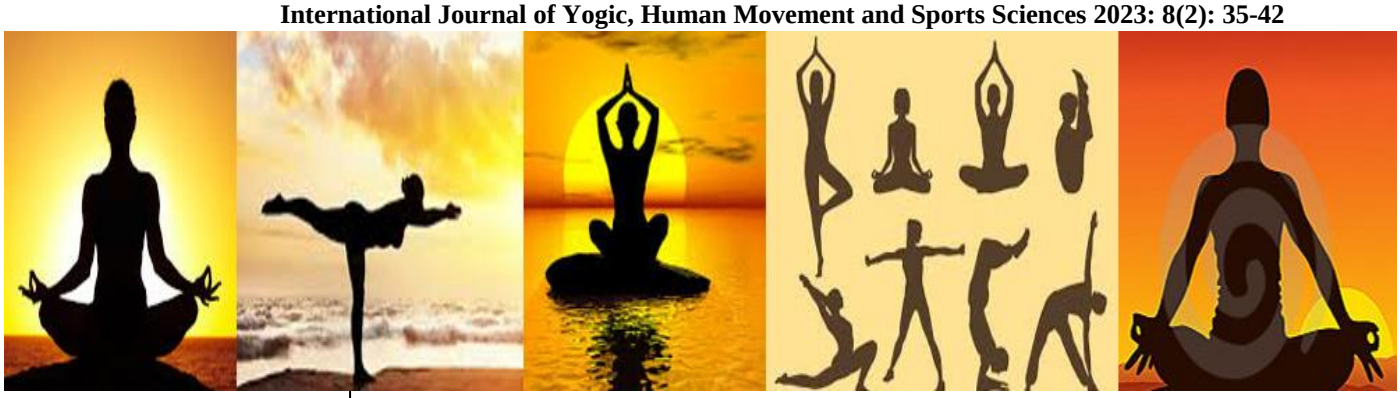

ISSN: 2456-4419
Impact Factor: (RJIF): 5.18
Yoga 2023; 8(2): 35-42

www.theyogicjournal.com
Received: 29-05-2023
Accepted: 06-07-2023

Dr. Yashar Mohammed Jalil
Lecturer, Faculty of Physical Education and Sports Sciences/ University of Babylon, Iraq

Corresponding Author:
Dr. Yashar Mohammed Jalil
Lecturer, Faculty of Physical Education and Sports Sciences/ University of Babylon, Iraq

Factorial validity to perform some offensive sentences for fencing players with foil weapons

Dr. Yashar Mohammed Jalil

DOI: https://doi.org/10.22271/yogic.2023.v8.i2a.1432

Abstract
The study aimed to identify the factorial validity of the tests of some offensive sentences for the fencing players with the fencing weapon, as the researcher used the descriptive method in the relational method for its suitability and the nature of the research problem. The research sample consisted of fencing practitioners who represent students (the first stage and the third stage) in the College of Physical Education and Sports Sciences - University of Babylon for the academic year 2022/2023, who number (50) players. The researcher used testing and measurement as data collection tools, and the study included (15) a test for offensive sentences in fencing, and the researcher used the spss statistical bag to obtain the results, and it was concluded that:
Factorial analysis using orthogonal rotation conducted on (15) tests for the performance of some offensive sentences in fencing showed six factors whose acceptance was explained by three factors so that each factor included (3) tests and as explained:(The first factor included (3) tests for offensive sentences, which are (4, 9, 10). The second factor included (3) tests for offensive sentences, which are (5, 11, 12).and the third factor included (3) tests for offensive sentences, which are (13, 3, 6). In light of these conclusions, the researcher recommended the following: Reliance on tests whose reliability has been confirmed and building a test battery for the same elements after excluding tests that did not prove their validity.

Keywords: Factorial validity, fencing offensive sentences, foil weapon

1. Introduction
Tests are one of the most important work tools for coaches, workers, and researchers in the sports field, as we note the great interest in the quality, accuracy, and validity of these tests. The validity of the test, including the factorial validity method, is one of the best ways to identify the validity of the tests, as the factorial validity it is "a set of statistical steps that aims to determine the correlations between all the variables involved in the study to show the saturation of these variables within the least possible number of factors that describe the phenomenon that the variables gain significance" (Muhammad Jassim Al-Yasiri & others, 2011, p. 119) [5].
As the sport of fencing is one of the sports that requires the player to have physical and motor capabilities and a good and quick skillful performance in terms of speed and accuracy to reach the goal and take a touch from the opponent, and the most touches that the player gets from the movement during the performance, and given the importance of offensive sentences in the sport of fencing, we find the availability of a number of A huge number of these sentences, which are associated with many components, namely (basic skills, defense, and attack). Hence the importance of the research in recognizing the factor validity of the performance of some offensive sentences for fencing players with weapons fencing, as the fencing match is a group of consecutive kinetic or offensive sentences that the fencer performs based on his physical and skill capabilities.
And the great interest in the sport of fencing made us shed light on this game greatly and follow the simplest details that could have a positive impact on the development of the players of this game, and through the researcher's interest in the offensive sentences of fencing, he

found that these sentences can overlap with each other Which prompted the researcher to think about analyzing the results of these tests in a factorial analysis that could lead to determining the nature and type of overlap between these offensive skills or sentences in order to reach the most accurate results in measuring these sentences for fencing players with fencing weapons.

1.2. Research objective

- Identify the statistical description of the research variables.
- Finding the factor validity for the performance of some offensive sentences for fencing players with a foil weapon.

2. Research methodology and field procedures:

2.1. Research Methodology

The researcher used the descriptive approach in both survey and correlational studies, due to its suitability to the nature and problem of the research.

2.1.1 Community and sample research

The research community was determined by students practicing fencing in the College of Physical Education and Sports Sciences - University of Babylon Sports for the academic year (2022-2023), whose number is (50) players who were collected in two groups (20) players from the first stage and (30) players from the third stage.

2.2. Means, devices and tools used in the research

2.2.1 Means of collecting data and information.

- Arabic and foreign sources.
- Personal interview.
- Testing and measurement.

2.2.2 The devices and tools used in the research.

- Electronic stopwatch number (1).
- Legal fencing court number (1).
- Two (2) Chinese-made fencing weapons.
- Sign of stabbing, made locally, hanging on the wall, number (2).
- Measuring tape.
- Colored adhesive tapes.
- Whistle.
- Equipment for fencing players (mask, hand, fencing suit).

2.3. Field research procedures

2.3.1 Determine the tests used

The tests used for fencing players were determined, as the level of performance of some offensive sentences in fencing was evaluated by two arbitrators by setting a score out of (10), taking the arithmetic mean of their scores, as shown in Table (1):

Table 1: Shows the tests of the offensive sentences for the fencing players with the fencing weapon.

N	Offensive sentences tests in fencing
1	Take a step forward + fourth defense + direct attack with stabbing movement
2	Jump forward + sixth defense + scalar attack (1,2) with the stabbing movement
3	Advance with three leaps forward + fourth defense + attack by changing direction with the stabbing movement
4	Step back + seventh defense + straight attack with stabbing movement
5	Progress by jumping forward + striking the blade + attack by changing direction with the stabbing movement
6	Retreat by jumping back + fourth defense + scalar attack (1,2) with the stabbing movement
7	Retreat with two jumps backwards + sixth defense + attack by changing direction with the stabbing movement
8	Retreat one step forward + sixth defense + circular attack with stabbing movement
9	Reverse step forward + sixth defense + straight attack with stabbing movement
10	Advance two steps forward + eighth defense + cutting attack with the stabbing movement
11	Reverse advance forward + jump forward + eighth defense + attack by changing direction with the stabbing movement
12	Retreat with a step backwards + eighth defense + direct attack with the stabbing movement
13	Retreat with a step back + leap forward + eighth defense + scalar attack (1,2) with the stabbing movement
14	Reverse retreat + leap forward + seventh defense + attack by changing direction with the stabbing movement
15	Advance two steps forward + sixth defense + cutting attack with the stabbing movement

After the used tests were identified and nominated, the researcher sought to find (the validity of the test, and its scientific basis) in terms of (validity and reliability), as shown below:

1. The validity of the tests: It included the following

First: The discriminatory ability of the tests

Perhaps one of the objective indicators of the validity of the test is its discriminatory ability. The possibility of the test is to differentiate between the achievement of the sample members. In order to calculate the discriminatory ability of the tests, the researcher arranged the scores obtained from the sample of the experiment and in all the tests in ascending order from the lowest to the highest score. After that, (27%) were taken from the higher grades and (27%) from the lower grades, as the number of players became (28) players, (14) players from the upper group and (14) players from the lower group. After that, the researcher By extracting the statistical indicators for both groups (the arithmetic mean and standard deviations) and treating them statistically with the (t) test for independent samples, from which he obtained his results, as the results confirmed that all these tests have a high discriminatory ability, which gives them the validity of use, through what came in the (t) test values for the independent samples calculated, which were greater than their tabular value, which amounted to (2.048) at a degree of freedom. (28) and the level of significance (0.05). Table (2) shows that.

Table 2: Shows the discriminatory ability of the researched tests:

Fencing sentences tests	Measuring unit	Higher group		Lower group		T value calculated	T value tabulated	Sig type
		Mean	Std. deviation	Mean	Std. deviation			
Take a step forward + fourth defense + direct attack with stabbing movement	Degree	7.571	0.513	3.857	0.949	12.877	2.048	Sig
Jump forward + sixth defense + scalar attack (1,2) with the stabbing movement	Degree	7.928	0.267	4.642	0.841	13.918	2.048	Sig
Advance with three leaps forward + fourth defense + attack by changing direction with the stabbing movement	Degree	7.285	0.468	3.142	0.864	15.763	2.048	Sig
Step back + seventh defense + straight attack with stabbing movement	Degree	7.571	0.513	3.357	0.744	17.427	2.048	Sig
Progress by jumping forward + striking the blade + attack by changing direction with the stabbing movement	Degree	8.000	0.000	4.285	0.726	19.135	2.048	Sig
Retreat by jumping back + fourth defense + scalar attack (1,2) with the stabbing movement	Degree	7.142	0.534	3.214	0.892	14.129	2.048	Sig
Retreat with two jumps backwards + sixth defense + attack by changing direction with the stabbing movement	Degree	7.000	0.554	3.214	0.587	17.667	2.048	Sig
Retreat one step forward + sixth defense + circular attack with stabbing movement	Degree	8.071	0.267	5.142	1.167	9.150	2.048	Sig
Reverse step forward + sixth defense + straight attack with stabbing movement	Degree	7.928	0.267	4.285	0.825	15.710	2.048	Sig
Advance two steps forward + eighth defense + cutting attack with the stabbing movement	Degree	7.357	0.497	3.071	0.730	18.154	2.048	Sig
Reverse advance forward + jump forward + eighth defense + attack by changing direction with the stabbing movement	Degree	7.000	0.392	3.142	0.770	16.695	2.048	Sig
Retreat with a step backwards + eighth defense + direct attack with the stabbing movement	Degree	7.714	0.468	3.285	0.726	19.169	2.048	Sig
Retreat with a step back + leap forward + eighth defense + scalar attack (1,2) with the stabbing movement	Degree	7.357	0.497	3.357	0.841	15.307	2.048	Sig
Reverse retreat + leap forward + seventh defense + attack by changing direction with the stabbing movement	Degree	7.500	0.518	3.857	0.864	13.519	2.048	Sig
Advance two steps forward + sixth defense + cutting attack with the stabbing movement	Degree	7.928	0.267	3.785	0.974	15.334	2.048	Sig

Second: The level of difficulty of the tests

To find out the good spread of the sample at each of the tests for the examined fencing sentences, the researcher extracted the value of the torsion coefficient for the tests that were applied to the sample, and its values indicated that all tests achieve the mediocre curve. In order to view these results, we shed light on what was mentioned in Table (3). It is the small number of standard error values (p), which confirms the appropriateness of the sample size and the correctness of its representation of the original population. It is also noted that all the values of the torsion coefficient do not exceed (1) in any way, and this indicates that the candidate tests are characterized by moderation. As shown in Table (3).

Table 3: Shows the statistical estimates and the nature of the distribution of the sample items in each of the researched tests:

Fencing sentences tests	Mean	Std. deviation	Standard error	Mode	Skew ness	distribution nature
Take a step forward + fourth defense + direct attack with stabbing movement	5.71	2.03	0.384	8.00	0.235-	Closer to the equinox
Jump forward + sixth defense + scalar attack (1,2) with the stabbing movement	6.28	1.78	0.336	8.00	0.339-	Closer to the equinox
Advance with three leaps forward + fourth defense + attack by changing direction with the stabbing movement	5.21	2.21	0.418	7.00	0.160-	Closer to the equinox
Step back + seventh defense + straight attack with stabbing movement	5.46	2.23	0.422	8.00	0.099-	Closer to the equinox
Progress by jumping forward + striking the blade + attack by changing direction with the stabbing movement	6.14	1.95	0.369	8.00	0.215-	Closer to the equinox
Retreat by jumping back + fourth defense + scalar attack (1,2) with the stabbing movement	5.17	2.12	0.401	7.00	0.177-	Closer to the equinox
Retreat with two jumps backwards + sixth defense + attack by changing direction with the stabbing movement	5.10	2.00	0.379	7.00	0.010-	Closer to the equinox
Retreat one step forward + sixth defense + circular attack with stabbing movement	6.60	1.70	0.322	8.00	0.726-	Closer to the equinox
Reverse step forward + sixth defense + straight attack with stabbing movement	6.10	1.95	0.368	8.00	0.285-	Closer to the equinox
Advance two steps forward + eighth defense + cutting attack with the stabbing movement	5.21	2.26	0.428	7.00	0.080-	Closer to the equinox
Reverse advance forward + jump forward + eighth defense + attack by changing direction with the stabbing movement	5.07	2.05	0.388	7.00	0.158-	Closer to the equinox

Retreat with a step backwards + eighth defense + direct attack with the stabbing movement	5.50	2.33	0.440	8.00	0.094-	Closer to the equinox
Retreat with a step back + leap forward + eighth defense + scalar attack (1,2) with the stabbing movement	5.35	2.14	0.405	7.00	0.164-	Closer to the equinox
Reverse retreat + leap forward + seventh defense + attack by changing direction with the stabbing movement	5.67	1.98	0.374	4.00	0.193-	Closer to the equinox
Advance two steps forward + sixth defense + cutting attack with the stabbing movement	5.85	2.22	0.420	8.00	0.264-	Closer to the equinox

2. Scientific basis for the tests

First: Validity of the test: Validity is one of the indicators that must be available in the optional tool approved for measuring any of the mathematical characteristics and phenomena. The validity of the test means: "The valid test measures what is actually set to measure it" (Bahi, Mustafa Hussein, 1999, p. 23) [2].

Accordingly, the researcher relied on the factorial validity in determining the validity of the researched tests, as the factorial validity is the most accurate type of validity.

Second: Test Reliability

Test reliability means "the accuracy with which the test measures a subject phenomenon Measurement" (Farhat, Laila Al-Sayed, 2001, p. 144) [3]. For the purpose of extracting the reliability coefficient, the researcher used the test and re-test method, and then extracted the correlation coefficient (Pearson) between the results of the first and second test. After extracting the values of the correlation coefficient, the researcher extracted significant values of correlation through the t-law (Muhammad Hussein Baqer & Abdul Hamid Abdul Majeed, 1988, p. 190) [4], and the researcher concluded that all tests have a high degree of reliability at a degree of freedom (48) and a level of significance (0.05), as the value of the reliability coefficient ranged from (0.88) to (0.99), which allows the researcher to start the main experiment.

2.4 Final application of offensive sentences tests in fencing

The researcher, with the help of the assistant work team, conducted the main experiment for the period from (15/1/2023) to (8/4/2023). Note that the fencing offensive sentences tests were distributed over two days, as shown in Table (4):

Table 4: Shows the distribution of the offensive sentences tests in fencing on the main days of the experiment:

First day tests	Second day tests
Take a step forward + fourth defense + direct attack with stabbing movement	Reverse step forward + sixth defense + straight attack with stabbing movement
Jump forward + sixth defense + scalar attack (1,2) with the stabbing movement	Advance two steps forward + eighth defense + cutting attack with the stabbing movement
Advance with three leaps forward + fourth defense + attack by changing direction with the stabbing movement	Reverse advance forward + jump forward + eighth defense + attack by changing direction with the stabbing movement
Step back + seventh defense + straight attack with stabbing movement	Retreat with a step backwards + eighth defense + direct attack with the stabbing movement
Progress by jumping forward + striking the blade + attack by changing direction with the stabbing movement	Retreat with a step back + leap forward + eighth defense + scalar attack (1,2) with the stabbing movement
Retreat by jumping back + fourth defense + scalar attack (1,2) with the stabbing movement	Reverse retreat + leap forward + seventh defense + attack by changing direction with the stabbing movement
Retreat with two jumps backwards + sixth defense + attack by changing direction with the stabbing movement	Advance two steps forward + sixth defense + cutting attack with the stabbing movement
Retreat one step forward + sixth defense + circular attack with stabbing movement	

2.5 Statistical Methods: The researcher used the following statistical methods (Al-Yasiri, Muhammad Jassim, 2011, 107-290) [5]:

- Arithmetic mean.
- standard deviation.
- The simple correlation coefficient.
- Median
- Mode.
- Skew ness.
- Factorial analysis, Hottelling's basic components method using orthogonal rotation (Varimax), data were processed using the statistical package (SPSS).

3. Analyzing test results to extract factors

In these steps, the researcher presents all the procedures used to extract the final factors, as follows:

3.1 Statistical description of the search variables (offensive sentences in fencing)

In order to be able to study the reality of the tests of the offensive sentences in fencing among the sample, we must present the most important data related to describing what was achieved for the sample in each of these tests or the offensive sentences in the sport of fencing, as we highlight what came in Table (5):

Table 5: Shows the statistical description of the offensive sentences tests for the fencing players with fencing weapons:

N	Fencing sentences tests	Mean	Median	Std. Deviation	Mode	Standard error	Skew ness
1	Take a step forward + fourth defense + direct attack with stabbing movement	5.88	6.00	1.598	7.00	0.226	-0.514
2	Jump forward + sixth defense + scalar attack (1,2) with the stabbing movement	6.40	7.00	1.370	7.00	0.193	-0.625
3	Advance with three leaps forward + fourth defense + attack by changing direction with the stabbing movement	5.22	5.00	1.764	4.00	0.249	-0.163
4	Step back + seventh defense + straight attack with stabbing movement	5.52	6.00	1.740	6.00	0.246	-0.204
5	Progress by jumping forward + striking the blade + attack by changing direction with the stabbing movement	6.20	6.00	1.525	8.00	0.215	-0.352
6	Retreat by jumping back + fourth defense + scalar attack (1,2) with the stabbing movement	5.12	5.00	1.636	5.00	0.231	-0.113
7	Retreat with two jumps backwards + sixth defense + attack by changing direction with the stabbing movement	5.18	5.00	1.560	6.00	0.220	-0.144
8	Retreat one step forward + sixth defense + circular attack with stabbing movement	6.70	7.00	1.328	8.00	0.187	-0.995
9	Reverse step forward + sixth defense + straight attack with stabbing movement	6.18	6.00	1.507	8.00	0.213	-0.431
10	Advance two steps forward + eighth defense + cutting attack with the stabbing movement	5.30	5.00	1.809	7.00	0.255	-0.168
11	Reverse advance forward + jump forward + eighth defense + attack by changing direction with the stabbing movement	5.18	5.00	1.586	7.00	0.224	-0.372
12	Retreat with a step backwards + eighth defense + direct attack with the stabbing movement	5.58	6.00	1.819	8.00	0.257	-0.208
13	Retreat with a step back + leap forward + eighth defense + scalar attack (1,2) with the stabbing movement	5.64	6.00	1.735	7.00	0.245	-0.539
14	Reverse retreat + leap forward + seventh defense + attack by changing direction with the stabbing movement	5.66	5.50	1.546	5.00	0.218	-0.158
15	Advance two steps forward + sixth defense + cutting attack with the stabbing movement	6.08	6.00	1.712	8.00	0.242	-0.663

What the results of Table (5) show is the lack of standard error values, which confirms the appropriateness of the sample size and the correctness of its representation of the original population. As the value of the standard error is a measure of the degree of dependence on the sample mean, the smaller its value, the greater the dependence on it (Al-Yasiri, Muhammad Jassim,1995, p. 273) [6].

It is also noted that all the values of the torsion coefficient do not exceed (1) in any way, and this indicates that the candidate tests are characterized by moderation. Accordingly, we can go here to build standards after making sure that the sample is distributed normally.

3.2 Matrix of interrelationships of tests of offensive sentences for fencing players with fencing weapons

"The method of factor analysis is based mainly on correlation coefficients between variables (tests used), that is, it relies on showing the importance of each of these variables on the basis of the relationship of any variable to other variables" (Al-Takriti, Wadih Yassin & Al-Obeidi, Hassan Muhammad, 1999, p. 360) [7]. There is no doubt that factor analysis seeks to express correlation coefficients with specific factors. In order to achieve these coefficients, they must be calculated from the data matrix using the simple correlation coefficient (Pearson) equation.

It can be seen from Table (6) the matrix of inter-correlation ships for the offensive sentences tests in fencing, as it is noted that it includes (105) correlations, the diagonal cells were not counted, of which (62) positive correlation coefficient and (43) negative correlation coefficient, and the matrix indicates the existence of a significant correlation (≤ 0.01) and (≤ 0.05), and that the diversity of this correlation indicates the possibility of reaching factors
pure and sectarian.

Table 6: Shows the matrix of interrelationships of the research variables:

Correlation Matrix															
Correlation	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1	1.000														
2	.460	1.000													
3	-.287-	-.257-	1.000												
4	-.278-	-.175-	.055	1.000											
5	.136	.146	.014	-.140-	1.000										
6	-.010-	-.104-	.196	.164	.358	1.000									
7	.892	.366	-.155-	-.321-	.105	-.001-	1.000								
8	.377	.897	-.206-	-.116-	.070	-.039-	.292	1.000							
9	-.329-	-.194-	.046	.943	-.078-	.165	-.344-	-.156-	1.000						
10	-.114-	-.066-	.132	.520	-.059-	.325	-.092-	-.140-	.444	1.000					
11	.153	.173	.051	-.205-	.938	.353	.118	.104	-.142-	-.161-	1.000				
12	.130	.151	.023	-.039-	.524	.531	.142	.175	-.039-	.219	.522	1.000			
13	-.141-	-.033-	.540	.144	.012	.454	-.066-	-.057-	.064	.613	.002	.268	1.000		
14	-.223-	-.272-	.148	.355	.081	.121	-.135-	-.309-	.333	.599	-.049-	-.161-	.303	1.000	
15	.443	.438	-.148-	-.240-	.080	-.229-	.491	.262	-.259-	.130	.010	-.081-	.058	.141	1.000

3.3 Factorial analysis of tests of offensive sentences for fencing players with fencing weapons

3.3.1 Extract the latent roots, variance ratios, and the accumulated variance of the factors

To achieve the objectives of the research, the inter-correlations matrix was factorially analyzed by the method of the basic components of (Hotling), which is characterized by the fact that it extracts the maximum correlational variance of the matrix, as the factors in it are determined according to their extraction on the basis of their realization of the in-kind values (latent roots) equal to or greater than the correct one for each factor. (Hassanein, Muhammad Sobhi, 1982, p. 124) [8]. As it appears from Table (7) that there are six factors whose latent roots exceeded the correct one, and since the extracted factors depend mainly on the number of potential roots equal to and greater than the correct one, this gives an indication that the number of factors extracted in this research is six factors (Farag, Safwat, 1980, p. 128) [9]. The values of the latent roots of the factors, according to their extraction, ranged between (1.018 - 3.985), and the latent roots of the extracted (accepted) factors were (12.838), while the total potential roots totaled (15). While the percentages of the variance that it interpreted according to its extraction also ranged between (6.789 - 26.564), and it explained the value of (85.583%) of the values of the accumulated variance, which represents (100%).

Table 7: Shows the values of the latent roots, the percentage of variance, and the cumulative variance of the factors:

N	Underlying root values	Contrast ratio	Accumulated contrast
1	3.985	26.564	26.564
2	2.868	19.119	45.682
3	2.103	14.020	59.703
4	1.588	10.586	70.289
5	1.276	8.505	78.794
6	1.018	6.789	85.583
7	.728	4.853	90.436
8	.466	3.108	93.545
9	.342	2.283	95.827
10	.252	1.682	97.509
11	.140	.930	98.439
12	.086	.574	99.013
13	.063	.421	99.434
14	.048	.320	99.754
15	.037	.246	100.000

3.3.2 Initial solution of the model for the factor matrix (before orthogonal rotation)

Table 8: Shows the matrix of factors for the offensive sentences tests in fencing before the rotation:

N	First factor	Second factor	Third factor	Fourth factor	Fifth factor	Sixth factor
1	0.738	0.127	0.359	0.070-	0.215	0.403-
2	0.672	0.152	0.425	0.309	0.331-	0.308
3	0.368-	0.256	0.134-	0.507-	0.368-	0.145
4	0.677-	0.120	0.396	0.516	0.066	0.100-
5	0.266	0.731	0.370-	0.152	0.350	0.273
6	0.199-	0.743	0.095-	0.002	0.143-	0.351-
7	0.685	0.143	0.364	0.232-	0.232	0.405-
8	0.604	0.117	0.354	0.384	0.469-	0.231
9	0.672-	0.116	0.305	0.560	0.117	0.069-
10	0.512-	0.439	0.606	0.111-	0.040	0.019-
11	0.323	0.702	0.451-	0.149	0.249	0.231
12	0.163	0.762	0.162-	0.143	0.166-	0.237-
13	0.345-	0.544	0.289	0.480-	0.399-	0.043
14	0.514-	0.225	0.366	0.226-	0.475	0.307
15	0.471	0.043	0.554	0.298-	0.273	0.322

3.3.3 Final solution of the model for the factor matrix (after orthogonal rotation)

Table 9: Shows the matrix of factors for the offensive sentences tests in fencing after rotation:

N	First factor	Second factor	Third factor	Fourth factor	Fifth factor	Sixth factor
1	0.151-	0.079	0.894	0.142-	0.233	0.014
2	0.075-	0.097	0.227	0.066-	0.936	0.092
3	0.169-	0.004-	0.311-	0.693	0.163-	0.010
4	0.930	0.099-	0.181-	0.030	0.039-	0.019-
5	0.066-	0.968	0.010	0.040-	0.034	0.132
6	0.281	0.485	0.151	0.515	0.122-	0.358-
7	0.203-	0.051	0.908	0.031-	0.137	0.078
8	0.046-	0.047	0.146	0.052-	0.943	0.084-
9	0.910	0.033-	0.233-	0.044-	0.071-	0.026-
10	0.637	0.024-	0.115	0.565	0.043-	0.309
11	0.157-	0.953	0.004-	0.038-	0.064	0.017
12	0.101	0.642	0.213	0.324	0.145	0.378-
13	0.119	0.030	0.014-	0.930	0.034	0.096
14	0.420	0.068	0.077-	0.247	0.312-	0.689
15	0.171-	0.027-	0.442	0.022	0.323	0.683

3.3.4 Interpretation of the extracted factors

Table 10: Shows saturations of the offensive sentences tests for fencing after orthogonal rotation:

Factors	Sequencing	Name of the test (offensive sentences for fencing)	Saturation
First factor	4	Step back + seventh defense + straight attack with stabbing movement	0.930
	9	Reverse step forward + sixth defense + straight attack with stabbing movement	0.910
	10	Advance two steps forward + eighth defense + cutting attack with the stabbing movement	0.637
The underlying root of the factor		2.477	
The factor-explained variance ratio		26.564	
Second factor	5	Progress by jumping forward + striking the blade + attack by changing direction with the stabbing movement	0.968
	11	Reverse advance forward + jump forward + eighth defense + attack by changing direction with the stabbing movement	0.953
	12	Retreat with a step backwards + eighth defense + direct attack with the stabbing movement	0.642
The underlying root of the factor		2.563	
The factor-explained variance ratio		19.119	
Fourth factor	13	Retreat with a step back + leap forward + eighth defense + scalar attack (1,2) with the stabbing movement	0.930
	3	Advance with three leaps forward + fourth defense + attack by changing direction with the stabbing movement	0.693
	6	Retreat by jumping back + fourth defense + scalar attack (1,2) with the stabbing movement	0.515
The underlying root of the factor		2.138	
The factor-explained variance ratio		10.586	

It can be seen from Table (10) the variables that were saturated on the factor (the first, the second, and the fourth) using orthogonal rotation with a value of (± 0.50) or more, as the number of tests for each factor was (three tests), and the percentage of the factorial variance explained by the first factor was (26.564).), and for the second factor (19.119), and for the fourth factor (10.586), and the tests that were approved for the first factor are (4), (9) and (10), and for the second factor they are (5), (11) and (12), and for the fourth factor they are (13) and (13). 3) and (6), while the value of the latent roots for each factor, respectively, was (2.477, 2.563, 2.138), as all of them represent (9) tests for the offensive sentences in the fencing, which were represented by the truest representation of the tests.

4. Conclusions and Recommendations

4.1 Conclusions

The factorial analysis using orthogonal rotation conducted on (15) tests for the performance of some offensive sentences in fencing showed six factors whose acceptance was explained by three factors, so that each factor included (3) tests and as explained:

- The first factor (stepping backwards + seventh defense + direct straight attack with the stabbing movement, taking a reverse step forward + sixth defense + direct straight attack with the stabbing movement, taking two steps forward + eighth defense + cutting attack with the stabbing movement).
- The second factor (advances by jumping forward + striking the blade + attack by changing direction with the stabbing movement, backward advance + jumping forward + eighth defense + attack by changing direction with the stabbing movement, retreating with a step backwards + eighth defense + direct attack with the stabbing movement) .
- The third factor: (retreating a step backwards + leaping forward + eighth defense + numerical attack (1,2) with the stabbing movement, advancing with three leaps forward + fourth defense + attack by changing direction with the stabbing movement, retreating by jumping backwards + fourth defense + numerical attack (1,2) with the stabbing movement)

The importance of the extracted factors lies in their composition more than in their arrangement, as each extracted factor has its own importance when describing the offensive sentences tests of the fencing players.

4.2 Recommendations

1. Reliance on tests whose reliability has been confirmed.
2. Building a test battery for the same elements after excluding tests whose validity has not been proven.

5. References

1. Muhammad Jassim Al-Yasiri, others. Statistics, analysis between theory and practice, 1st edition, Al-Jaf Al-Ashraf, Dar Al-Diyaa for printing; c2011.
2. Bahi Mustafa Hussein. Scientific Transactions between Theory and Application, 1st edition, Cairo, Al-Kitab Center for Publishing; c1999.
3. Farhat Laila Al-Sayed. Measurement and Testing in Physical Education, 1st edition, Cairo, Al-Kitab Center for Publishing; c2001.
4. Muhammad Hussein Baqer, Abdul Hamid Abdul Majeed. Statistics for Planners and Researchers, Baghdad, Al-Jahiz Press; c1988.
5. Al-Yasiri Muhammad Jassim. Principles of Educational Statistics - An Introduction to Descriptive and Inferential Statistics, 2nd Edition, Al-Najaf Al-Ashraf, Dar Al-Diyaa for Printing and Design; c2011.
6. Al-Yasiri Muhammad Jassim. Building and legalizing a physical fitness test battery to select young people aged (10-12) years, unpublished doctoral thesis, College of Physical Education, University of Baghdad; c1995.
7. Al-Takriti Wadih Yassin, Al-Obeidi Hassan Muhammad. Statistical Applications and Computer Uses in Physical Education Research, Mosul, Dar Al-Kutub for Printing and Publishing; c1999.
8. Hassanein, Muhammad Sobhi. Methods of constructing tests and measurements in physical education, Cairo, Dar Al-Shaab Press; c1982.
9. Farag Safwat. Factorial Analysis in the Behavioral Sciences, Cairo, Dar Al-Fikr Al-Arabi, Anglo-Egyptian; c1980.