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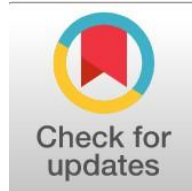
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Psychological And Skill Selection Criteria For Youth Tennis Players

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Abstract

General Background Scientific advancements in athletic disciplines require relying on systematic evaluations rather than chance to achieve high-level sporting accomplishments. **Specific Background** The individual sport investigated demands unique physical capabilities alongside specific mental characteristics, making exact determinants crucial when identifying active individuals capable of superior performance. **Knowledge Gap** There is a complete absence of scientifically studied standards concerning the recruitment of seventeen to eighteen-year-old athletes in central alongside southern regional clubs, resulting in significant wasted financial resources, time, alongside human energy. **Aims** This study seeks to identify the crucial technical alongside mental determinants regarding recruitment while establishing definitive measurement levels applicable to this specific demographic. **Results** Through a descriptive survey investigating forty regional athletes, the analysis verified five essential technical actions, including the serve alongside forehand groundstroke, alongside six mental attributes, such as psychological immunity alongside mental resilience. Factor analysis grouped these variables into an accuracy of performance component alongside a mental preparation component, yielding standardized scores distributed across five distinct proficiency grades ranging from excellent to weak. **Novelty** The research establishes a previously nonexistent, standardized technical alongside mental index specifically tailored toward the unexamined older adolescent category operating within these regional organizations. **Implications** Adopting these specific standard scores provides coaches with a sound scientific method to acquire talented athletes, thereby streamlining the recruitment process alongside optimizing resource allocation in regional sports organizations.

Highlights:

- ♦ Mental resilience combined with physical execution accuracy directly determines athletic recruitment success within the seventeen to eighteen demographic.
- ♦ Factor analysis categorized fundamental court abilities alongside mental readiness into five standard evaluation grades ranging from excellent to weak.
- ♦ Implementing scientifically standardized assessments prevents financial resource waste alongside coaching effort depletion during the athlete evaluation process.

Keywords: Psychological Determinants, Skill Assessment, Youth Athletes, Mental Readiness, Racket Sports

Introduction:

The world has recently witnessed significant scientific advancements in all aspects of life, including sports. This has led to remarkable development across all sports and at all levels, resulting in numerous sporting achievements. Tennis, an individual sport, has benefited from this development in recent years and is now practiced by various age groups and skill levels. It is well known that every sport, whether team or individual, has its own characteristics and requirements that distinguish it from other sports. Undoubtedly, reaching a high level of athletic performance and achieving top sporting accomplishments does not happen by chance, but rather through several scientifically based steps, such as selecting players according to their psychological and technical capabilities. This is due to the importance of skillful performance in achieving success.¹ Therefore, many academics and specialized coaches in this sport are currently striving to adopt the best methods for selecting appropriate measurement and evaluation tools to determine players' psychological and technical abilities, and subsequently, to identify and select suitable players. Psychological and skill-based tests are of great importance in identifying players' potential for selection in high-level sporting events, including tennis.² This process helps in identifying the most effective and active players capable of achieving high levels of performance. Furthermore, the selection process plays a crucial role in saving time, effort, and money. While many researchers have addressed the topic of player selection, the significance of this study lies in its focus on a previously unexplored group: tennis players in clubs in the central and southern regions. This will enable those involved in player selection to improve and develop their work by acquiring talented players using sound scientific methods.

Study Purposes:

1. To identify the most important psychological and skill-based determinants for selecting tennis players for clubs in the central and southern regions.
2. To establish criteria and define the skill levels of tennis players in clubs in the central and southern regions.

Methodology and Procedures, including:

1. Research Population:

The researcher defined his research population as the tennis players of clubs in the central and southern regions. Their number is (40) players, representing 100%. The table below shows this:

Table 1. Shows the research population and the number of players

S	Governorate	Number of players	S	Governorate	Number of players
1	Diwaniyah	3	6	Dhi Qar	2
2	Najaf	3	7	Amarah	4
3	Karbala	5	8	Basra	3
4	Babylon	5	9	Wasit	3
5	Muthanna	3	10	Baghdad	9
Total number of players					40

2. Study Design:

The researcher used the descriptive survey method as it was suitable for the nature of the problem.

3. Studied Variables:

(Serve, forehand groundstroke, backhand groundstroke, volleyball, smash, psychological resilience, mental health, psychological immunity, normal perfectionism, psychological willpower, psychological fluency).

4. Methods, Tools, and Equipment Used:

(References and sources, testing and measurement, tennis court, tennis rackets and balls, adhesive tape, support staff)

5. Tests Used:

(White for serve, White for forehand and backhand groundstrokes, smash accuracy, Chavez and Tadder for volleyball).

6. Field Research Procedures:

• Identifying Study Variables:

A. Identifying the Most Important Skill Determinants:

To identify the most important psychological and skill determinants of tennis, the researcher consulted scientific sources and references and included all psychological variables and tennis skills in a questionnaire. This questionnaire was then presented to experts and specialists in the field of testing, measurement, and tennis to gather their opinions on player

selection. After collecting the questionnaires and processing the data, the relative importance of the variables (skills and tests) was determined. A psychological variable or skill was accepted if it received an acceptance rate of 56.25 or higher. The results showed that (6) psychological variables out of (11) and (5) tennis skills out of (8) were accepted, according to the following formula:

Acceptable ratio = $0.5 \text{ (Highest value in the range of scores + highest value in the range) / The upper value of the score range} \times 100$

Acceptable ratio = $0.5(40+5)/40 \times 100 = 55.25\%$

7. Pilot Experiment: The researcher conducted two pilot experiments.

1. First Pilot Experiment: The researcher conducted the first pilot experiment on April 3, 2025, at 5:00 PM with four players from the Architecture Club. The objectives were: a) To verify the efficiency of the research team. b) To verify the suitability of the scales and tests for the population. c) To determine the most appropriate time. d) To identify any difficulties the researcher might encounter.

2. Second Pilot Experiment: The second pilot experiment was conducted on April 10, 2025, at 5:00 PM. Its objective was to establish the scientific basis for the tests.

8. Scientific Foundations of the Tests:

- **Validity:** The researcher employed face validity by including the test components in a questionnaire. This questionnaire was then reviewed by experts in the fields of testing, measurement, and tennis, resulting in a 93% agreement rate for the test's validity.

- **Reliability:** The test was administered to a pilot sample of (4) players representing the Al-Amara Tennis Club. After seven days, the test was repeated with the same players under the same conditions. The simple correlation coefficient (Pearson's) was calculated, as shown in Table (3-2).

- **Objectivity:** The researcher ensured the objectivity of the tests by employing two referees. The test was administered to the (4) players of the pilot sample from the Al-Amara Tennis Club. The simple correlation coefficient (Pearson's) was calculated between the referees' scores, and the t-value for the correlation coefficients was determined, as shown in Table (2).

Table 2. shows the reliability coefficient, objectivity coefficient, and calculated t-value for the tests

S	Tests	Stability coefficient	(t) Calculated	Statistical significance	Objectivity factor	(t) Calculated	Statistical significance
1	Serve	0.88	5.112	Sig.	0.87	4.976	Sig.
2	Forehand Groundstroke	0.86	4.783	Sig.	0.92	6.070	Sig.
3	Backhand Groundstroke	0.86	4.783	Sig.	0.84	4.574	Sig.
4	Flying Shot	0.84	4.574	Sig.	0.94	6.093	Sig.
5	Smashing Shot	0.87	4.976	Sig.	0.95	6.183	Sig.

The tabulated t-value was 4.303 at a significance level of 0.05 and 2 degrees of freedom.

9. Level of Ease and Difficulty:

The researcher calculated the skewness coefficient to determine the ease and difficulty level of the tests. The value did not exceed (+1 and -1), confirming that the tests were of an appropriate difficulty level for the research population.

10. Discriminatory Ability:

The researcher arranged the raw scores obtained from the tests during the main experiment on the research population, which consisted of (40) players. The participants were divided into two groups, upper and lower, each consisting of (20) players, to obtain the discrimination coefficients. An independent samples t-test was used between the upper and lower groups. The table below illustrates this:

Table 3. Shows the discriminatory ability of the skill tests

S	Tests	Upper Group		Lower group		(t) Calculated	Statistical significance
		Mean	Std	Mean	Std		
1	Serve	30.4	1.662	22.8	0.961	10.104	Sig.
2	Forehand Groundstroke	32.4	2.747	23.8	1.91	9.214	Sig.
3	Backhand Groundstroke	29.656	3.575	19.15	2.633	10.77	Sig.
4	Flying Shot	28.633	2.271	20.366	2.271	11.519	Sig.
5	Smashing Shot	13.53	0.719	7.866	1.234	2.942	Sig.

The critical t-value was 2.042 at a significance level of 0.05 and 38 degrees of freedom.

11. Main Experiment:

The researcher conducted the main experiment after determining the tests used in his research and assessing their suitability and validity for members of the community by applying scientific principles (validity, reliability, and objectivity). The experiment was conducted on (40) players, starting on 17/4/2025 and ending on 30/4/2020, lasting (14) days. The table below shows this:

Table 4. Shows the tennis clubs, the number of their players, the date of the skills tests, and the application of psychological scales

S	Club name	Number of players	History of the application of tests and measures	S	Club name	Number of players	History of the application of tests and measures
1	Diwaniyah	3	2025/4/17	6	Dhi Qar	2	2025/4/24
2	Najaf	3	2025/4/18	7	Amarah	4	2025/4/26
3	Karbala	5	2025/4/20	8	Basra	3	2025/4/27
4	Babylon	5	2025/4/21	9	Wasit	3	2025/4/29
5	Muthanna	3	2025/4/23	10	Baghdad	9	2025/4/30

12. Statistical Methods:

The researcher used the SPSS statistical package.

Results

Statistical Analysis of Skill and Psychological Determinants:

1. Preparing Primary Data for Skill and Psychological Determinants: The means and standard deviations were calculated during the data preparation process, as shown in Table (5):

Table 5. Shows the means and standard deviations for the skill and psychological determinants

S	Skill determinants	Units	Mean	Std
1	Serve	Degree	26.125	3.638
2	Forehand Groundstroke	Degree	27.075	4.942
3	Backhand Groundstroke	Degree	25.275	3.993
4	Flying Shot	Degree	27	3.273
5	Smashing Shot	Degree	9.45	1.6
6	Mental Resilience	Degree	80.825	5.261
7	Mental Health	Degree	40.525	2.855
8	Psychological Immunity	Degree	84.05	5.528
9	Healthy Perfectionism	Degree	81.875	5.966
10	Psychological Willpower	Degree	91.85	11.452
11	Psychological Fluency	Degree	58.125	2.387

2. Finding the Inter-Skill and Psychological Correlation Matrix: The simple correlation coefficient (Pearson's) was calculated, and the matrix of inter-skill correlations for the (5) skill tests and (6) psychological variables was obtained, as shown in the table. The matrix included (55) correlation coefficients, of which (42) were positive, representing (76.36%), while (13) were negative, representing (23.63%). The highest value for the positive coefficient was (0.839) between the serve test and the backhand groundstroke test, while the highest value for the negative coefficient was (-0.548) between the forehand groundstroke test and the volleyball test, as shown in Table (6).

Table 6. Shows the inter-skill and psychological correlation matrix

S	Determinants	Serve	Forehand Groundstroke	Backhand Groundstroke	Flying Shot	Smashing Shot	Mental Resilience	Mental Health	Psychological Immunity	Healthy Perfectionism	Psychological Willpower	Psychological Fluency
1	Serve	1	0,722	0,839	0,839	0,318-	0,274	-0.18	0,357	0,278	0,036-	0,078
2	Forehand Groundstroke	0.7	1	0.529	0.548	0.018	0.313	-0.197	0.504	0.372	0.024	0.212
3	Backhand Groundstroke	0.82	0.529	1	0.722	-0.3	0.159	-0.116	0.234	0.182	0.032	0.115
4	Flying Shot	0.82	0.548	0.722	1	-0.38	0.287	-0.06	0.320	0.130	-0.257	0.184
5	Smashing Shot	-0.32	0.018	-0.297	-0.38	1	0.144	0.037	0.102	0.097	0.300	-0.062

6	Mental Resilience	0.274	0.313	0.159	0.287	0.144	1	0.093	0.498	0.300	0.186	-0.096
7	Mental Health	-0.18	0.197-	0.166-	0.063-	0.037	0.093	1	0.068	0.090	0.081	0.062
8	Psychological Immunity	0.357	0.504	0.234	0.320	0.102	0.498	0.068	1	0.748	0.189	0.069
9	Healthy Perfectionism	0.278	0.372	0.182	0.130	0.097	0.300	0.090	0.748	1	0.213	-0.035
10	Psychological Willpower	-0.04	0.024	0.032	-0.257	0.300	0.186	0.081	0.189	0.213	1	-0.082
11	Psychological Fluency	0.078	0.212	0.115	0.184	-0.062	0.096-	0.062	0.069	-0.035	-0.082	1

3. Identifying Factors Before Rotation for Candidate Skill and Psychological Determinants:

The use of principal component factor analysis revealed that the skill tests and psychological variables were saturated in (4) factors at varying proportions. These factors included (5) skill tests and (6) psychological variables, which explained (72,662) of the variance. 6The first factor explained (34,370), the second factor explained (19,045), the third factor explained (10,031), and the fourth factor explained (9,217). Table (7) illustrates this:

Table 7. Shows the matrix of factors for the determinants of skill tests before rotation (initial form of the matrix)

Skills tests	Factors				Socialisms	Explained variance
	1	2	3	4		
Serve	0.917	-0,240	-0,130	-0,050	0,918	0,082
Flying shot	0.832	-0.366	0.104	-0.116	0.770	0. 23
Forehand groundstroke	0.807	0.078	-0.112	0.316	0.728	0. 272
Backhand groundstroke	0.796	-0.289	-0.096	-0.038	0.851	0.149
Psychological immunity	0.635	0.593	0.152	-0.006	0.645	0.355
Smashing shot	-0.238	0.631	-0.200	0.388	0.517	0.483
Healthy perfectionism	0.497	0.611	0.110	-0.062	0.806	0.194
Psychological willpower	0.005	0.597	-0.221	0.107	0.778	0.222
Mental resilience	0.458	0.484	-0.010	-0.269	0.636	0.364
Mental health	-0.121	0.260	0.770	-0.361	0.416	0.584
Psychological fluency	Psychological fluency	-0.184	0.580	0.727	0.927	0.073
Linguistic root	3.781	2.095	1.103	1.014	7.993	
Percentage of variance	34.370	19.045	10.031	9.217	72.662	
Cumulative percentage of variance	34.370	53.415	63.446	72.662		
Relative importance of the factor	0.473	0.261	0.138	0.126		

4. Factors for Skill and Psychological Determinants After Rotation:

To arrive at a simple factor structure and explain the variance, the researcher rotated the extracted factors in the factor model matrix obliquely due to the presence of correlations between the variables. The researcher used the principal component method (Direct Oblimin) to remove the ambiguity that accompanied the factor analysis.7 By observing the values of the factors after rotation, they became clearer than before rotation, which facilitates the interpretation process. The skill tests were saturated with three factors at different saturations, as shown in Table (8):

Table 8. Shows the factor combinations for skill and psychological determinants after rotation

Skills tests	Factors				Socialisms	Explained variance
	1	2	3	4		
Flying shot	0.910	0,098	0,058	0,101	0,918	0,082
Serving	0.909	0.246	-0.176	0.029	0.770	0. 23
Backhand groundstroke	0.827	0.143	-0.145	0.045	0.728	0. 272
Forehand groundstroke	0.592	0.465	-0.335	0.301	0.851	0.149
Smashing shot	-0.583	0.425	-0.330	0.129	0.645	0.355
Psychological immunity	0.253	0.832	0.094	0.115	0.517	0.483
Healthy perfectionism	0.137	0.779	0.102	0.026	0.806	0.194
Mental resilience	0.204	0.649	0.111	-0.205	0.778	0.222
Willpower	-0.307	0.517	-0.221	-0.079	0.636	0.364
Mental health	-0.164	0.178	0.860	0.084	0.416	0.584
psychological fluency	0.101	-0.070	0.076	0.952	0.927	0.073
latent root	2.284	2.510	1.102	1.096	6.992	
Percentage of variance	29.854	22.820	10.022	9.966	72.662	
Cumulative variance ratio	29.854	52.674	62.696	72.662		
Relative importance of factors	0.410	0.314	0.1379	0.1371		

5. Factor Acceptance and Interpretation Conditions:

1. "The factor must be satisfied on at least three significant tests or measurements."
2. "A factor is accepted if its latent root (substantial value) is equal to or greater than one (integer)."
3. The researcher interpreted factors where test satisfactions equal or exceed (+4 and -4).
4. The researcher interpreted the results after rounding, arranging the variables on the factors in descending order.

First: Interpretation of the First Factor:

The satisfactions for this factor were arranged in descending order. Five tests were satisfied with significant satisfactions,8 representing (45%) the total number of tests selected for analysis, as shown in Table (9).

Table 9. Shows the descending order of the skill test determinants on the first factor after rounding

S	Skill determinants	Units	Descending order of variable saturation		
			High saturation	Medium saturation	Zero saturation
1	Air strike	Degree	0.910		
2	Serve	Degree	0.909		
3	Backhand groundstroke	Degree	0.827		
4	Front groundstroke	Degree	0.592		
5	Smashing shot	Degree	-0.583		
6	Psychological willpower	Degree		-0.307	
7	Psychological immunity	Degree		0.253	
8	Mental toughness	Degree		0.204	
9	Mental health	Degree		-0.164	
10	Normal perfectionism	Degree		0.137	
11	Psychological fluency	Degree		0.101	

The following tests had the following saturations: Flying Hit (0.910), Serving Test (0.909), Backhand Groundball Test (0.827), Forehand Groundball Test (0.592), Smash Test (-0.583), Psychological Willpower (-0.307), Psychological Immunity (0.253), Psychological Resilience (0.204), Psychological Health (-0.164), Normal Perfectionism (0.137), and Psychological Fluency (0.101). Five (45%) of the tests had high saturation, six (54%) had medium saturation, and zero (0%) had zero saturation. The highest saturation was recorded for the Flying Hit test at 0.910, while the lowest was for the Fluency variable.⁹ The psychological factor, with a value of (0.101), is the most important characteristic of these tests, which were all skill-based. Therefore, the researcher chose to name this factor the "Accuracy of Skill Performance" factor. 10Dhafer Hashem (2000) stated that "a good player is one who excels at performing various types of strikes, and the degree of their mastery depends largely on their perseverance and continued practice." He also stated that "a player's possession of technical skills is not sufficient on its own unless it is coupled with a good level of physical fitness in a way that ensures the player's ability to respond quickly to all possibilities of the match."¹¹

Secondly: Interpretation of the Second Factor:

The loads for this factor were arranged in descending order. Two tests were loaded with significant loads, representing (33.333%) of the total number of tests selected for analysis, as shown in Table (10):

Table (10) shows the descending order of the skill test determinants for the second factor after rotation.

S	Skill determinants	Units	Descending order of variable saturation		
			High saturation	Medium saturation	Zero saturation
1	Psychological immunity	Degree	0,832		
2	Normal perfectionism	Degree	0,779		
3	Mental toughness	Degree	0,649		
4	Psychological willpower	Degree	0,517		
5	Front groundstroke	Degree	0,465		
6	Smashing shot	Degree	0,425		
7	Sending	Degree		0,246	
8	Mental Health	Degree		0,178	
9	Rear-end ground strike	Degree		0,143	
10	Flying strike	Degree			0,098
11	psychological fluency	Degree			-0,070

The following variables had the following saturations: Psychological Immunity (0.832), Normal Perfectionism (0.779), Mental Resilience (0.649), Psychological Willpower (0.517), Forehand Ground Kick (0.465), Smash Kick (0.425), Serve Test (0.246), Mental Health (0.178), Backhand Ground Kick (0.143), Flying Kick (0.098), and Psychological Fluency (-0.070). Six (54%) of the variables and tests had high saturation, three (27%) had medium saturation, and two (0.18%) had zero saturation. The highest saturation was recorded for the Psychological Immunity variable. (0.832), while the lowest saturation was reached for the psychological fluency variable, with a value of (-0.070). This is the most important characteristic of the variables that saturate with the second factor, as they require psychological preparation for the players. Therefore, the researcher decided to name this factor the "psychological preparation" factor.¹²

To determine the value of the skill tests and psychological variables for any member of the research population, the

following sequence was used:

By returning to the skill test matrix after rotation (the final form of the matrix):13

1. Relative importance of the first factor $\times$ the value of the test that achieved the highest saturation (the volleyball)
2. Relative importance of the second factor $\times$ the value of the variable that achieved the highest saturation (psychological immunity).
3. The third and fourth factors were ignored because they did not meet the criteria for factor acceptance.

Table 11. Shows the variables extracted for the skill test battery

S	Name of the worker	Test name	Saturation value	Percentage of variance	Relative importance of the factor
1	Skillful performance	Airstrike	0.910	29.854	0.410
2	Psychological preparation	Psychological immunity	0.832	22.820	0.314

Skill test index: $0.410 \times \text{Flying strike test value} + 0.314 \times \text{Psychological immunity variable value}$.

After obtaining the statistically significant values for the indicators within the two factors that were accepted for the skill tests and psychological variables, based on a value of (+4, -4) or its equivalent as the minimum value for statistical significance, indicating high saturation, the number of statistically significant indicators contributing to the acceptance of the factors reached (11) indicators out of (11) indicators distributed across the factors. The tests (forehand groundstroke and smash) were repeated in both factors as follows:14,15

1. Factor One: (5) indicators: (flying shot, serve, backhand groundstroke, forehand groundstroke, smash).
2. Factor Two: (6) indicators: (psychological resilience, normal perfectionism, mental toughness, psychological will, forhand groundstroke, smash).

6. Derivation of Standardized, Adjusted, and Level Scores for Skill Tests and Investigated Psychological Variables:

The researcher worked on extracting standardized, adjusted, and level scores for the research variables by administering the tests to (40) players from the population between 17/4/2025 and 30/4/2025. Raw scores were obtained and converted to standardized and adjusted scores. Five levels were then extracted, as shown in Table (12).

Table 12. Shows the standard, adjusted, and level scores for the psychological variables of the community

S	Mental toughness			Mental health			Psychological immunity		
	Raw grade	Standard grade	Modified grade	Raw grade	Standard grade	Modified grade	Raw grade	Standard grade	Modified grade
1	89	1.57	65.72	45	1.547	65.47	95	1.985	69.85
2	89	1.57	65.72	45	1.547	65.47	94	1.804	68.044
3	89	1.57	65.72	45	1.547	65.47	92	1.441	64.417
4	89	1.57	65.72	45	1.547	65.47	90	1.079	60.79
5	89	1.57	65.72	45	1.547	65.47	89	0.897	58.97
6	88	1.38	63.8	45	1.547	65.47	89	0.897	58.97
7	88	1.38	63.8	45	1.547	65.47	89	0.897	58.97
8	88	1.38	63.8	44	1.202	62.02	89	0.897	58.97
9	88	1.38	63.8	42	0.51	55.102	89	0.897	58.97
10	86	0.995	59.95	42	0.51	55.102	89	0.897	58.97
11	83	0.418	54.18	42	0.51	55.102	89	0.897	58.97
12	83	0.418	54.18	42	0.51	55.102	88	0.716	57.163
13	83	0.418	54.18	42	0.51	55.102	88	0.716	57.163
14	83	0.418	54.18	42	0.51	55.102	88	0.716	57.163
15	82	0.226	52.26	42	0.51	55.102	88	0.716	57.163
16	82	0.226	52.26	40	-0.181	48.18	88	0.716	57.163
17	80	-0.158	48.41	40	-0.181	48.18	88	0.716	57.163
18	80	-0.158	48.41	40	-0.181	48.18	86	0.353	53.53
19	80	-0.158	48.41	40	-0.181	48.18	86	0.353	53.53
20	80	-0.158	48.41	40	-0.181	48.18	86	0.353	53.53
21	79	-0.351	46.48	40	-0.181	48.18	83	-0.19	48.095
22	79	-0.351	46.48	40	-0.181	48.18	83	-0.19	69.85
23	79	-0.351	46.48	40	-0.181	48.18	83	-0.19	68.044
24	79	-0.351	46.48	40	-0.181	48.18	82	-0.371	64.417
25	79	-0.351	46.48	40	-0.181	48.18	80	-0.734	48.095
26	79	-0.351	46.48	40	-0.181	48.18	80	-0.734	48.095
27	78	-0.543	44.56	39	-0.527	44.72	80	-0.734	46.28
28	78	-0.543	44.56	39	-0.527	44.72	79	-0.915	42.65
29	78	-0.543	44.56	39	-0.527	44.72	79	-0.915	42.65
30	78	-0.543	44.56	39	-0.527	44.72	79	-0.915	42.65
31	78	-0.543	44.56	39	-0.527	44.72	79	-0.915	40.84
32	78	-0.543	44.56	39	-0.527	44.72	79	-0.915	40.84

33	76	-0.928	40.71	39	-0.527	44.72	78	-1.097	40.84
34	76	-0.928	40.71	39	-0.527	44.72	78	-1.097	40.84
35	76	-0.928	40.71	37	-1.219	37.806	78	-1.097	40.84
36	76	-0.928	40.71	37	-1.219	37.806	78	-1.097	39.027
37	74	-1.313	36.86	37	-1.219	37.806	78	-1.097	39.027
38	74	-1.313	36.86	35	-1.911	30.88	76	-1.459	39.027
39	70	-2.082	29.17	35	-1.911	30.88	76	-1.459	39.027
40	70	-2.082	29.17	35	-1.911	30.88	74	-1.822	39.027
Mean	80.825		Mean	40.525		Mean	84.05		
Std	5.198		Std	2.891		Std	5.514		
Fixed number	7.31		Fixed number	6.918		Fixed number	7.616		
Excellent	65.72	58.41	Excellent	65.47	58.552	Excellent	69.85	62.234	
Very Good	58.411	51.101	Very Good	58.553	51.635	Very Good	62.235	54.619	
Good	51.102	43.791	Good	51.636	44.718	Good	54.62	47.004	
Average	43.792	36.481	Average	44.719	37.801	Average	47.005	39.389	
Poor	36.482	29.171	Poor	37.802	30.884	Poor	39.39	31.774	

Conclusions:

1. The researcher concluded that skill-based determinants and psychological variables have a direct impact on the selection of tennis players for clubs in the Central and Southern regions. These variables are: serve, forehand groundstrokes, groundstrokes, volleyball, smash, mental toughness, mental health, psychological resilience, normal perfectionism, psychological willpower, and psychological fluency.
2. Oblique rotation can be used when the variables under investigation are correlated, and orthogonal rotation should be avoided.
3. Skill-based and psychological indicators can be applied to select tennis players for clubs in the Central and Southern regions.
4. Standard and adjusted scores were determined for the skill-based determinants and psychological variables, and five standard levels were identified (excellent, very good, good, average, and weak).

Recommendations:

1. Adopting an indicator of skill-based and psychological determinants when selecting tennis players for clubs in the Central and Southern regions.
2. Using standardized scores and levels for the identified skill and psychological determinants for selection.
3. Ensuring that trainers and stakeholders benefit from the research findings.
4. Conducting similar studies for different determinants and categories.

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