Building the Scale of Legal and Theoretical Knowledge for Beach Volleyball Referees

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ABSTRACT

Beach volleyball is one of the modern team sports that has witnessed a wide development and spread at the local and international levels, as it represents a combination of high physical skill and playing in a natural environment characterized by challenge and flexibility. With the development of this game, there is an urgent need to develop all its aspects, the most prominent of which is the legal aspect (refereeing), which is a decisive factor in controlling the flow of matches and achieving competitive fairness.

The referee is an essential element of any match, as he is responsible for applying the rules and regulatory standards with accuracy and impartiality. It is important for referees to have a high level of legal and theoretical knowledge of the game, ensuring that they are able to make the right decisions at the right time. However, the reality indicates that there are disparities in the level of this knowledge among referees, which may negatively affect the quality of refereeing performance.

1.1 Introduction and importance of the research

Beach volleyball is one of the modern team sports that has witnessed a wide development and spread at the local and international levels, as it represents a combination of high physical skill and playing in a natural environment characterized by challenge and flexibility. With the development of this game, there is an urgent need to develop all its aspects, the most prominent of which is the legal aspect (refereeing), which is a decisive factor in controlling the flow of matches and achieving competitive fairness.

The referee is an essential element of any match, as he is responsible for applying the rules and regulatory standards with accuracy and impartiality. It is important for referees to have a high level of legal and theoretical knowledge of the game, ensuring that they are able to make the right decisions at the right time. However, the reality indicates that there are disparities in the level of this knowledge among referees, which may negatively affect the quality of refereeing performance.

Based on this, the idea of this research came about, which aims to build an accurate scientific scale to measure the legal and theoretical knowledge of beach volleyball referees, in order to contribute to the development of the refereeing process, enhance the efficiency of performance, and ensure the provision of an objective evaluation of the level of referees in order to achieve justice in selection, training and development, and the importance of this research is manifested in several aspects, the most prominent of which is the scientific importance of the research contributes to bridging a knowledge gap represented in the lack of specialized standards that measure the legal and theoretical knowledge of volleyball referees beach, which is a qualitative addition to the scientific literature in the field of physical education and team game refereeing. The scale that will be built can be used as a practical tool in sports institutions and federations to verify the efficiency of referees, whether in the qualification, promotion or periodic evaluation stage, which contributes to improving the quality of refereeing Developmental importance The scale helps in identifying the weaknesses of referees in terms of knowledge of laws and theoretical aspects, which enables the development of targeted training programs that target these aspects and enhance the efficiency of referees. Administrative and organizational importance The scale provides an opportunity to manage arbitration affairs more accurately and professionally, by adopting clear and scientifically based criteria in evaluating and classifying referees.

1-2 Research Problem:

Legal and theoretical knowledge is the main pillar on which the referee relies to perform his duties on the court, especially in a sport that requires precision in decision-making such as beach volleyball. With the increasing importance and spread of this sport, there is an urgent need to assess the extent to which referees possess the legal and theoretical knowledge that qualifies them to manage matches efficiently and impartially

Although there are training and qualification programs for referees, there is still no codified scientific tool based on methodological foundations to measure this type of knowledge accurately and objectively. Reliance on public evaluations or personal experience may also lead to inaccurate decisions regarding the selection or promotion of referees, which may adversely affect the level of arbitration and the fairness of competition.

Hence, the research problem is determined by the following question:

"What are the scientific and methodological bases on which to build an objective scale to measure the level of legal and theoretical knowledge of beach volleyball referees?

1-3 Research Objectives

1.3.1 Building the Legal and Theoretical Knowledge Scale for Beach Volleyball Referees

1.4 Research Areas

1.4.1 Human Field: Referees of the Beach Volleyball Game in Iraq
1.4.2 Spatial Domain: The scale was distributed to the referees electronically on WhatsApp.
1-4-3 Temporal Domain: Starting from 1/3/2025 to 1/5/2025

2. Research Procedures

2-1 Research Methodology

The researchers used the descriptive method in the survey method to suit the nature of the research

2.2 Research population and sample

The research population included (130) referees of the beach volleyball game in Iraq, and Table (1) shows the research population.

Percentage	Number of referees	Governorate	sequencing
16.9%	22	Baghdad	1
14.6%	19	Nineveh	2
8.4%	11	Basra	3
7.6%	10	Diwaniya	4
6.9%	9	Karbala	5
6.1%	8	Najaf	6
13%	17	Anbar	7
5.3%	7	Sulaymaniyah	8
6.9%	9	Erbil	9
6.1%	8	Tikrit	10
7.6%	10	Diyala	11
100%	130	Total	

2.2.1 Research Sample

The research sample included the (130) referees of the beach volleyball game, "as the researchers and specialists did not set a specific limit on a scientific or statistical basis that determines the appropriate size of the sample, but a number of researchers are guided by previous studies, if any, in determining the size of the research sample, especially those studies that use the same research method that the researchers want to use" (Melhem, 2000, 129-130).

2.2.1.1 Construction Sample

The research required the construction of the legal and theoretical knowledge scale for beach volleyball, as the construction sample included (100) referees, who were randomly selected from the main research sample and represent (77%) of the research sample for the purpose of conducting the exploratory application of the scale and statistical analysis of the paragraphs and consistency, and then they were excluded from the sample of the final application of the research.

2.2.1.2 Sample Application

The scale was applied to a sample of (30) referees, who represent (23%) of the research sample as a whole, in order to have legal and theoretical knowledge of beach volleyball referees, and Table (2) shows the details of the sample.

Table (2) shows the details of the research sample

Total Sample	Sample Application	Total Construction Sample	Discriminating power sample	Sample Exploratory Experiment	Stability Sample	Samples / Number of referees and the percentage
130	30	100	80	5	15	Number of referees
100%	100%		80%	5%	15%	Percentage

2.3 Research Tool

Since there is no special scale for legal and theoretical knowledge of beach volleyball , the researchers have built a special theoretical legal scale for the multiple-choice game as a tool to be used in research, "because it is more than other tests because it is more consistent than other tests in the validity of its judgments and the estimation of the scores achieved by the laboratory, and because it is characterized by its objectivity, comprehensiveness of the material, and economical in time" (Al-Gharib, 1985, 203).

2.3.1 Steps to build a scale of legal and theoretical knowledge

 There are basic steps that can be followed when building tests or cognitive measures in general, which It measures the overall aspects of the skill, attribute, attribute or ability, which are as follows:
1. Plan the test.

2. Write the test paragraphs.

3. Apply testing and exploratory experiments.

4. Paragraph analysis.

5. Review and revise the paragraph.   (Rizwan, 2006, 280)

2.3.2 Scale planning

 A good scale needs good planning, so the researchers planned the contents of the scale so that it includes

The whole curriculum is balanced according to the importance of the content of the scale, and the planning includes the following:

- The person in charge of the scale shall specify the scope of work (application) of the scale and its purposes.

- The person responsible for preparing the scale should determine in advance, the nature of the content of the scale(s) and the nature of the response to them.

- Determining the sample method necessary to construct the scale, indicating the type and size of the sample.

- Setting the details and arrangements for the initial and final application of the scale.

- Estimating the expected time it will take for the scale (scale length).

- Identify the statistical methods expected to be dealt with to build the scale. (Rizwan, 2006, 282)

 2.3.3 Defining the Scope of the Scale

The researchers analyzed the content of beach volleyball laws and conducted a survey of scientific sources

The researchers then determined the relative importance of the fields by using the method of determining the size of the legal article in the laws of beach volleyball (number of lines) and analyzing it according to its frequency and percentages, "In most cases, the relative importance of each element or dimension of the phenomenon, trait, mental ability or even academic achievement is determined, in the light of the following:

- The importance of each piece of content for the purposes of subsequent learning.

- The size of the educational material in the educational curriculum. (Al-Nabhan, 2004, 75)

The researchers then presented the dimensions to a group of experts and specialists in the field of beach volleyball (Appendix 1) in order to verify the validity of the fields and to propose, delete or add other fields, as well as the validity of the relative importance of each field and each level of the knowledge field (Table of Specifications as shown in Appendix (2)

After analyzing the responses and observations of the experts, the special frequencies and percentage were calculated

for repetitions in relation to the total number of experts' approval of each field in the phenomenon that is the subject of the measurement, as

A domain that gets repeats of less than (25%) of the total sum, the researchers

Acceptance of less or more than (25%) and according to the circumstances" (Ali & Radwan, 2008, 63) Thus, 100% of the validity of the scale was approved.

2.3.4 Formulation of the paragraphs of the scale

One of the initial steps to build cognitive scales is to determine the shape and localization of the scale in terms of the type of

The paragraphs of the scale and how to formulate them, as the paragraphs of the scale were formulated of a type of multiple choice and the answer key is (the only answer style), through the process of reviewing the previous studies and researches, reviewing the scientific sources and books, (50) paragraphs for the knowledge scale were drafted and prepared in accordance with the nature of the current research community, and the following were taken into account in the preparation and formulation of the paragraphs of the scale:

- The paragraph should measure one of the areas of the scale and is related to it. (Kazim, 1990, 97)

- The paragraph must be interpretable in one. (Abu Alam and Sharif, 1989, 134)

- The paragraphs should be clear and specific.

- Write more paragraphs (questions) than required.

- That there is nothing in the one paragraph (question) that is revealed by answering it.

- The answer to the paragraph should not reveal the answer to another question (Al-Dulaimi and Al-Mahdawi, 2005, 33)

The drafting of the paragraphs has taken into account (learning levels according to Bloom's classification, and in light of this, it was adopted).

Researchers are at the first and second levels only, which are (recall and comprehension) in building the knowledge scale for beach volleyball, as the determination of the cognitive levels (Bloom) is due to the type of sample selected for the study for which the scale is prepared. The first and second levels of knowledge, namely (male) and its percentage (50%), comprehension and its percentage (50%), and the total of their percentages is (100%), thus the number of paragraphs of the cognitive scale reached (50) items, and based on the mental level of Bloom's classification, each paragraph has four alternatives, one of which is correct.

 The specification table is used as an important means to confirm the validity of the content (content) of the proposed scale (Radwan, 2006, 283) and it is reached by analyzing the content of the curriculum or teaching program, and the main benefit of the specification table is that the measurement tool should represent the educational content in the case of an achievement test or the behavioral range in the case of aptitude or trait tests in the best way and helps to give a convincing and detailed picture of the scale tool (Al-Nabhan, 2004, 76) Table (3)

Table (3) shows the specification table for the measurement of legal and theoretical knowledge of beach volleyball

Total	Understanding	Remember	Relative importance	Duplicates Number of lines	domains
100%	50%	50%			
50	25	25	100%	295	Legal Knowledge

2.3.5 Authenticity of the Content

It is called honesty by definition, and the method of finding it is to identify the areas that make up the concept according to a certain theory" (Al-Zahir et al., 2002, 135) and this honesty has been achieved in the research tool by classifying the paragraphs of each field, as Al-Hakim points out that "the truthfulness of the content of the test or measure depends mainly on the extent to which the test or measure can represent the contents of its elements, as well as the attitudes and aspects that it measures in an honest, homogeneous and high-significance representation to achieve the goal that has been set. For the sake of the test or scale" (Al-Hakim, 2004, 23)The researchers reached the truthfulness of the content by informing and identifying the areas of the scale and formulating its paragraphs.

2.3.6 Apparent Validity of the Scale (Honesty of the Arbitrators)

 After the 50 paragraphs of the scale were prepared, drafted, and prepared in their initial form, they were presented to

A number of gentlemen with experience and specialization in the field of teaching methods, measurement, evaluation and football Appendix (1) for the purpose of evaluating them and judging their validity and suitability for the field to which they were allocated and making appropriate adjustments through (deleting, reformulating or adding a number of paragraphs) in a way that suits the research community, as well as mentioning the validity of the alternatives to the proposed answer, or adding and determining the alternative scale of the answer that they deem appropriate for the scale, as this procedure is an appropriate way to ensure the truthfulness of the knowledge scale , Appendix (3), as "we can consider the scale to be true after presenting it to a number of specialists and experts in the field measured

by the scale, as if the experts acknowledge that this scale measures the behavior that was designed to be measured, the researcher can rely on the judgment of experts" (Owais, 1999, 55), as well as "examining the language and its vocabulary, accuracy, validity, the degree of ambiguity or clarity of the meaning, and the grammar of the language, as well as identifying the weaknesses and strengths in each of them" (Al-Nabhan, 2004, 84).

After analyzing the responses and observations of the experts, the honesty of the experts was extracted through the percentage of the experts' agreement on the validity of the paragraphs of the scale, as the paragraphs agreed upon by (75%) or more of the experts' opinions were accepted, and some paragraphs were deleted and amended in terms of linguistic and legal formulation, as Bloom et al. indicate that "researchers should obtain a percentage of agreement of experts in the validity of the paragraphs and the possibility of making amendments by a percentage of less than (75%) or more than the estimates of experts in this The kind of honesty" (Bloom et al., 1983, 126)

(Table 4) shows the percentage of agreement of the experts on the paragraphs of the scale

Percentage of agreement	Number of agreeing arbitrators	Total paragraphs	Paragraph numbers in the origin of the test
100%	10	22	1، 2، 3، 5، 6، 7، 9، 10، 12، 13، 15، 16، 17، 19، 21، 23، 25، 27، 29، 33، 40، 44
90%	9	13	18، 22، 24، 28، 30، 31، 32، 34،، 37، 38، 42، 43، 45،
80%	8	10	20، 26، 35، 36، 39، 41، 46، 47، 48، 50
60%	6	5	4، 8، 11، 14، 49
50			Total

It is shown from Table (4) that the paragraphs (4, 8, 11, 14, and 49) have been deleted, and with this procedure, the scale consists of (45) items in its initial form Appendix (4), as it was relied on in the process of conducting the exploratory experiment of the scale and the validity of the construction (statistical analysis of the paragraphs).

2.3.7 Exploratory experiment

After distributing the paragraphs of the scale in a regular random distribution to avoid the respondent being affected by the pattern of each area of the scale, and after preparing its instructions in their initial form, the scale was applied to a sample of (5) judges, and the purpose of conducting the exploratory experiment was as follows:

- The clarity of the paragraphs and monitoring the respondents' reactions to the paragraphs of the scale during the application.

- Determine the time required to complete the answer on the scale.
- Ensure the clarity of the scale's instructions.
- Answering questions and inquiries, if any.
- Diagnosis of obstacles and negatives that researchers may encounter. (Al-Nabhan, 2004, 85)
2.3.8 Statistical analysis of the paragraphs of the scale

One of the "characteristics of a good scale is to perform the process of statistical analysis of its paragraphs to know the ability of the paragraph to distinguish between individuals who obtain high scores and those who obtain low scores on the same scale, i.e., extract the discriminating power of the paragraphs" (Nicholas, 2005, 30) and this is done by calculating the discriminating coefficient, as "the

discriminatory coefficient is useful in knowing the extent of the differences in performance between individuals in the measured trait, as well as the researchers confirm the validity of the internal and external scale" (Al-Imam et al. , 115, 1990) where the size of the initial discrimination sample reached (80) and the scale was applied to them in its initial form, and these statistical characteristics can be reviewed as follows:

2.3.8.1 Plains and difficulty parameters

 Some designers of the scale may use the degree of ease of the phrase to study its difficulty and arrange it according to the difficulty, as the link between ease and difficulty is directly, as is evident from:

 Ease coefficient + difficulty coefficient = 1 (i.e. one is correct) (Farhat, 2001 , 71)

The difficulty coefficient of the paragraph is a statistical indicator that expresses the characteristics of the objective paragraph that is corrected binarily with a completely correct reality and deserves (1) degrees, or completely incorrect and deserves (zero) degrees, so the coefficient of difficulty is equal to the number of degrees (1) (Al-Nabhan, 2004, 191) and works as a coefficient of difficulty and difficulty. The paragraph is about controlling the amount of its variance, and it means the percentage of examiners who answered the paragraph correctly, and the difficulty of the paragraph is calculated in the way of the two extreme groups and according to the following steps :

Examinees are ranked in descending order according to their overall scores.

- The highest (50%) and the lowest (50%) are determined, if the number of examined is small, or higher (27%) and less (27%), if the number of examinees is large, i.e. (100) individuals or more, and since the number of the discriminating sample is (80) judgments, it has been adopted. The   final sample of discrimination included (40) rulings, i.e. in each group (upper and lower).

"The paragraphs with a difficulty index of (40-60%) are classified as moderately difficult paragraphs" (Radwan, 2006, 230) and "a good scale includes paragraphs with a difficulty ratio ranging from (20-80%) and if the scale contains paragraphs whose difficulty level is more than (80%) or less than (20%), it means that the paragraphs need to be modified or canceled" (Al-Zahir et al., 2002, 129).

2.3.8.2 Differentiation factor

The paragraph discrimination coefficient is one of the important qualities in the analysis of paragraphs, as paragraph discrimination helps in determining its ability to distinguish between the low-achieving referees and the high-achieving referees, and to determine them, there must be a test in the light of which the total scores of the examinees (the sum of the scores on the items of the scale) may be used as an internal test (Al-Nabhan, 2004, 195-196). The ability of the paragraph to distinguish between the upper and lower groups, i.e. the ability of the paragraph to distinguish the individual differences between individuals who possess the measured attribute or know the answer and those who do not possess the measured attribute or do not know the correct answer for each paragraph of the scale (Al-Dulaimi and Al-Mahdawi, 2005, 89). Those who answered it correctly from the upper category are higher than the percentage of individuals who answered it correctly from the lower category, and the steps to calculate it are similar to the steps of calculating the difficulty factor for the objective paragraph.

The Discrimination Index refers to the degree to which the paragraph distinguishes between the levels of the examinees, as follows:

 - When a large number of examinees in the higher group get correct answers to the paragraph, we say that the discriminating ability of the paragraph is positive, in the sense that the paragraph has a positive indicator.

 - When a large number of examinees from the lower group get correct answers to the paragraph, we say that the discriminating ability of the paragraph is negative, in the sense that the paragraph has a negative index.

 - If the coefficient of discrimination = zero, it means that it did not differentiate between the two groups, i.e. a paragraph that does not have a discriminating ability

coefficient		Paragraph	coefficient		Paragraph	coefficient		Paragraph
Discrimination	Difficulty		Discrimination	Difficulty		Discrimination	Difficulty	
0٬98	0٬37	31	0٬11	0٬37	16	0٬59	0٬43	1
0٬87	0٬49	32	0٬74	0٬49	17	0٬37	0٬74	2
0٬59	0٬43	33	0٬48	0٬43	18	0٬59	0٬37	3
0٬96	0٬49	34	0٬37	0٬77	19	0٬49	0٬49	4
0٬77	0٬45	35	0٬59	0٬37	20	0٬43	0٬36	5
-0٬76	0٬43	36	0٬49	0٬19*	21	0٬87	0٬77	6
0٬87	0٬37	37	0٬43	0٬43	22	0٬59	0٬73	7
0٬59	0٬49	38	0٬87	0٬49	23	0٬37	0٬48	8
-0٬66	0٬43	39	0٬56	0٬36	24	0٬49	0٬29	9
0٬59	0٬43	40	0٬27	0٬59	25	0٬43	0٬51	10
0٬37	0٬49	41	0٬79	0٬37	26	0٬37	0٬54	11
-0٬9	0٬36	42	0٬94	0٬75	27	0٬59	0٬74	12
0٬77	0٬77	43	0٬73	0٬47	28	0٬48	0٬17*	13
0٬39	0٬15*	44	0٬67	0٬45	29	0٬88	0٬66	14
0٬68	0٬48	45	-0٬75	0٬67	30	0٬87	0٬35	15

*Easy paragraphs exclude ** Weak paragraphs exclude

Table (5) shows that the ratio of the difficulty coefficient for the items of the scale ranged between (0). 77-0.15) When referring to the table of parameters of distinguishing the paragraphs, "(0.20) is not used for its difficulty and more than (0.80) is not used for its ease" (Al-Imam et al., 1990, 119).

The discriminatory coefficient for the paragraphs of the scale ranged between (0.98-0.9) and usually the test   taker accepts the positive paragraphs with a distinction score of more than (0.20) and rejects or modifies the negative paragraphs and the paragraphs that are not discriminating (Al-Zahir et al., 2002, 129-131). m of the cognitive scale. The number of items of the non-discriminatory cognitive scale that were omitted by the methods of the ease and difficulty coefficient and the discriminant factor is five (13, 16, 21, 42, and 44).

2.3.8.3 Internal consistency coefficient method

 "The internal consistency of the scale or its homogeneity coefficient leads to an estimate of its formative validity" (Bahi, 35, 1999) and is called "the internal consistency of the scale and is measured by calculating the correlation coefficient between the single and the total sum of the dimensions, the total score of the scale" (Farhat, 68, 2001).   This method "provides us with a homogeneous scale in its paragraphs so that each item measures the same behavioral dimension as the scale as a whole, as well as its ability to highlight the correlation between the paragraphs of the scale" (Kazim, 101, 1990), after excluding the undifferentiated paragraphs, the correlation coefficient of the score of each item was found with the total score of the scale for the same discriminating sample of (80) provisions of Table (6).

Table (6) shows the correlation coefficient between the paragraphs and the total score of the scale of legal and theoretical knowledge of beach volleyball

Paragraph	Correlation coefficient	Significance of the differenc	Paragraph	Correlation coefficient	Significance of the differenc	Paragraph	Correlation coefficient	Significance of the differenc
1	0.802	Moral	16			31	0.386	Moral
2	0.778	Moral	17	0.283	Moral	32	0.485	Moral
3	0.711	Moral	18	0.856	Moral	33	0.775	Moral
4	0.304	Moral	19	0.821	Moral	34	0.468	Moral
5	0.496	Moral	20	0.624	Moral	35	0.332	Moral
6	0.476	Moral	21			36	0.417	Moral
7	0.621	Moral	22	0.533	Moral	37	0.747	Moral
8	0.731	Moral	23	0.851	Moral	38	0.545	Moral
9	0.375	Moral	24	0.405	Moral	39	0.614	Moral
10	0.523	Moral	25	0.273	Moral	40	0.249	Moral
11	0.769	Moral	26	0.438	Moral	41	0.894	Moral

		42	Moral	0.523	27	Moral	0.446	12
Moral	0.397	43	Moral	0.277	28			13
		44	Moral	0.745	29	Moral	0.302	14
Moral	0.677	45	Moral	0.497	30	Moral	0.456	15

Significant at the level of significance (0.05) and in front of the degree of freedom (78), the value of tabular (R) is equal to (0.220) (Al-Rawi, 463, 2000)

Table (6) shows that the values of the correlation coefficient between the items of the scale and the total score of the scale of legal and theoretical knowledge ranged between (0.894-0).249) When referring to the table of the significance of the correlation coefficient at the degree of freedom (78) and in front of the significance level (0.05), we find that the value of (R) is equal to 0.220 (in light of this, it is found that the value of (R) calculated for the cognitive paragraphs is greater than the value of (R) tabular, as it was   Accordingly, all the items of the cognitive scale proved a discriminating ability, as "the higher the coefficient of correlation of the dimensional scores with the total score of the scale, the more it indicates the availability of internal consistency of the scale as a whole, as the total score of the scale is the test to verify the truthfulness" (Farhat, 68, 2001). Thus, the scale in its final form after the process of statistical analysis of its paragraphs consists of (45) items that were relied on in the final application of the scale Appendix (5).

2.3.9 Stability of the scale
2.3.9.1 Half-hash method
Consistency refers to "   consistency or consistency in outcomes" (Gronbach, 1960, 126), and for the purpose of obtaining the stability of the scale, the method of halving was used, in the style of paragraphs (odd and even), after omitting the unmarked paragraphs from the scale, and then dividing into two halves, the first half representing the paragraphs with odd sequences and the second half representing the second half This method has been used in some studies, including the study of (Al-Kawaz, 76, 2005) and (Ahmed et al., 297, 2007), and the simple correlation coefficient was used between the scores of the two halves of the scale, so that the calculated value of (R) was equal to (0.89), that the correlation between the scores of each of the two halves of the scale is considered as The internal consistency of only half of the scale and not of the scale as a whole" (Abu Hattab et al., 116, 1993) In order to obtain an unbiased estimate of the stability of the entire scale, the Spearman-Brown equation was used, where the value of the total stability coefficient was (1.9.0), which is statistically indicative of the stability of the scale.

2.3.9.2 Alpha coefficient method:
This is the method proposed by Cronbach Alpha to estimate the consistency of the internal consistency of the scale when the paragraphs are not corrected bilaterally, and that this method "is of particular importance because it is used in calculating the stability coefficient of essay and objective tests" (Al-Nabhan, 2004, 248), and the paragraphs of questionnaires whose answers require selection. Among several alternatives (Alam, 2000, 100), the value of the stability coefficient was 0.85, which is a high stability.
2.3.10 Description of the scale

The scale of legal and theoretical knowledge of beach volleyball referees, the scale is composed in its final form of (40) items of the type of multiple choice, and the answer key is (the only answer pattern) and the paragraphs of the scale are answered through four alternatives, one of which is only true and the rest is false, as the scale is corrected in the light of its correction key appendix. (6) , where weights are given for the answer (correct, one score) (wrong answer, zero score) and the highest total score of the scale is (40) degrees, while the lowest total score of the scale is (zero)

2.4 Final Application of the Cognitive Scale

The scale of legal and theoretical knowledge of beach volleyball was applied to the sample of (30) referees, as the method of answering the paragraphs of the scale and its instructions was explained by placing a circle on the alternative that it deems appropriate under each paragraph that was chosen, noting that the answer is on the scale itself, then the scales were collected from the testers and Correcting it so that the tester's score on the scale is the sum of his scores on all paragraphs of the scale

2.5 Statistical Methods

- Arithmetic Mean - Pattern - Standard Deviation - Equation of the Torsion Coefficient of Carl Pearson

- Simple correlation coefficient - hypothetical mean of the scale - coefficient of ease and difficulty.

- Discrimination coefficient - percentage (Omar et al., 2001, 90).

3. Present, analyze, and discuss the results
3-1 Presentation of the results of the research sample in the scale of legal and theoretical knowledge of beach volleyball

 After the researchers confirmed the validity of the scale of legal and theoretical knowledge of beach volleyball that was applied to the research sample, the suitability of the scale was confirmed by the equation of the torsion coefficient (Pearson) and the natural distribution curve (moderate) Table (7)
 Table (7) shows the arithmetic mean, standard deviation, pattern and torsion coefficient of the research sample's answers in the scale of legal and theoretical knowledge of beach volleyball

Conclusion	Torsion coefficient	Lines	Standard deviation	Arithmetic Average	Sample	Scale	Statistical Milestones
Normal*	0‹91	25‹73	2‹63	29‹15	30	Legal knowledge of bea[...] volleyball	

Torsion is considered normal, and the tests are suitable for the sample if the torsion coefficient occurs between (1) (Al-Atrakji, 1980, 204) and (Ahmed et al., 2007, 299)$\pm$

3.2 Presentation of the results of the evaluation of the level of legal knowledge of beach volleyball among the research sample

 In order to assess the level of legal and theoretical knowledge of beach volleyball in the research sample, the researchers found the hypothetical average of the scale and compared it with the arithmetic mean score of the sample, and the legal knowledge will be classified into high knowledge and low knowledge, on the basis that the mean of the sample that exceeds the hypothetical average of the scale in a significant way is high knowledge, while the non-significant value represents a knowledge within the limits of the

hypothetical average, and the lower values From the hypothetical average, it represents low knowledge Table (8)

Table (8) shows the arithmetic mean , standard deviation , hypothetical mean and the value of (t) calculated for the research sample in the scale of legal knowledge of beach volleyball

value Sig	Calculated value (t)	Hypothetical Average	Standard deviation	Arithmetic Average	Sample	Scale	Statistical Milestones
0.001	4٫12	25*	2٫63	29٫15		Legal knowledge of beach volleyball	

*Significant at the level of significance ≥ (0.05) and in front of the degree of freedom (29), the value of tabular (t) = (2,045)

(Al-Rawi, 2000, 465)

Table (8) shows that the value of the arithmetic average of the research sample's answers on the scale of legal and theoretical knowledge of beach volleyball has reached (29.15) A score with a standard deviation of (2.63) degrees, and when testing the significance of the differences between the average scores of the sample and the hypothetical average of the scale of (25) scores, and using the (t) test for one sample, the calculated value of (t) reached (4.12) scores, at the level of significance ≥ (0.05), which is greater than the value of (t) of the tabular (2,045) scores, which indicates that the difference is moral and in favor of the research sample.

From the above, the results showed that the referees of the beach volleyball game have a level of legal knowledge that is higher than the hypothetical average of the scale, and this indicates that the result is positive, which leads to them enjoying a good level of legal and theoretical knowledge that enables them to excel in the theoretical aspect when performing in refereeing the game, which in turn positively affects the The course of the matches, in which the refereeing errors are reduced, what makes the teams compete seriously, away from the refereeing errors that affect the course of the match, in which we specialize in the game of volleyball with one point, in which the team can lose a match or a half through a single refereeing error.

4.1 Conclusions
- The effectiveness of the scale that was built to measure the legal knowledge of beach volleyball .
- Beach volleyball referees are distinguished by their good knowledge of the rules of the game of beach volleyball.
- Holding development courses related to developments and updates related to the game of beach volleyball to keep pace with the development
4.2 Recommendations
- Adopting the scale by the competent authorities in evaluating the referees periodically and following up the developments of the game list.
- Building and preparing a scale of legal knowledge by researchers on other activities

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