect related to football referees, which is psychological hesitation when making a decision. Through this study, a deeper understanding of how VAR technology affects referees can be provided, and thus mechanisms can be proposed to support them psychologically and train them to make more decisive decisions.

The interest in football referees comes from their fundamental importance in the game and the extent of their contribution to its enjoyment, the safety of players and the achievement of justice. Those interested and concerned with football have taken the process of following up, analyzing and studying the behavior of referees in order to qualify them according to accurate and comprehensive scientific curricula and prepare them properly in line with their position in leading the match and reaching it to safety with the least possible number of errors, controlling and overcoming pressures, as well as controlling psychological emotions that affect his decisions and quick mental and physical responses (Hani & Mohammed , 2019). The problem of the research lies in the fact that football referees face many pressures during matches, and with the introduction of the (VAR) technology, these pressures have increased due to the need to review decisions and make accurate decisions that may affect the course of the match. It is noted that some referees may hesitate to make decisive decisions, expecting the intervention of video technology to correct any possible error, which may affect their self-confidence and overall performance. Real-world decisions, such as offside, are determined directly by the VAR team in the video operations room (VOR), and the referee does not conduct an on-field review in these cases.

Which makes this study of great scientific and practical importance. By reviewing the literature and sources related to VAR technology, which makes this research a new contribution to the field of sports sciences. The research aims to study the opinions of referees about the use of VAR technology in Iraqi stadiums, and the extent of its impact on their decisions during matches, in addition to identifying their level of psychological hesitation, and identifying the relationship between the use of video technology and psychological hesitation among referees in the Iraqi Professional League. This research is considered an important scientific addition, given the lack of previous studies that addressed this topic from the perspective of arbitration.

Method

Research techniques

The descriptive approach was adopted in two ways, survey and correlation, because it agrees in solving the research problem. The research community was represented by the referees of the Iraqi Professional Football League, numbering (80) referees. The researcher chose all referees as a sample, as the sample reached (80) referees a percentage of (100%) of the community. After that, the researcher divided the selected sample into a survey consisting of (10) referees. To build the (VAR) questionnaire and find the scientific foundations for the psychological frequency scale, (80) referees were chosen. As for the application sample, the same construction sample was also adopted.

Research tools

Questionnaire of referees' opinions on (VAR) technology

After reviewing the scientific literature and previous studies, the researcher did not find a questionnaire on (VAR) technology, so the researcher prepared a questionnaire specific to (VAR) technology, as the questionnaire consisted of (15) paragraphs and was presented to a group of experts and specialists from referees and academics in the field of tests, measurement and football, numbering (10) experts, and the experts expressed their approval of the paragraphs at rates ranging from (80% to 100%), and thus the questionnaire became ready for application to the research sample, and the five-point (Likerd) method was adopted as alternatives to answer the questionnaire.

The main experiment to prepare the (VAR) technology questionnaire

After reaching the (VAR) technology questionnaire, the researcher, with the help of the assistant work team, applied the questionnaire to the research sample members, numbering (80) referees construction sample is 80 while application sample is 72 from the Iraqi Professional Football League referees, on 26/6/2023 until 1/7/2023, where the answer was electronic (Google Drive) platform. After completing the implementation of the main experiment, the researcher arranged the questionnaire forms, corrected them, and recorded the results by withdrawing them to the Excel program in preparation for their statistical analysis. The descriptive characteristics of the sample response scores were found, and it became clear from them that the sample members are distributed naturally in the questionnaire, and (table 1) shows this.

Table 1. shows the descriptive characteristics of the scale

No.	Statistical data		Degree
1	Mean	Mean	51.4648
2	Standard deviation	Std. Deviation	7.60607
3	Skew	Skewness	0.422
4	Low degree	Minimum	41.00
5	High degree	Maximum	72.00

Scientific transactions of the scale(Hani, 2021)

- Apparent validity: It is one of the most important types of validity in scales and questionnaires and indicates the extent of the paragraph's relevance to the phenomenon to be measured. The apparent validity of the scale was achieved when the questionnaire was presented to a group of experts, numbering (10) experts, to judge the validity of its paragraphs.

- Discriminatory power: It was extracted by using the t-test (t.test) to indicate the significance of the differences in the arithmetic means of two inde pendent samples between the upper and lower groups, with (22) referees for each group and at a rate of (27%) of the sample of scientific foundations for construction, the process is only clear in the discrimination ability. The sample was arranged in descending order and two groups were taken with a percentage of 27% from the highest and the same percentage from the lowest, i.e. 22 referees for each group. The researcher relied on the paragraphs whose significance value is less than the approved significance level (0.05) and for a degree of freedom (42), and (table 2) shows this.

Table 2. shows the discriminatory power of each paragraph of the questionnaire

No.	Lower group		Top group		Calculated value of (t)	Significance value	Type sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
1	1.4737	.51299	4.4737	.51299	18.025-	0.000	Sig
2	1.2105	.41885	4.3684	.49559	21.213-	0.000	Sig
3	1.5263	.51299	4.6842	.47757	19.640-	0.000	Sig
4	2.4211	.83771	5.0000	.00000	13.419-	0.000	Sig
5	3.2105	.97633	5.0000	.00000	7.989-	0.000	Sig
6	1.5263	.51299	5.0000	.00000	29.516-	0.000	Sig
7	3.2105	.78733	5.0000	.00000	9.907-	0.000	Sig
8	1.2632	.45241	4.2105	.71328	15.210-	0.000	Sig
9	2.8421	.37463	5.0000	.00000	25.107-	0.000	Sig
10	3.2105	.71328	5.0000	.00000	10.936-	0.000	Sig
11	1.7895	.41885	4.3684	.49559	17.324-	0.000	Sig
12	1.2632	.45241	4.2105	.41885	20.838-	0.000	Sig
13	3.2105	.71328	5.0000	.00000	10.936-	0.000	Sig
14	1.1579	.37463	3.8947	.31530	24.363-	0.000	Sig
15	1.1579	.37463	3.8421	.50146	18.692-	0.000	Sig

The significance value is significant if it is < 0.05 at a degree of freedom (42)

Internal consistency coefficient

The researcher used the relationship between the paragraph score and the total score of the scale: It is to find the correlation between each paragraph and the total score of the questionnaire for all sample members. The purpose of this procedure is to link the paragraph score to the total score of the current questionnaire, as the paragraph represents the concept or characteristic to be measured, and (table 3) shows this.

Table 3. shows the correlation coefficient between the paragraph score and the total score of the questionnaire

No.	Simple correlation coefficient	Significance value	Type sig	No.	Simple correlation coefficient	Significance value	Type sig
1	0.293*	0.013	Sig	9	0.255*	0.032	Sig
2	0.314**	0.008	Sig	10	0.403**	0.000	Sig
3	0.253*	0.033	Sig	11	0.270*	0.023	Sig
4	0.278*	0.019	Sig	12	0.240*	0.044	Sig
5	0.235*	0.048	Sig	13	0.346**	0.003	Sig
6	0.345**	0.003	Sig	14	0.342**	0.003	Sig
7	0.339**	0.004	Sig	15	0.353**	0.003	Sig
8	0.279*	0.019	Sig				

The significance value is significant if it is < 0.05.

Reliability

The test or questionnaire is characterized by stability from the necessary and obligatory points, as it "refers to the degree of accuracy, mastery, or consistency with which the test measures the phenomenon for which it was developed. To verify the stability of the questionnaire under study, the researcher used the following methods:

Split-half method

The researcher divided the questionnaire paragraphs into two halves, the first half and the second half, and the correlation coefficient between the total scores of the two halves was extracted according to the Pearson method. It was found that its value was (0.718), and that the correlation coefficient here indicates the stability of half of the questionnaire and then the complete stability according to the Spearman-Brown equation to correct the stability to be the total stability (0.744).

The Cronbach's alpha method: The Cronbach's alpha is considered the internal homogeneity of the questionnaire and is one of the most common and most appropriate stability coefficients, as the Cronbach's alpha depends on the consistency of the individual's performance from one paragraph to another and the strength of the correlations between the questionnaire paragraphs, and it provides us

with a good estimate of stability (14) and (table 4) The reliability coefficient is shown through the split-half and Cronbach's coefficient for the questionnaire.

Table 4. Shows the reliability coefficients of the questionnaire

Half-split		Cronbach's alpha
Half-test stability	Stability coefficient	
0.718	0.744	0.714

Psychological frequency scale

The researchers relied on the psychological frequency scale prepared by Marwa Madhat Wahba and others (Ali et al., 2020). The scale aims to identify the level of psychological frequency among football referees. The scale consists of 7 main dimensions distributed over (80) paragraphs, which the researchers reduced to (37) paragraphs, as shown in Appendix (2).

Main experiment for psychometric properties

The scale was applied to a sample of scientific foundations, numbering (80) referees, for a period of (4) days at (Ali Hussein Stadium) in the Ministry of Youth and Sports in Baghdad. The results were recorded for statistical processing for the purpose of modification. The scientific foundations for the sample scores were extracted.

Scientific coefficients for the test

Validity of the scale

For extracting the validity of the test under study, the researchers extracted the validity of the test in three ways.

Content validity

After the questionnaire for the research test was distributed to experts and specialists, Appendix (1), numbering (10) in the field of sports psychology and football arbitration, the researcher used content validity to survey their opinions on the ability of the test to measure what it was designed for. "The test becomes valid if experts or specialists in the field of testing and measurement agree that it measures what it was designed for, as most of them agreed that it is valid with some modifications" (Jasim et al., 2023), as these modifications were taken into consideration, believing in the researchers' soundness and scientific value that improves the test. In addition, (one of the most important components of validity is one of the most important criteria for the quality of the test or measurement, as it refers to the truth or accuracy with which we measure the measuring tool, the thing or phenomenon that it was designed to measure) (Muhannad, 2016), so that all paragraphs would have percentages ranging between (80% - 100%), so all paragraphs are acceptable.

Discriminatory power

It was extracted by using the t-test (t.test) to indicate the significance of the differences in the arithmetic means of two independent samples between the upper and lower groups, with (22) referees for each group and a percentage of (27%) of the scientific foundations sample. The researcher adopted the paragraphs whose significance value is less than the approved significance level (0.05) and for a degree of freedom of (42), and (table 5) shows that.

Table 5. shows the discriminatory power of each paragraph of the psychological frequency scale

No.	Lower group		Top Group		Calculated value of (t)	Significance value	Type sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
1	2.7273	1.03196	5.0000	0.00000	Result	0.000	sig
2	2.7727	1.06600	5.0000	0.00000	-9.800	0.000	sig
3	2.5455	0.85786	4.4091	0.50324	-8.789	0.000	sig
4	2.3636	0.65795	4.7727	0.42893	-14.387	0.000	sig
5	2.0000	0.53452	4.2273	0.42893	-15.243	0.000	sig
6	2.9545	0.48573	4.6818	0.47673	-11.904	0.000	sig
7	2.8636	0.71016	5.0000	0.00000	-14.110	0.000	sig
8	2.1818	0.58849	4.5455	0.50965	-14.241	0.000	sig
9	2.6818	0.47673	4.8182	0.39477	-16.189	0.000	sig
10	2.4545	0.67098	4.5000	0.51177	-11.369	0.000	sig
11	2.5000	0.67259	5.0000	0.00000	-17.434	0.000	sig
12	2.2273	0.92231	4.9091	0.29424	-12.993	0.000	sig
13	2.1818	0.73266	4.9091	0.29424	-16.202	0.000	sig
14	2.6364	0.65795	4.6364	0.49237	-11.415	0.000	sig
15	2.2727	0.70250	4.5909	0.50324	-12.583	0.000	sig
16	2.2727	0.93513	5.0000	0.00000	-13.679	0.000	sig
17	2.2273	0.97257	4.5455	0.50965	-9.903	0.000	sig
18	2.3636	0.84771	4.8636	0.35125	-12.779	0.000	sig
19	2.7273	0.45584	4.9091	0.29424	-18.862	0.000	sig
20	2.0000	0.97590	4.6818	0.47673	-11.581	0.000	sig

21	1.9545	0.84387	4.6364	0.49237	-12.875	0.000	sig
22	2.0000	0.81650	4.5000	0.51177	-12.169	0.000	sig
23	2.5000	0.67259	4.8182	0.39477	-13.942	0.000	sig
24	2.4091	0.85407	4.7727	0.42893	-11.600	0.000	sig
25	2.5000	0.85912	4.8636	0.35125	-11.945	0.000	sig
26	2.4091	0.85407	4.8182	0.39477	-12.009	0.000	sig
27	2.1818	0.79501	5.0000	0.00000	-16.627	0.000	sig
28	2.6818	0.47673	4.8636	0.35125	-17.282	0.000	sig
29	2.3636	0.84771	4.5000	0.51177	-10.119	0.000	sig
30	2.4545	0.85786	4.6364	0.49237	-10.346	0.000	sig
31	2.5909	0.59033	4.6364	0.49237	-12.481	0.000	sig
32	2.3182	0.94548	4.5909	0.50324	-9.953	0.000	sig
33	2.0909	0.86790	4.8636	0.35125	-13.890	0.000	sig
34	2.2727	0.93513	4.6364	0.49237	-10.490	0.000	sig
35	2.4091	0.85407	4.5455	0.50965	-10.075	0.000	sig
36	1.7727	0.61193	4.4545	0.50965	-15.795	0.000	sig
37	2.2727	0.93513	4.6818	0.47673	-10.765	0.000	sig

The significance value is significant if it is < 0.05 at a degree of freedom (42)

Internal consistency

The researchers used internal consistency by the method of relating the paragraph score to the total score of the scale. The purpose of this procedure is to relate the paragraph score to the total score of the current questionnaire, as the paragraph represents the concept or characteristic to be measured, and (table 6) shows this.

Table 6. shows the correlation coefficient between the paragraph score and the total score of the questionnaire

No.	Simple correlation coefficient	Significance value	Type sig	No.	Simple correlation coefficient	Significance value	Type sig
1	0.809**	0.000	sig	20	0.731**	0.000	sig
2	0.840**	0.000	sig	21	0.619**	0.000	sig
3	0.730**	0.000	sig	22	0.845**	0.000	sig
4	0.796**	0.000	sig	23	0.857**	0.000	sig
5	0.473**	0.000	sig	24	0.886**	0.000	sig
6	0.637**	0.000	sig	25	0.748**	0.000	sig
7	0.652**	0.000	sig	26	0.796**	0.000	sig
8	0.783**	0.000	sig	27	0.556**	0.000	sig
9	0.825**	0.000	sig	28	0.749**	0.000	sig
10	0.612**	0.000	sig	29	0.878**	0.000	sig
11	0.694**	0.000	sig	30	0.836**	0.000	sig
12	0.811**	0.000	sig	31	0.702**	0.000	sig
13	0.800**	0.000	sig	32	0.785**	0.000	sig
14	0.495**	0.000	sig	33	0.739**	0.000	sig
15	0.817**	0.000	sig	34	0.817**	0.000	sig
16	0.910**	0.000	sig	35	0.854**	0.000	sig
17	0.787**	0.000	sig	36	0.611**	0.000	sig
18	0.814**	0.000	sig	37	0.818**	0.000	sig
19	0.740**	0.000	sig				

The significance value is significant if it is < 0.05

Reliability

It was extracted in two ways:

Split-half method

The researcher divided the questionnaire items into two halves, the first half and the second half, and the correlation coefficient was extracted between the total scores of the two halves according to the Pearson method. It was found that its value was (0.957), and that the correlation coefficient here indicates the stability of the half of the questionnaire and then the complete stability according to the Spearman-Brown equation to correct the stability so that the total stability is (0.970).

Cronbach's alpha method

Cronbach's alpha is considered the internal consistency of the questionnaire and is one of the most common and most appropriate stability coefficients. (table 7) shows the stability coefficient through the split-half and Cronbach's alpha for the questionnaire.

Table 7. Shows the questionnaire's stability coefficients

Half-split		Cronbach's alpha
Half-test stability	Stability coefficient	
0.957	0.970	0.979

Main experiment

After the researchers prepared the two scales and extracted their scientific bases, their validity for standardization was completed. The two scales were applied to a sample of (71) judges for a period of (10) days.

Statistical methods

The researcher used the statistical package (SPSS).

- Arithmetic mean.
- Standard deviation.
- Coefficient of skewness.
- Correlation coefficient (Pearson).
- T.test.

Results

The overall results of the questionnaire paragraphs were presented according to each alternative and frequencies of the sample responses, by specifying the values of the weighted mean for comparison, the arithmetic mean and standard deviation, and stating the level of acceptance for each paragraph, as in (tables 9, 8, 10).

Table 8. shows the sample's answers to the questionnaire

No.	Level	I don't agree at all	I disagree	I agree sometimes	Mostly agree	Always agree	Arithmetic mean	Standard deviation
	The symbol	1	2	3	4	5		
1	Number	10	18	20	13	10	2.9296	1.25725
	%	%14.1	%25.4	%28.2	%18.3	%14.1		
2	Number	15	23	13	12	8	2.6479	1.29943
	%	%21.1	%32.4	%18.3	%16.9	%11.3		
3	Number	9	10	22	16	14	3.2254	1.27836
	%	%12.7	%14.1	%31.0	%22.5	%19.7		
4	Number	4	3	21	19	24	3.7887	1.13283
	%	%5.6	%4.2	%29.6	%26.8	%33.8		
5	Number	1	4	4	23	39	4.338	0.92495
	%	%1.4	%5.6	%5.6	%32.4	%54.9		
6	Number	9	10	10	9	33	3.662	1.4923
	%	%12.7	%14.1	%14.1	%12.7	%46.5		
7	Number	1	1	10	15	44	4.4085	0.88765
	%	%1.4	%1.4	%14.1	%21.1	%62.0		
8	Number	14	28	12	9	8	2.5634	1.26189
	%	%19.7	%39.4	%16.9	%12.7	%11.3		
9	Number	3	0	18	23	27	4.0423	0.90137
	%	%4.2	%0	%25.4	%32.4	%38.0		
10	Number	1	0	12	11	47	4.4507	0.87487
	%	%1.4	%0	%16.9	%15.5	%66.2		
11	Number	4	21	23	15	8	3.0282	1.09508
	%	%5.6	%29.6	%32.4	%21.1	%11.3		
12	Number	14	14	18	20	5	2.831	1.24196
	%	%19.7	%19.7	%25.4	%28.2	%7.0		

13	Number	1	0	12	11	47	4.4507	0.87487
	%	%1.4	%0	%16.9	%15.5	%66.2		
14	Number	16	18	19	17	1	2.5634	1.13052
	%	%22.5	%25.4	%26.8	%23.9	%1.4		
15	Number	16	19	20	14	2	2.5352	1.13176
	%	%22.5	%26.8	%28.2	%19.7	%2.8		

Table 9. shows the arithmetic mean, standard deviation and hypothetical mean of the questionnaire.

Sample	Arithmetic mean	Standard deviation	Hypothetical medium	Degree of freedom	T value	Significance value	Significance level 5%
71	58.7631	9.54391	45	70	7.162	0.000	Sig

Where construction sample is 80 while application sample is 71
The significance value is significant if it is < 0.05 at a degree of freedom (70).
It is clear from (table 9) that the hypothetical mean is smaller than the arithmetic mean of the sample's answers to the questionnaire, which indicates the sample's support for this questionnaire, but by returning to the analysis of the field paragraphs and processing them statistically, some differences become clear that determine the nature of the sample's answers.

Table 10. shows the results of the questionnaire paragraphs

No.	Level	I don't agree at all	I disagree	I agree sometimes	Mostly agree	Always agree	Weighted mean	Weight percentage
	symbol	1	2	3	4	5		
1	Number	10	18	20	13	10	2.93	58.59
	%	%14.1	%25.4	%28.2	%18.3	%14.1		
2	Number	15	23	13	12	8	2.65	52.96
	%	%21.1	%32.4	%18.3	%16.9	%11.3		
3	Number	9	10	22	16	14	3.23	64.51
	%	%12.7	%14.1	%31.0	%22.5	%19.7		
4	Number	4	3	21	19	24	3.79	75.77
	%	%5.6	%4.2	%29.6	%26.8	%33.8		
5	Number	1	4	4	23	39	4.34	86.76
	%	%1.4	%5.6	%5.6	%32.4	%54.9		
6	Number	9	10	10	9	33	3.66	73.24
	%	%12.7	%14.1	%14.1	%12.7	%46.5		
7	Number	1	1	10	15	44	4.41	88.17
	%	%1.4	%1.4	%14.1	%21.1	%62.0		
8	Number	14	28	12	9	8	2.56	51.27
	%	%19.7	%39.4	%16.9	%12.7	%11.3		
9	Number	3	0	18	23	27	4.00	80.00
	%	%4.2	%0	%25.4	%32.4	%38.0		
10	Number	1	0	12	11	47	4.45	89.01
	%	%1.4	%0	%16.9	%15.5	%66.2		
11	Number	4	21	23	15	8	3.03	60.56
	%	%5.6	%29.6	%32.4	%21.1	%11.3		
12	Number	14	14	18	20	5	2.83	56.62
	%	%19.7	%19.7	%25.4	%28.2	%7.0		
13	Number	1	0	12	11	47	4.45	89.01
	%	%1.4	%0	%16.9	%15.5	%66.2		
14	Number	16	18	19	17	1	2.56	51.27
	%	%22.5	%25.4	%26.8	%23.9	%1.4		
15	Number	16	19	20	14	2	2.54	50.70
	%	%22.5	%26.8	%28.2	%19.7	%2.8		

By following (table 10) for the data of the targeted sample and comparing the results of the weighted average, it is clear that the level of the obtained scores varied between (4.45 - 2.54), i.e. with a good estimate, and this indicates the good value of the level of (VAR) technology from the point of view of the referees. From reviewing the paragraphs of the final questionnaire, we note that (VAR) technology supports and assists the referee in making his decisions. At the same time, we should not marginalize the role of the referee and (VAR) becomes the one who makes the decision on behalf of the referee. This is the way in which (VAR) is applied almost all over the world. It is a modern technology used in football matches based on the use of video cameras to record matches from several different angles. The video

clips are used after being returned for review before the referee makes any decision to ensure its correctness. The sample answers also showed that the use of the technology has been surrounded by controversy since its application, and many followers believe that (VAR) can go beyond its original function, which is for the referee to refer to it to help him make the final decision in clear refereeing errors during the match. This technology is implemented on the field from Through four cameras distributed on the field to take shots from several different angles, these cameras are connected to a set of display screens located inside a room attached to the field to follow the progress of the match through a team of three people (the video referee "who is a current or former referee", the video referee assistant, and the replay operator), while there is a final screen on the field line for the match referee that allows him to follow closely, while he communicates with the three-man team via earphones to discuss the decision. (Dhahi et al., 2022) The sample responses confirmed that the audience influences the decision to use the (VAR) technology or not to use it, and therefore some may complain that the referees who use (VAR) via the screens in the room have made the final decisions instead of the referees present on the field.

Despite the availability of infrastructure to implement VAR technology in the Iraqi league from the referees' point of view, there is no progress in this direction and the application of this technology in Iraqi stadiums, despite their confirmation that VAR technology does not help in wasting time, but on the contrary, reduces errors in issuing correct decisions during the match. It is worth noting that several strong criticisms have recently been raised against VAR technology and its use by referees and its impact on the results of some matches (Jasim et al., 2021). Some complained about the improper use of this technology, while others criticized the controllers of VAR via screens and their interference in the refereeing decisions of the match. Therefore, solutions were proposed in VAR technology the decision should be made by the VAR referee quickly and not to stop the match for a long time.

- Appointing referees to supervise this technology who have refereeing experience.
- Maintaining the rhythm of the match by working to reduce suspensions within the match. Work to stop technical errors in the VAR system.
- Make correct decisions.
- Cancel the dispute over suspicious cases.
- Apply the law fairly and correctly for both teams.
- Reduce the cost of the amounts so that all countries of the world can apply this technology in their stadiums.

Psychological frequency scale results

Presentation , the results of the level of judges in the psychological frequency scale by comparing the arithmetic mean with the hypothetical mean, and Table (11) shows that

Table 11. shows the level of psychological frequency and the value of (T) between the arithmetic mean and the hypothetical mean for the sample

Statistical operations Variable	Unit of measure	Hypothetical arithmetic mean	Arithmetic mean	Standard deviation	Media teams	Calculated t value	Significance value	Significance
Psychological frequency	Degree	111	133.2113	29.77147	22.21127	6.286	0.000	Sig

The significance value is significant if it is < 0.05 at a degree of freedom of.(70)

Psychological hesitation is a state of doubt and indecisiveness that affects the referee while making decisions, especially in critical moments of the match. This hesitation occurs when the referee feels uncertain about his decision or fears that he has made a mistake that may affect the outcome of the match.

There are several factors that may lead to psychological hesitation among referees, including (Jasim et al., 2021)

- Pressure from fans and the media: Referees are exposed to great pressure from fans, coaches and the media, which makes them cautious in making decisions.
- Use of (VAR) technology: With the possibility of reviewing their decisions on video, referees may feel anxious that their decisions will be corrected or criticized, which makes them less confident in making direct decisions.

- Importance of the match and impact of decisions: In decisive matches, the referee realizes that any decision may be fateful, which increases his feeling of hesitation and fear of making mistakes.
- Lack of experience and training: Referees who are less experienced or who have not received sufficient training may suffer from psychological hesitation more than experienced referees.
- The impact of psychological hesitation on referees' performance is through:
- Slow decision-making: Hesitant referees may take longer to make decisions, which may affect the pace of the match and lead to tension among referees and fans.
- Over-reliance on VAR technology: Some referees may become more inclined to rely on video review even in clear cases, for fear of making a wrong decision.
- Loss of control over the match: A referee who shows frequent hesitation may lose the respect of the referees, which leads to difficulty in managing the match effectively.

Referees' psychological hesitation is a major challenge that may affect their decisions during matches, especially with the introduction of VAR technology. Therefore, it is necessary to provide training and psychological support to referees to help them reduce hesitation and enhance their self-confidence, which contributes to improving the quality of refereeing in football.

This is confirmed by reserchers that the psychological preparation of athletes is one of the things that has become necessary and urgent to achieve the best achievements and that the referee's comprehensive preparation is to be able to face the requirements of strenuous physical training on the one hand and pass periodic physical tests on the other hand, in addition to his leadership of matches and the mental and psychological effort resulting from thinking and remembering the provisions of the game's law for the purpose of making important and difficult decisions without being affected by various pressures. Given the security, political and social circumstances surrounding football referees and the responsibility placed on them while leading matches and the importance of the role they play, whether as a referee, assistant referee, fourth referee or two additional referees, it was necessary to work on raising their technical level on the field of play by focusing on developing the physical, psychological and cognitive aspects, especially since the safety of the match depends on their role in it (Hani, 2021).

Results of the relationship between the use of (VAR) technology and psychological frequency

Table 12. shows the correlation coefficient between the use of (VAR) technology and psychological frequency

Variables	Arithmetic mean	Standard deviation	Correlation coefficient	Significance value
Var technology	58.7631	9.54391	-0.260*	0.029
Psychological frequency	133.2113	29.77147		
Type of difference	Not significant at 0.05 significance level			

The significance value is significant if it is < 0.05

The results in Table (11) show an inverse relationship between the use of video assistant referee (VAR) technology and the psychological hesitation of the referees of the Iraqi Professional League, which means that increasing the use of (VAR) leads to a reduction in psychological hesitation among referees. This result can be explained by several factors and analyses:

- Enhancing the confidence of referees in their decisions: When (VAR) is available, referees know that they can resort to it in doubtful cases, which reduces their feelings of anxiety or hesitation when making decisions. They realize that there is an opportunity to correct errors, which makes them more confident when issuing field referees (Jasim et al., 2021).
- Reducing the psychological pressure resulting from potential errors: Before the introduction of (VAR), referees bore great responsibility in making critical decisions without any means of review, which may lead to their hesitation in some critical situations. With the presence of technology, this pressure decreases because referees know that they have technological support to help them make the right decision.

- Improving the accuracy of decisions and reducing anxiety about reactions: Referees who use VAR are more reassured because their decisions are verified by video, which reduces the possibility of being severely criticized by fans or the media. This reduces psychological stress and makes referees more comfortable while managing matches.
- Gradual adaptation to technology and development of refereeing skills: As VAR continues to be used, referees gain experience in how to deal with it and benefit from it effectively. This gradual adaptation reduces their doubts and hesitation, as they become more familiar with the use of technology and how to make clear decisions without the need for repeated reviews.
- Administrative and training support for referees: If there are effective training programs for the use of VAR technology in Iraq, referees may be more prepared to use it, which reduces their psychological hesitation. Continuous training helps them understand when to resort to technology and when they can rely on their field decisions with confidence.
- Promoting fairness and reducing anxiety about controversial decisions: When referees feel that they have a technological means to ensure that justice is achieved, they become less afraid to make bold decisions. VAR technology provides them with a tool that helps them verify important decisions such as penalties, goals, and expulsions, which reduces the fear of making serious mistakes.

Therefore, the existence of an inverse relationship between the use of VAR technology and the psychological hesitation of Iraqi Professional League referees indicates that the technology acts as a supportive factor for referees, which increases their confidence and reduces their doubts while making decisions. However, to ensure maximum benefit from this relationship, there must be continuous training, development of refereeing protocols, and psychological support for referees so that they can use the technology effectively without negatively affecting the course of the match.

Conclusions

- The VAR technology has clearly and noticeably contributed to the development of the game of football and the absence of refereeing errors in matches by a percentage that may exceed (95%) in matches.
- The results indicate that the use of VAR technology helps referees make more accurate decisions, which reduces the feeling of anxiety and hesitation while managing matches. Having video review gives referees greater confidence in their decisions, knowing that they have the opportunity to check controversial situations.
- The study showed an inverse relationship between the use of VAR and psychological hesitation, meaning that the more VAR is used, the less hesitation referees have in making decisions. This is due to the reduction in psychological pressure resulting from the possibility of making crucial refereeing errors.
- VAR helps reduce the pressure caused by fans, coaches and the media, as it provides a tool to verify crucial decisions, which reduces the possibility of being severely criticized for refereeing errors.
- Although VAR reduces psychological hesitation, referees who have not received adequate training in its use may feel uncertain about how to apply the technology correctly, which can lead to delayed or inconclusive decisions. Therefore, providing intensive training programs is essential to ensure the effective use of this technology.
- While VAR reduces psychological hesitation, some referees may rely on it excessively, which can lead to frequent stoppages and delayed decisions. Therefore, achieving a balance between using technology and maintaining the flow of the match is an important factor in developing refereeing.

Recommendations:

- Specialized training programs should be developed to help referees use VAR efficiently without hesitation in making decisions.

- VAR use protocols should be improved to reduce the time spent reviewing footage, which contributes to maintaining the rhythm of the match.
- More studies should be conducted on the psychological effects of technology on referees, focusing on external pressures and how to deal with them.
- Referees should be trained to make critical decisions without over-reliance on VAR, which enhances their field confidence.

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Appendices

Appendix 1. VAR technology questionnaire

No.	Paragraphs	Always agree	Mostly agree	I agree sometimes	I disagree	I don't agree at all
1	The use of var technology has lost the beauty of the iraqi professional football league matches.					
2	The use of var technology in the iraqi professional football league has had a negative impact.					
3	The use of var technology in the iraqi professional football league has had a positive impact on making the right decisions.					
4	The use of var technology in the iraqi professional football league has contributed to correcting refereeing errors.					
5	The use of var technology in the iraqi professional football league reduces the rate of refereeing errors.					
6	The pauses when using var affected the viewers' enjoyment, creating a state of frustration among them.					
7	Stoppages when using var reduce the intensity of competition between the two teams and affect the referees' concentration.					
8	The use of var technology in the iraqi professional football league has enhanced the referees' culture and legal knowledge.					
9	The use of var technology in the iraqi professional football league contributes to enhancing justice between the two teams.					
10	The use of var technology in the iraqi professional league has affected the character of referees and their confidence in making decisions.					
11	The use of var technology in the iraqi professional league has made referees dependent and out of touch with situations.					
12	The use of var technology in the iraqi professional league helped referees develop their refereeing skills and make accurate decisions.					
13	The use of var technology in the iraqi professional league has caused psychological pressure on referees.					
14	The use of var technology in the iraqi professional league leads to referees' hesitation in making decisions.					
15	I think that using var technology in the iraqi professional league helps in wasting time.					

Appendix 2. Psychological frequency scale

No.	Paragraphs	Always agree	Mostly agree	I agree sometimes	I disagree	I don't agree at all
1	When i finish refereeing the match i feel like i could have done better.					
2	My self-confidence makes me not hesitate in making a decision.					
3	It is difficult for me to seek the opinion of other referees due to the excessive tension during important matches.					

4	I can adapt to the match when i am assigned to manage a match in which one of the parties is a fan team.
5	My previous experience makes me able to calm the audience through my refereeing decisions.
6	My decisions are influenced by hostile threats and chants from the crowd.
7	My muscular body shape and appearance help me to be a distinguished football referee.
8	I feel like i need to be perfectly prepared before any match i'm assigned to manage to reduce my mental hesitation.
9	I feel a lack of confidence in myself before entering the field to referee the match.
10	I feel excited in important and sensitive matches, so my level of concentration is high in them..
11	I have the ability to referee in a stadium with insufficient lighting.
12	I can visualize a decision for a previous situation that was decided by other referees.
13	I feel like some of the rules of the game are forgotten in fear of post-match assaults by fans.
14	I make decision making mistakes when i'm tired during a game.
15	My physical efficiency while refereeing matches decreases due to my hesitation.
16	My self-esteem during matches lowers my performance.
17	During the match, i think about the consequences of a win or loss for one of the two teams.
18	I can adapt to the intensity of the wind and its effect on the ball while refereeing football.
19	I know very well how to relax during critical moments of matches.
20	Hearing the crowd cheering for a team makes me more excited.
21	I am satisfied with my physical appearance as a football referee.
22	I hesitate to make decisions in matches due to my lack of physical efficiency.
23	I lack some physical abilities and preparations that prevent me from noticing a situation while i am refereeing the match.
24	When i make a wrong decision at the beginning of the match, my hesitation increases in every situation of the match.
25	I get anxious and nervous when refereeing a match in a new stadium for me.
26	I visualize refereeing situations using my previous matches.
27	I fear the audience when making a crucial and fateful decision during the match.
28	My body type helps me move quickly on the field.
29	I feel that my level of refereeing has not improved, despite my continued knowledge of everything new in the field of refereeing.
30	Have the ability to make a quick and correct decision for a given situation during the game.
31	I feel like i need to attend training sessions before refereeing important matches in the season.
32	High lighting can hurt my eyes and make me unable to see the ball and thus make wrong decisions.
33	Being aware of the new law amendments helps me make the right decisions in matches.
34	I am afraid of being criticized by the media after a match i refereed.
35	The many football matches i refereed make me calm and psychologically stable.
36	I make mistakes in decision making during the match due to pressure from the crowd.
37	The speed of movement on the field helps me to follow the events and make the right decision.