

Standardizing a battery of skill tests for football defenders aged under 19

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Abstract:

This study aimed to Standardizing a battery of skill tests for football defenders aged under 19 in the Annaba Regional First Division teams. The descriptive method was employed, and the study sample was purposively selected from the research population, consisting of 14 defensive players. A total of 30 skill tests were applied, and after conducting factor analysis, the researcher reached the following conclusions:

- The skill tests representing the extracted factors from the factor analysis for under-19 football defenders were identified as follows:
 1. The test Dribbling Test Towards a Small Goal from a Distance of 20 meters, representing the first factor (passing).
 2. The test Rolling 30 meters and scoring continuously five times, representing the second factor (Rolling with the Ball).
 3. The test Rolling between ten markers, representing the third factor (Rolling with the Ball).
 4. The test Ball control, representing the fourth factor (ball control).
 5. The test stopping the ball movement, representing the fifth factor (ball stopping).
 6. The test Rolling the ball between the markers from the goal line to the penalty area and back to the goal line, representing the sixth factor (ball dribbling).

Based on these findings, the study recommended using the identified battery of tests to evaluate defensive players under 19 years of age in football.

Keywords: Standardizing, Battery, Test, Skill, Football .

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1- INTRODUCTION:

The increasing global interest in recent years in tests and measurements as effective tools in evaluation processes is evident. Tests and measurements in the field of physical education are considered essential and effective means. These tools aim to solidify the principles of scientific and programmed planning, representing the core of modern scientific theories. They strive to achieve high athletic levels in any sport or physical activity. Making adjustments or updates to tests and standards is necessary in certain cases, intending to tailor them to the changes occurring in the communities of individuals who undergo these tests. This update aims to secure scientific measures characterized by accuracy and objectivity, allowing us to effectively infer during evaluation processes.

As for the coach, the importance of tests and measurements lies in evaluating his training program and ensuring its effectiveness, as well as determining the extent to which it achieves the set goals. These tools assist in uncovering the talents of some players, which are often difficult to discern through observation alone. During the division of players based on test results into homogeneous groups during daily training units, tests and measurements play a crucial role. They stimulate the motivation and preferences of players towards training, serving as important means for the coach to understand the physical and functional stability of the players, as well as the abilities and potentials of each player and their training status. Consequently, tests and measurements are the means through which both the coach and the player undergo a comprehensive evaluation (Hassanein, 1995: 410). The high level of an athlete is associated with technical, tactical, physical, and mental capabilities, with each playing position having its own characteristics based on the technical-tactical requirements, whether offensive or defensive, achieved by the technical training staff (Della, 2013).

As for the previous studies, the results of studies by Mohammed (2017), Al-Latif (2018), and Habeib (2017) concluded that most coaches rely on pedagogical observation through organized competition for this purpose. They do not subject players to a set of skill tests, casting doubt on the credibility of the evaluation process. This is one of the reasons that leads to the failure to achieve the desired results for the team. The use of a battery of tests with modern techniques for the skill evaluation process for each player and the requirements of their position enables the precise and scientific determination of skill capabilities, not presumptive, and allows for the selection of truly competent players, not by chance. Since each playing position in football has specific characteristics and specifications that must be met by the player occupying that position, according to the nature of the priorities of defensive and offensive duties in various positions on the field, and the emphasis on the principles of selection and initial guidance in choosing football players and determining playing positions to achieve the best levels has become necessary (Al-Sheikh, 2019: 440). Therefore, we can pose the following question: What type of battery of tests can be used according to scientific conditions to measure the skill capabilities of football defenders under the age of 19 ?

The general hypothesis: The assumption is that the testing battery, which can be used in accordance with scientific conditions, measures the skill capabilities of football defenders under the age of 19 in line with the requirements of the defensive position ?

2. Objectives and significance of the study:

- Identifying the factors of skill characteristics through skill tests among football defenders under 19 years old using factor analysis.

- Selecting skill tests to infer skill characteristic factors among football defenders under 19 years old, derived from factor analysis.
- Constructing a skill test battery for football defenders under 19 years old.

3. Research Terms and Definitions:

3.1. Standardizing: Anastasi (1997) defined it as establishing uniform conditions for test application to all individuals, including a standardized method for evaluating responses (Anastasi, 1997: 211).

3.2. Battery : The tool used for gathering information for evaluation purposes (Abdul Majeed, Mohammed, Al-Yasseri, 2005: 29).

3.3. Test: Annett (1974) defines it as a skill or a set of skills presented to the individual in a standardized form, producing a numerical grade or grades regarding something requested from the examinee to attempt (Mekedem Abdul Hafeez, 2003: 22).

3.4. Skill: It refers to all necessary purposeful movements performed within the framework of the football rules, whether these movements involve the ball or not (Jaber and Al-Adawi, 1996: 47).

3.5. Football: It is a game played between two teams, each consisting of eleven players who use an inflated ball on a rectangular field. At each end of the field, there is a goal with a goalkeeper. Each team tries to score points (goals) by getting the ball into the opponent's goal, aiming to surpass the competitor in scoring points (Mamur bin Hassan Al-Sulaiman, 1998: 9).

4. Methods and materials:

4.1. The Method and Tools:

- **The Adopted Methodology:** The descriptive survey method was utilized to achieve the study's objectives.
- **Survey Study:** The researcher conducted interviews with experts to discuss the division of tests into groups. An agreement was reached to divide them into two groups to be conducted over several days. The scientific sequence in application was considered, as well as the muscular work during each group's performance. Adequate rest periods were also taken into account to allow for recovery after each test.

The skill tests were conducted on five defenders from January 15, 2023, to January 25, 2023, and were re-administered two weeks later to the same group from February 11, 2023, to February 21, 2023. The purpose was to understand the nature of the tests, identify any challenges faced by the researcher and the assisting team, assess their competence in executing and recording skill tests, and evaluate the suitability of the tools used.

- **Sample and Selection Methods:** The study's sample was intentionally chosen and included 14 defenders under the age of 19 from Mouloudia Berrahal and Guelma Tasha football clubs.

4.2. Study Domains:

- **Human Domain:** Football players, defenders under the age of 19, for two teams from the first regional division in Annaba (Mouloudia Berrahal, Guelma Tasha).
- **Temporal Domain:** The study was conducted during the time period from February 26, 2023, to March 23, 2023.

- **Spatial Domain:** The study was carried out on the pitches designated for the respective teams.

4.3. Study Tools: In their research, the investigators relied on tools designed for collecting information and data, including:

- Sources in both Arabic and foreign languages.
- Pedagogical methods.
- Skill tests: A total of 30 skill tests were employed.

- **The Scientific Foundations for Skill Tests:**

Validity: Refers to the accuracy of the method or tool to measure what is intended to be measured (Al-Mashhadani, 2019: 167). The researchers ensured the validity of the tests in two ways:

- **Content Validity:** The validity of the content was obtained by presenting the tests to a group of experts in the field to ensure the adequacy and suitability of the items for the intended domain (Al-Mashhadani, 2019: 168). The skill tests were presented to a group of experts and specialists in sports training, who expressed their agreement and provided positive opinions on the validity of the skill tests used in the study.
- **Self-Validity:** Self-validity is measured by calculating the square root of the test reliability coefficient (Nasr Al-Din Radwan, 2006: 2).

Test Reliability: Reliability is the extent to which a measurement gives consistent results when the same thing is measured repeatedly under the same conditions, i.e., the absence of inconsistency within the test itself (Al-Dulaimi Saleh, 2014: 119). Spearman's correlation coefficient was used to calculate the reliability in measuring the study variables through the test application and re-application. This was done with a two-week interval between the first and second applications of the test using the same conditions. Table N°1 illustrates the reliability coefficients for the tests used.

Table N°1: Shows the Reliability and Validity Coefficients for the Skill Tests among Defenders Under 19 Years Old

Tests	Reliability Coefficient	Self-Validity
Passing the ball towards a goal drawn on the ground	*0.79	0.81
Medium-range pass	*0.81	0.92
Receiving the ball from a marker with a rebound	*0.82	0.95
Striking the ball towards a goal drawn on the wall	*0.78	0.79
Kicking the ball for the longest distance	*0.89	0.90
Dribbling towards a small goal 20 meters away	*0.87	0.89
Dribbling towards a small goal from a distance of 10 meters	*0.81	0.84
Zigzag running with the ball around five markers	*0.79	0.94
Rolling between ten markers	*0.79	0.84
Rolling for 30 meters and scoring continuously five times	*0.77	0.80
Zigzag running in the shape of an (8) with the ball	*0.90	0.95
Rolling the ball between markers from the goal line to the penalty line and back to the goal line	*0.86	1.00
Running 30 m with the ball	*0.84	0.89
Fast running with the ball	*0.77	0.91
Striking the ball towards a goal drawn on a wall	*0.79	0.99
Scoring goals	*0.85	0.90
Accuracy in shooting at the goal	*0.80	0.85
Shooting at the goal from the penalty area	*0.87	0.96
Scoring while in motion	*0.77	0.78
Kicking the ball towards a goal	*0.78	0.82
Receiving and handling the ball	*0.81	0.91
Stopping the ball's movement	*0.90	0.94
Stopping the ball's movement with a turn	*0.91	0.98
Controlling the ball in a specific distance	*0.79	0.84
Stopping the ball with the chest	*0.89	0.97
Controlling the ball in the air	*0.95	0.98
Controlling the ball within a circle with timing.	*0.89	0.91

* Statistically significant at a 0.05 error rate and with 12 degrees of freedom, the tabulated critical value (R) is 0.63

From Table N°1, it is evident that the correlation coefficients for football skills tests ranged between 0.77 and 0.96. As for self-validity, the values ranged between 0.78 and 1.00, all of which are greater than the tabulated value for Pearson's correlation coefficient (R), estimated

at 0.63, at a significance level of 0.05 with 12 degrees of freedom. This indicates high reliability and self-validity for the tests.

4.4. Statistical tools :

The mean, standard deviation, skewness coefficient, Pearson correlation coefficient, factor analysis using the principal components method (Composantes principales), and for factor extraction, orthogonal rotation was employed, specifically using the Varimax method.

5. Results:

5.1. Descriptive statistics for the skill test results of defenders under 19 years old:

Table N°2: Represents the descriptive statistics of the skill test results for defenders under 19 years old

Coding	The variable	The arithmetic mean	Standard Deviation	Skewness coefficient
A1	Passing the ball towards a goal drawn on the ground	28,000	5,378	0,166
A2	Medium-range pass	20,857	3,439	0,591
A3	Receiving the ball from a marker with a rebound	7,071	3,293	0,213
A4	Striking the ball towards a goal drawn on the wall	20,643	4,308	-0,058
A5	Kicking the ball for the longest distance	37,600	3,855	0,796
A6	Dribbling towards a small goal 20 meters away	2,643	1,216	0,211
A7	Dribbling towards a small goal from a distance of 10 meters	3,286	0,994	-0,123
B1	Zigzag running with the ball around five markers	24,104	0,980	0,468
B2	Rolling between ten markers	22,690	0,716	-1,050
B3	Rolling for 30 meters and scoring continuously five times	61,225	2,555	-0,266
B4	Zigzag running in the shape of an (8) with the ball	8,234	0,532	-0,765
B5	Rolling the ball between markers from the goal line to the penalty line and back to the goal line	12,789	0,490	-0,443
B6	Running 30 m with the ball	7,097	0,515	-0,659
B7	Fast running with the ball	13,511	0,537	0,150
C1	Striking the ball towards a goal drawn on a wall	41,786	8,675	0,474
C2	Scoring goals	12,714	2,335	0,656
C3	Accuracy in shooting at the goal	2,786	1,122	-0,276
C4	Shooting at the goal from the penalty area	6,643	0,745	0,731
C5	Scoring while in motion	4,786	0,802	0,437
C6	Kicking the ball towards a goal	13,143	1,460	0,233
D1	Receiving and handling the ball	3,643	0,633	0,433
D2	Stopping the ball's movement	5,714	1,326	0,151
D3	Stopping the ball's movement with a turn	3,857	1,231	0,024
D4	Controlling the ball in a specific	39,286	14,917	-0,022

Source: Compiled by Researchers (2023)

From Table N°2, we observe that the skewness coefficients range between $1\pm$, indicating that the results of the skill tests for defenders under 19 years are normally distributed.

5.2. Correlation matrix for the skill test results of defenders under 19 years:

Table N°3: Shows the correlation matrix for the skill test results of defenders under 19 years

C1	B7	B6	B5	B4	B3	B2	B1	A7	A6	A5	A4	A3	A2	A1	V
															A
															1
														-	A
														0,0	2
														67	
													0,1	0,4	A
													98	34	3
												0,3	-	0,0	A
												71	0,1	86	4
													54		
											-	-	0,1	0,1	A
											0,4	0,1	38	75	5
											83	06			
										0,1	0,2	0,4	0,0	0,2	A
										00	09	68	79	82	6
										-	-	-	0,2	-	A
										0,4	0,0	0,0	0,1	0,3	7
										18	35	28	71	74	
								-	0,1	-	0,5	0,3	0,0	0,1	B
								0,3	65	0,4	61	68	99	45	1
								70	62						
							-	-	-	-	-	0,1	0,0	0,1	B
							0,0	0,1	0,1	0,1	0,4	70	33	04	2
							95	24	85	85	97				
						-	0,1	0,4	-	0,1	0,0	-	0,2	0,0	B
						0,3	00	27	0,1	30	01	0,3	24	81	3
						65			51		01				
					-	0,2	-	-	0,0	0,5	-	-	0,0	-	B
					0,2	52	0,2	0,2	83	19	0,6	0,0	25	0,0	4
					85		52	62			80	04		59	
				-	0,0	0,0	0,2	-	-	-	0,4	0,1	-	0,2	B
				0,3	46	31	95	0,3	0,1	0,1	09	47	0,2	49	5
				47				14	43	41			07		
			0,0	0,3	-	0,2	-	-	-	0,0	-	-	0,2	-	B
			98	21	0,2	01	0,0	0,2	0,2	13	0,1	0,2	99	0,1	6
				84		84	19	48	44		97	87		76	
		-	0,1	-	-	0,0	0,3	-	0,6	-	0,2	0,2	0,2	0,1	B
		0,0	81	0,1	0,0	28	87	0,3	41	0,0	65	91	81	43	7
		05		64	33			29		89					
	-	-	0,2	-	0,0	-	-	0,0	-	-	0,1	0,1	0,0	0,2	C
	0,5	0,1	61	0,3	60	0,0	0,1	97	0,3	0,1	21	41	17	41	1
	81	00		75		11	46		21	17					
-	0,1	0,2	-	0,2	-	-	0,0	0,2	0,2	0,0	0,2	0,0	0,2	-	C
0,4	84	01	0,2	21	0,0	0,5	06	37	87	79	49	23	24	0,5	2
51			30		27	01								64	
0,0	0,2	0,0	0,0	-	0,6	-	0,2	0,1	0,1	0,0	0,2	-	0,5	-	C
58	67	71	94	0,2	86	0,4	40	97	65	90	54	0,0	50	0,1	3
				95		70						58		28	
-	0,0	0,2	0,2	-	0,5	-	-	0,3	0,0	0,0	0,2	-	0,3	-	C
0,0	78	26	31	0,1	05	0,5	0,0	56	18	55	45	0,2	09	0,3	4
13				42		36	79					08		07	
-	0,2	0,0	0,0	0,2	-	-	0,1	-	0,3	0,1	0,1	0,3	0,1	-	C
0,3	93	58	21	76	0,4	0,2	68	0,2	10	89	99	56	55	0,1	5
39					89	80		07						07	

*At a significance level of 0.05 and degrees of freedom 12, the critical value for Pearson's correlation is 0.5324.

5.3. The results of the factor analysis for the skill variables before rotation for defenders under 19 years old:

Table N°4 represents the results of the factor analysis for the skill variables before rotation for defenders under 19 years old

Factors	Eigenvalue	Variance ratio	Accumulated variance
01	5,221	17,404	17,404
02	4,267	14,223	31,627
03	4,088	13,627	45,254
04	3,667	12,223	57,477
05	2,608	8,693	66,169
06	2,185	7,283	73,452
07	2,033	6,776	80,229
08	1,573	5,243	85,471
09	1,431	4,769	90,240
10	0,957	3,192	93,432
11	0,808	2,693	96,125
12	0,736	2,454	98,579
13	0,426	1,421	100,000
14	1,016E-15	3,388E-15	100,000
15	7,603E-16	2,534E-15	100,000
16	5,405E-16	1,802E-15	100,000
17	5,344E-16	1,781E-15	100,000
18	4,063E-16	1,354E-15	100,000
19	3,125E-16	1,042E-15	100,000
20	2,482E-16	8,273E-16	100,000
21	1,720E-16	5,733E-16	100,000
22	-6,358E-18	-2,119E-17	100,000
23	-5,886E-17	-1,962E-16	100,000
24	-1,052E-16	-3,505E-16	100,000
25	-1,971E-16	-6,569E-16	100,000
26	-2,256E-16	-7,519E-16	100,000
27	-3,843E-16	-1,281E-15	100,000
28	-5,809E-16	-1,936E-15	100,000
29	-7,206E-16	-2,402E-15	100,000
30	-7,984E-16	-2,661E-15	100,000

Source: Compiled by Researchers (2023)

5.4. Factor matrix for skill tests for defenders under 19 years old after orthogonal rotation:

During this stage of using orthogonal rotation using the varimax method, 9 factors were identified. According to the acceptance conditions of the factors and the construction criteria, which include accepting factors saturated with 3 or more variables, in addition to the saturation value equaling or exceeding 0.50, 6 factors were accepted. The following table illustrates this:

Table N°5: Factor matrix for skill tests for defenders under 19 years old after orthogonal rotation

v	Factor								
	1	2	3	4	5	6	7	8	9
A1	0,813	0,080	0,017	-	-	0,188	0,140	-	0,113
A2	0,792	-	0,240	0,010	0,259	-0,170	0,015	0,112	-
A3	0,621	0,095	-	0,031	-	0,167	-0,303	0,247	0,007
A4	-	0,076	0,062	0,146	0,298	-	-	0,207	0,073
A5	0,566	0,401	0,181	0,425	-	-0,191	-0,058	-	0,294
A6	0,558	-	-	0,513	0,208	-0,203	-0,168	0,334	-
A7	-	0,304	0,105	-	0,010	-0,228	0,392	0,123	0,247
B1	0,469	0,072	-	0,278	0,264	-0,374	-	-	-
B2	-	0,903	0,115	-	-	0,228	0,392	0,123	0,247
B3	0,058	0,742	0,408	0,146	0,030	-0,245	0,153	0,079	0,138
B4	0,207	0,742	0,408	-	0,045	0,208	-0,153	0,168	0,277
B5	0,311	-	0,429	0,082	0,007	0,042	0,164	-	0,405
B6	-	0,662	-	-	-	-0,053	-0,341	0,012	-
B7	0,037	0,566	0,096	0,385	0,464	-	-	0,168	0,368
B8	0,033	0,513	0,109	0,475	0,245	0,035	-0,214	-	0,374
B9	-	-	-	0,142	-	0,225	0,041	0,142	0,017
B10	0,075	0,180	0,878	-	0,047	-	-	-	-
B11	0,067	-	0,797	0,108	-	0,369	0,093	-	0,177
B12	-	0,036	0,639	0,043	0,117	0,251	0,231	0,333	0,235
B13	0,126	0,481	-	-	-	-	-	0,193	-
B14	0,015	-	-	0,903	0,146	-0,122	0,204	0,047	-
B15	-	0,050	0,030	-	-	0,014	0,178	0,037	0,090
B16	0,206	0,166	0,036	0,830	0,298	-	-	-	0,231
B17	-	-	-	-	0,866	0,195	-0,064	0,022	-
B18	0,228	0,044	0,344	0,065	-	-0,090	0,418	-	0,077
B19	-	0,062	0,217	0,056	0,822	-0,090	0,418	-	0,093
B20	0,032	-	-	-	-	-0,058	-0,402	0,343	-
B21	0,380	0,019	0,447	0,294	0,465	-	-	-	0,193
B22	-	-	-	-	0,124	0,897	0,134	0,169	0,050
B23	0,139	0,095	0,063	0,029	-	-0,886	-0,119	0,260	0,029
B24	-	0,008	-	0,176	0,045	-	-	-	-
B25	0,215	-	0,108	-	-	0,523	-0,269	-	-
B26	0,439	0,009	0,144	0,484	0,275	-	-	0,157	0,062
B27	0,031	0,033	0,139	0,141	0,092	0,198	0,940	0,023	-
B28	0,079	0,111	0,162	-	-	0,131	-0,703	-	0,007
B29	-	-	-	0,409	0,265	-	-	0,258	0,251
B30	0,057	0,363	0,068	0,151	0,489	0,249	0,526	-	0,091
B31	0,134	0,030	-	0,079	-	0,089	0,139	0,818	-
B32	-	-	0,050	-	0,321	-	-	-	0,095
B33	-	0,101	0,381	-	0,329	-0,127	0,032	0,768	-

Source: Compiled by Researchers (2023)

6. Discussion:

6.1. The interpretation of the extracted factors:

* Factor 1 :

Table N°6: Shows the variables saturated on the first factor

The Symbol	Variable	Saturation Value
B7	Sprinting with the ball	0.813
A6	Dribbling towards a small goal from a distance of 20 meters	0.792
B1	Curved running with the ball around five markers	0.621
A7	Dribbling towards a small goal from a distance of 10 meters	-0.566
A3	Rebounding dribble from a cone	0.558

Source: Compiled by Researchers (2023)

It shows that the variables saturated on the first factor are (03) variables representing (16.67%) of the total variables, which are (30) variables. Through the arrangement of saturations, it is evident that the variables saturated on the first factor are (03) tests related to the passing skill and (02) tests related to dribbling with the ball. To overcome the tests related to passing skill, the researcher suggests that this factor could be named the "Passing Factor." Given that the dribbling towards a small goal from a distance of 20 meters achieves the highest saturation, it has been selected to represent the Passing Factor in the battery of tests for football defenders under the age of 19.

* Factor 2:

Table N°7: Shows the variables saturated on the second factor

The Symbol	Variable	Saturation Value
B3	Rolling 30m and continuous scoring five times	0.903
C3	Accuracy in shooting at the goal	0.742
C5	Scoring while in motion	0.662-
E4	Controlling, feeling, and handling the ball within 30 seconds	0.566
C6	Kicking the ball towards the goal	0.513

Source: Compiled by Researchers (2023)

It indicates that the factors saturated on the second factor are (03) variables representing (16.67%) of the total variables, which amount to (30) variables. Through the arrangement of saturations, it becomes apparent that the variables saturated on the second factor are (03) tests related to scoring skill, (01) test related to dribbling with the ball, and (01) test related to ball control.

Given that the test of Rolling 30 meters and scoring continuously five times achieves the highest saturation, the researcher suggests that this factor could be named the " Rolling with the Ball Factor" and nominated to represent the Dribbling with the Ball factor in the battery of tests for football defenders under the age of 19.

*** Factor 3:**

Table N°8: Shows the variables that loaded on the third factor

The Symbol	Variable	Saturation Value
B2	Rolling between ten markers	0.878
C2	Scoring goals	0.797
C4	Shooting on goal from the penalty area	0.639

Source: Compiled by Researchers (2023)

It shows that the factors saturated on the third factor are (03) variables representing (10.00%) of the total variables, which amount to (30) variables. Through the arrangement of saturations, it becomes apparent that the variables saturated on the third factor are (02) tests related to shooting skill and (01) test related to dribbling with the ball.

Since the test of Rolling between ten markers achieves the highest saturation, the researcher suggests that this factor could be named the " Rolling with the Ball Factor" and nominated to represent the Rolling with the Ball factor in the battery of tests for football defenders under the age of 19.

*** Factor 4:**

Table N°9: Shows the variables that loaded on the fourth factor

The Symbol	Variable	Saturation Value
B6	Running 30 meters with the ball	0.897
E5	Ball control	-0.886
E3	Controlling the ball, bouncing it for a distance of 20 meters	0.523

Source: Compiled by Researchers (2023)

It indicates that the factors saturated on the fourth factor are (03) variables representing (10.00%) of the total variables, which amount to (30) variables. Through the arrangement of saturations, it becomes apparent that the variables saturated on the fourth factor are (02) tests related to ball control skill and (01) test related to dribbling with the ball.

Since the test of ball control achieves the highest saturation among the variables that saturated more on the fourth factor, the researcher suggests that this factor could be named the "Ball Control Factor" and nominated to represent the Ball Control factor in the battery of tests for football defenders under the age of 19.

*** Factor 5:**

Table N°10: Shows the variables saturated on the fifth factor

The Symbol	Variable	Saturation Value
D2	Stopping the ball movement	0.940
E2	Controlling the ball inside a circle with time calculation	-0.703
B4	Serpentine running in the shape of (8) with the ball	0.526

Source: Compiled by Researchers (2023)

It shows that the factors saturated on the fifth factor are (03) variables representing (10.00%) of the total variables, which amount to (30) variables. Through the arrangement of saturations, it becomes apparent that the variables saturated on the fifth factor are (01) test related to the skill of stopping the ball, (01) test related to ball control skill, and (01) test related to dribbling with the ball.

Since the test of stopping the ball movement achieves the highest saturation among the variables that saturated more on the fifth factor, the researcher suggests that this factor could be named the "Stopping Factor" and nominated to represent the Stopping factor in the battery of tests for football defenders under the age of 19.

*** Factor 6:**

Table N°11: Shows the variables saturated on the sixth factor

The Symbol	Variable	Saturation Value
B5	Rolling the ball between the markers from the goal line to the penalty area and back to the goal line	0.818
D1	Receiving and handling	0.768
C1	Hitting the ball towards a goal drawn on the wall	0.613

Source: Compiled by Researchers (2023)

It shows that the factors saturated on the sixth factor are (03) variables representing (10.00%) of the total variables, which amount to (30) variables. Through the arrangement of saturations, it becomes apparent that the variables saturated on the sixth factor are (01) test related to dribbling with the ball, (01) test related to the skill of stopping the ball, and (01) test related to shooting.

Since the test of rolling the ball between the markers from the goal line to the penalty area line and returning to the goal line achieves the highest saturation, the researcher suggests that this factor could be named the "Ball Dribbling Factor" and nominated to represent the Ball Dribbling factor in the battery of tests for football defenders under the age of 19.

6.2. Selection of Battery Units for Skill Tests among Football Forwards Under 19 Years Old:

Table N°12: Skill Assessment Test Battery Units for Football Defenders Under 19 Years Old.

	Test	Measure ment Unit	Factor	Factor Name
1	Dribbling Test Towards a Small Goal from a Distance of 20 meters	degree	first	Passing Factor
2	Rolling 30 meters and scoring continuously five times	Seconds	second	Rolling with the Ball Factor
3	Rolling between ten markers	Seconds	third	Rolling with the Ball Factor
4	Ball control	Seconds	fourth	Ball Control Factor
5	Stopping the ball movement	repetition	fifth	Stopping Factor
6	Rolling the ball between the markers from the goal line to the penalty area and back to the goal line	Seconds	sixth	Ball Dribbling Factor

7. Conclusion:

Based on the results of factor analysis using the orthogonal rotation method (Varimax) for the skill tests applied to defenders in the under-19 category, the following conclusions were reached:

- ✓ Six factors were identified as fundamental skills based on the skill tests for football defenders under 19 years old in the Annaba region. These factors include:

1. Factor One: Passing skill.

2. Factor Two: Rolling skill with the ball.
 3. Factor Three: Rolling skill with the ball.
 4. Factor Four: Ball control skill.
 5. Factor Five: Stopping skill.
 6. Factor Six: Ball Dribbling.
- ✓ The skill tests were selected to infer the factors of skill traits among football defenders under 19 years old, extracted from factor analysis
- Test of Dribbling towards a small target from a distance of 20 meters, representing the first factor, Passing skill.
 2. Test of rolling for 30 meters and scoring continuously five times, representing the second factor, Rolling skill with the Ball.
 3. Test of rolling between ten markers, representing the third factor, Rolling skill with the ball..
 4. Ball control test represents the fourth factor, assessing the skill of ball control.
 5. Test of stopping the ball movement, representing the fifth factor, Stopping skill.
 6. .The ball rolling test between the markers from the goal line to the penalty area line and back to the goal line represents the sixth factor, Ball Dribbling.
- ✓ Battery units of skill tests were constructed for the assessment of football defenders.

Recommendations:

1. The study results demonstrate that the proposed battery of tests effectively reflects the required skills and integrates them with playing strategies.
2. It is recommended to implement the battery in team training environments to enhance player assessment and development.
3. Utilize modern training methods tailored to each position and its specific requirements.
4. Emphasize teaching fundamental skills at an early stage to ensure their refinement.
5. Propose the development of a specialized skill test battery for playing positions at the national level.

Bibliography and Notes List :

- Anastasi & Susana Urbina, (1997) : *Psychological Testing*, New jersey, Prentice hall.
- Dellal, A , (2013) : *une saison de la preparation en football*, de boek (bruxelles).

باللغة العربية:

- الدليمي عصام حسن وصالح على عبد الرحيم. (2014). *البحث العلمي أسسه ومناهجه*، ط1، دار الرضوان، عمان.
- المشهداني سعد سلمان، (2019). *منهجية البحث العلمي*، ط1، دار أسامة، عمان.
- بن نعمة بن عودة، بن قوة علي، زرف محمد، (2017). واقع اختيار اللاعبين في كرة القدم الجزائرية تحت 20 سنة بين المنهج العلمي والتقليدي، *المجلة العلمية لعلوم والتكنولوجيا النشاطات البدنية والرياضية*، 14(1)، 30-47.
- جابر أشرف و العدوى صبري، (1996). *كرة القدم*، مطبعة كلية التربية الرياضية للبنين، حلوان، مصر.
- حسانين محمد ، (1995)، *القياس والتقويم في التربية البدنية*، ط3 ، دار الفكر العربي، القاهرة.
- شاشو سداوي، حجار محمد خرفان، هوار عبد اللطيف، (2018). مكانة الاختبارات و القياسات العلمية عند عملية اختيار اللاعبين في كرة القدم الجزائرية تحت 18 سنة، *المجلة العلمية لعلوم والتكنولوجيا النشاطات البدنية والرياضية*، 15(4)، 81-97.
- عبد المجيد مروان ، محمد جاسم اليساري، 2005. *القياس والتقويم في التربية البدنية والرياضية*، مؤسسة الوراق، عمان.
- عقوب حبيب، 2017، *المؤشرات الفيسيولوجية و المورفولوجية عند لاعبي كرة القدم الجزائرية حسب مستوى ومراكز لعبهم*، جامعة عبد الحميد بن باديس، مستغانم.
- فؤاد أبو حطب وآخرون (1999)، *التقويم النفسي* ، مكتبة الأنجلو المصرية، طبعة، 03 القاهرة.
- فتحي دربال، بعقوب الشيخ، (2019). دراسة عاملية للمتطلبات المورفولوجية والوظيفية للاعبين كرة القدم حسب مراكز اللعب، *مجلة الإبداع الرياضي*، المجلد 10، العدد 3، 440.
- مأمور بن حسن السلطان، (1998)، *كرة القدم بين المصالح و المفاصل الشرعية*، دار بن حزم، بدون طبعة، بيروت، لبنان.
- محمد نصر الدين رضوان، 2006، *المدخل إلى القياس في التربية البدنية والرياضية*، مركز الكتاب للنشر، ط1، مصر.
- مقدم عبد الحفيظ (2003)، *الإحصاء والقياس النفسي والتربوي*، ديوان المطبوعات الجامعية، طبعة، 02 الجزائر.