ORIGINAL ARTICLE

TRENDS in
Sport Sciences
2025; 32(**4**): 253-263
ISSN 2299-9590
DOI: https://doi.org/10.23829/TSS.2025.32.4-5

The relationship between technical performance and popularity of football players: an example of the Saudi Pro League

ABDULLAH YIĞIT GÜNGÖR

Abstract

Introduction. The technical performance of players is remarkable in sports science. Studies regarding the tie between technical performance and popularity are scarce. In addition to this, the Saudi Pro League calls attention to their huge investments in the football industry. In particular, forward players are the high spot of this investment. Aim of Study. This study includes two main purposes. First, the study aims to evaluate the technical performance of football players. Second, it aims to investigate the relationship between their popularity and technical performance. Material and Methods. The sample of the study consisted of 50 forward players who competed in the Saudi Pro League during the season of 2023/2024. Data for the study were collected from Transfermarkt, the official website of the Saudi Pro League, Google Trends, and Instagram. In the first phase of the study, the complex proportional assessment (COPRAS) method, a technique applied in multiple-criteria decision analysis (MCDA), was used to analyze the data. For this purpose, the criteria (number of assists, goals, passes, shots, and touches) were established and weighted through the stepwise weight assessment ratio analysis (SWARA). In the second phase of the study, Spearman correlation analysis was used to test the relationship between technical performance and popularity. Results. The findings of the study showed that Cristiano Ronaldo, Riyad Mahrez, and Aleksandar Mitrović were the top 3 performers. Additionally, there is a correlation between technical performance, Instagram followers, Google Web index, and YouTube index. Conclusions. This study demonstrates that the variables of assists, goals, passes, shots, and touches are valid to evaluate the technical performance of forward players, on the condition that they are weighted appropriately by the experts. The combination of the COPRAS ranking technique with the SWARA weighting technique provides consistent results with previous studies. There is a significant relationship between the technical performance of players and their popularity.

KEYWORDS: football, technical performance, SWARA, popularity, COPRAS, Saudi Pro League.

Received: 7 February 2025
Accepted: 23 April 2025

Corresponding author: Abdullah Yiğit Güngör,
yigit.gungor@atauni.edu.tr

Atatürk University, Oltu Faculty of Humanities and Social Sciences, Erzurum, Turkey

Introduction

The forwards (FWs) are paid the highest amount of transfer fees and salaries in football due to their effects on team success. In this context, the top 5 salaries of FWs in the five major football leagues in Europe are around €54,000,000 (Ligue 1), €62,000,000 (Serie A), €96,000,000 (Bundesliga), €116,000,000 (Premier League), and €120,000,000 (La Liga) gross annually [1]. Additionally, the top 5 market values of FWs in the same leagues are around €255,000,000 (Ligue 1), €395,000,000 (Serie A), €325,000,000 (Bundesliga), €650,000,000 (Premier League), and €820,000,000 (La Liga) [2]. These numbers indicate a huge market that is valued at approximately 3 billion euros for only the top 5 FWs in Europe.

Similarly to the five major leagues of Europe, Saudi Arabia has also created a big market in football via crucial investments. Within this scope, the Saudi Pro

League teams have been spending a large amount of money on transfer expenditures. According to FIFA [3], approximately $1 billion was spent by Saudi teams in 2023. In addition to the transfer fees, the salaries of the top 5 FWs in the Saudi Pro League in the 2023/2024 season were around €490,000,000 [4], which is more than the total cost of the five major leagues of Europe. These statistics point to the prominence of FWs in the football industry.

FWs have a significant impact on football matches due to their fundamental responsibility of scoring goals by disabling defense systems [5]. Because football is a low-scoring competition, the goal-scoring performance of FWs is key to the team's success [6]. FWs also have various duties besides scoring goals, such as shooting, assisting, passing, and touching the ball [7]. In this respect, there are studies in the literature assessing the technical performance of FWs via several of these indicators [e.g., 8-11].

With regard to the conceptual framework, literature review, and the statistics mentioned above, this study aims to evaluate via the complex proportional assessment (COPRAS) method the technical performance of FWs who competed in the Saudi Pro League. For this purpose, five indicators were determined: number of assists, goals, passes, shots, and touches. The first research question of the study is "What is the technical performance ranking of FWs that competed in the Saudi Pro League for the season of 2023/2024?" (Research Question 1 – RQ1).

Social identity theory (SIT) established by Tajfel and Turner [12], asserts that individuals describe themselves by feeling belongingness to specific groups [13]. Even though SIT emerged in the field of social psychology, it has also produced an effect on the field of sports psychology [14]. In the context of SIT, various studies have been conducted in the sports literature regarding team identity [15], leadership [16], prosocial and antisocial behavior [17], self-worth, commitment, and effort [18].

SIT has seven main assumptions: categorization, salience, social comparison, positive distinctiveness, social identity, self-esteem, and identity management strategy [13]. Within this scope, first, an individual categorizes oneself as belonging to a particular group, such as the fan base of a specific football player. Second, the salience of belonging to this group varies depending on the context (in the stadium, during the match day, etc.). Third, an individual judges his/her salience via social comparison (comparison with the fan base of other football players). Fourth, the direction (positive or negative) and level of the distinctiveness are determined according to the evaluation of social comparison (an individual feels oneself distinct in a positive manner). Then, the self-esteem of the individual is affected by the definition of social identity which is the result of self-categorization. Finally, this process influences the identity management strategy, such as social competition, social creativity, or individual mobility.

Based on the theoretical background and literature, one of the issues that SIT has been trying to explain is communication and media [13]. In this context, the popularity of football players was investigated in different studies [19, 20]. These studies used various resources such as Google Trends, Instagram, and Twitter to measure popularity. However, just one of them [20] showed that the number of goals had a significant effect on the popularity of players on Twitter. This points to a gap in the literature for researching the relationship between popularity and technical performance with more indicators. For this purpose, the relationship between the popularity and technical performance of football players has been investigated in this study. The second research question of the study is "What is the relationship between media popularity and technical performance of FWs that competed in the Saudi Pro League for the season of 2023/2024?" (Research Question 2 – RQ2).

Aim of Study

This study includes two main purposes regarding the forward players who competed in the Saudi Pro League. First, the study aims to evaluate and rank the technical performance of football players. Second, it aims to investigate the relationship between their popularity and technical performance.

Material and Methods

Population and sample

The population of the study comprised of 124 FWs who competed in the Saudi Pro League during the season of 2023/2024. Scoring at least 4 goals in the season was determined as the inclusion criteria. FWs who scored 3 goals or fewer were excluded from the study sample. Hence, the remaining 50 FWs constituted the sample. The mean age of the FWs was 30 and their average market value was €5,250,000. Information regarding the demographics of the population is presented in Table 1. The statistics regarding the popularity and nationalities of the FWs are presented in Table 2. There are 5 N/I (no

information) for Instagram, 2 N/I for Google Web, and 5 N/I for YouTube. Hence, there are 45 (Instagram), 48 (Google Web), and 45 (YouTube) samples, respectively. The average number of Instagram followers of 45 FWs is 17,640,650, the average Google Web index of 48 FWs is 18.50, and the average YouTube index of 45 FWs is 24.22. Instagram followers are open-ended, while Google Web and YouTube indexes range from 0 to 100.

Table 1. Demographics of the forwards (FWs)

No	Name – Surname	Age	Market value (€)	Team	Team value (€)
1	Abderrazzaq Hamed-Allah	33	2,900,000	Al Ittihad	89,950,000
2	Abdulfattah Adam	29	250,000	Al Taawoun	46,450,000
3	Abdulrahman Ghareeb	27	2,300,000	Al Nassr	148,100,000
4	Ahmed Abdu	27	175,000	Abha	23,240,000
5	Aleksandar Mitrović	29	28,000,000	Al Hilal	207,730,000
6	Álex Collado	25	2,300,000	Al Okhdood	15,430,000
7	Allan Saint-Maximin	27	18,000,000	Al Ahli	143,250,000
8	Andre Gray	33	1,300,000	Al Riyadh	14,780,000
9	Anthony Nwakaeme	35	1,500,000	Al Fayha	27,010,000
10	Assan Ceesay	30	2,000,000	Damac	20,430,000
11	Carlos Júnior	28	5,500,000	Al Shabab	56,630,000
12	Cristian Tello	32	2,300,000	Al Fateh	26,650,000
13	Cristiano Ronaldo	39	15,000,000	Al Nassr	148,100,000
14	Demarai Gray	28	8,000,000	Al Ittifaq	78,900,000
15	Djaniny	33	3,200,000	Al Fateh	26,650,000
16	Fábio Martins	30	2,800,000	Al Khaleej	14,100,000
17	Faïz Selemani	30	2,000,000	Al Hazem	15,830,000
18	Fashion Sakala	27	6,000,000	Al Fayha	27,010,000
19	Feras Al Brikan	24	6,000,000	Al Ahli	143,250,000
20	Georges-Kévin N'Koudou	29	5,000,000	Damac	20,430,000
21	Habib Diallo	29	11,000,000	Al Shabab	56,630,000
22	Henry Onyekuru	27	4,500,000	Al Fayha	27,010,000
23	João Pedro	31	5,500,000	Al Taawoun	46,450,000
24	Jota	25	9,000,000	Al Ittihad	89,950,000
25	Júlio Tavares	35	375,000	Al Raed	13,450,000
26	Karim Benzema	36	10,000,000	Al Ittihad	89,950,000
27	Karim El Berkaoui	28	1,000,000	Al Raed	13,450,000
28	Karl Toko-Ekambi	31	4,200,000	Al Ittifaq	78,900,000
29	Khaled Naréy	29	2,500,000	Al Khaleej	14,100,000
30	Léandre Tawamba	34	700,000	Al Okhdood	15,430,000
31	Malcom	27	28,000,000	Al Hilal	207,730,000

32	Mateus	29	2,500,000	Al Taawoun	46,450,000
33	Mohamed Sherif	28	1,300,000	Al Khaleej	14,100,000
34	Mohammed Al Kuwaykibi	29	750,000	Al Taawoun	46,450,000
35	Mohammed Al Thani	27	300,000	Al Hazem	15,830,000
36	Mourad Batna	34	650,000	Al Fateh	26,650,000
37	Moussa Dembélé	27	12,000,000	Al Ittifaq	78,900,000
38	Muhammed Badamosi	25	1,500,000	Al Hazem	15,830,000
39	Musa Barrow	25	8,000,000	Al Taawoun	46,450,000
40	Odion Ighalo	35	1,300,000	Al Wehda	12,350,000
41	Riyad Mahrez	33	12,000,000	Al Ahli	143,250,000
42	Roberto Firmino	32	8,000,000	Al Ahli	143,250,000
43	Romarinho	33	2,500,000	Al Ittihad	89,950,000
44	Saad Al Sharfa	19	150,000	Al Fateh	26,650,000
45	Sadio Mané	32	15,000,000	Al Nassr	148,100,000
46	Saleh Al Abbas	29	250,000	Al Riyadh	14,780,000
47	Saleh Al Shehri	30	650,000	Al Hilal	207,730,000
48	Saviour Godwin	32	1,200,000	Al Wehda	12,350,000
49	Sofiane Bendebka	31	1,200,000	Al Fateh	26,650,000
50	Virgil Misidjan	30	2,300,000	Al Tai	14,700,000

Table 2. Media popularity of the FWs

No	Name – Surname	Country	Instagram	Google	YouTube
1	Abderrazzaq Hamed-Allah	Morocco	1,600,000	27	23
2	Abdulfattah Adam	Saudi Arabia	N/I	5	N/I
3	Abdulrahman Ghareeb	Saudi Arabia	650,000	24	28
4	Ahmed Abdu	Saudi Arabia/Eritrea	N/I	N/I	N/I
5	Aleksandar Mitrović	Serbia	719,000	26	42
6	Álex Collado	Spain	560,000	29	20
7	Allan Saint-Maximin	France	1,600,000	28	45
8	Andre Gray	Jamaica/England	197,000	21	4
9	Anthony Nwakaeme	Nigeria	208,000	27	57
10	Assan Ceesay	Gambia	40,000	8	16
11	Carlos Júnior	Brazil	30,400	14	43
12	Cristian Tello	Spain	1,300,000	20	30
13	Cristiano Ronaldo	Portugal	648,000,000	71	84
14	Demarai Gray	Jamaica/England	308,000	11	16

15	Djaniny	Cape Verde Islands	168,000	15	6
16	Fábio Martins	Portugal/Brazil	347,000	24	2
17	Faïz Selemani	Comoros/France	5,118	13	38
18	Fashion Sakala	Zambia	424,000	14	22
19	Feras Al Brikan	Saudi Arabia	193,000	9	8
20	Georges-Kévin N'Koudou	Cameroon/France	735,000	19	29
21	Habib Diallo	Senegal/France	179,000	12	6
22	Henry Onyekuru	Nigeria	5,800,000	21	40
23	João Pedro	Brazil	18,100	16	3
24	Jota	Portugal	455,000	17	30
25	Júlio Tavares	Cape Verde Islands	8,410	9	67
26	Karim Benzema	France/Algeria	76,100,000	32	52
27	Karim El Berkaoui	Morocco	40,600	10	6
28	Karl Toko-Ekambi	Cameroon/France	508,000	17	13
29	Khaled Naréy	Togo/Germany	21,900	11	4
30	Léandre Tawamba	Cameroon	N/I	10	9
31	Malcom	Brazil	3,200,000	21	35
32	Mateus	Brazil	39,200	15	13
33	Mohamed Sherif	Egypt	2,300,000	15	26
34	Mohammed Al Kuwaykibi	Saudi Arabia	35,300	16	2
35	Mohammed Al Thani	Saudi Arabia	N/I	N/I	N/I
36	Mourad Batna	Morocco	538,000	24	12
37	Moussa Dembélé	France/Mali	322,000	11	42
38	Muhammed Badamosi	Gambia	28,500	8	2
39	Musa Barrow	Gambia	123,000	10	5
40	Odion Ighalo	Nigeria/Italy	1,200,000	21	38
41	Riyad Mahrez	Algeria/France	12,300,000	34	52
42	Roberto Firmino	Brazil	15,400,000	28	24
43	Romarinho	Brazil	790,000	24	39
44	Saad Al Sharfa	Saudi Arabia	N/I	3	N/I
45	Sadio Mané	Senegal	16,400,000	23	37
46	Saleh Al Abbas	Saudi Arabia	34,500	6	3
47	Saleh Al Shehri	Saudi Arabia	550,000	33	13
48	Saviour Godwin	Nigeria/Belgium	25,900	6	N/I
49	Sofiane Bendebka	Algeria	315,000	18	2
50	Virgil Misidjan	Suriname/Netherlands	12,300	12	2

Note: N/I – no information

Data collection

Demographics of the sample were collected from www.transfermarkt.de [2]. Regarding RQ1, the related data of the indicators of assists, goals, passes, shots, and touches used in the analysis were collected from the official Saudi Pro League website [21]. Data regarding the players' media popularity were collected from Google Trends [22] between the dates of August 11, 2023 and May 27, 2024, which is within the 2023/2024 season of the Saudi Pro League. Similarly, details on the interest over time for each player in Google Web and YouTube were collected. To avoid prejudice, an average of 43 indices during the specific period mentioned was taken for each player. Lastly, Instagram [23] was used to collect the number of followers of each football player.

Analysis of data

For RQ1 (What is the technical performance ranking of FWs that competed in the Saudi Pro League for the season of 2023/2024?), the COPRAS method [24], a technique used in multiple-criteria decision analysis (MCDA), was used to analyze the data. For this purpose, the criteria (number of assists, goals, passes, shots, and touches) were established and weighted through the stepwise weight assessment ratio analysis (SWARA) [25]. In this context, the opinions of three experts regarding the coefficients of the criteria were taken. The experts from Poland, Spain, and the United Kingdom are academicians who have been working in the field of sports science. Additionally, they are authors of remarkable articles regarding the technical performance of football players, published in journals with high impact factors. They were reached via e-mail and requested to recommend coefficients for the criteria between 0.00 and 1.00. In this context, the recommended coefficients for the criteria were as follows: assists (0.80-0.50-0.60), goals (1-1-1), passes (0.20-0.10-0.10), shots (0.35-0.25-0.40), and touches (0.10-0.05-0.005).

Six steps of the COPRAS method were implemented as shown below [26].

Step 1: Generation of the decision matrix: Alternatives constitute lines, and criteria constitute columns of the decision matrix (A).

$$\begin{bmatrix} a_{11} & \cdots & a_{1p} \\ \vdots & \ddots & \vdots \\ x_{m1} & \cdots & a_{mn} \end{bmatrix}$$

m – number of alternatives
p – number of criteria

Step 2: Normalization of the decision matrix: Normalized decision matrix (X^*) is calculated by using elements of decision matrix (A).

$$X_{ij}^* = \frac{x_{ij}}{\sum_{i=1}^{m} x_{ij}} \quad (i = 1, \ldots m \text{ and } j = 1, \ldots p)$$

$$X^* = \begin{bmatrix} x_{11}^* & \cdots & x_{1p}^* \\ \vdots & \ddots & \vdots \\ x_{m1}^* & \cdots & x_{mn}^* \end{bmatrix}$$

Step 3: Weighting of normalized decision matrix: Weighted normalized decision matrix (N) is obtained by multiplying elements of normalized matrix x^*_{ij} with w_i weights.

$$n_{ij} = x_{ij}^* w_j$$

Step 4: Calculation of S_i^+ value: S_i^- represents total utility criteria, S_i^- represents total cost criteria within the weighted normalized decision matrix.

Step 5: Calculation of relative significance values: Relative significance values are obtained by using the formula below.

$$Q_i = S_i^+ + \frac{\sum_{i=1}^{m} s_i^-}{s_i^- \sum_{i=1}^{m} \left(\frac{1}{s_i^-}\right)}$$

Step 6: Calculation of performance index values: Performance index values are obtained by using the formula below.

$$P_i = \left(\frac{Q_i}{Q_{max}}\right) . 100$$

For RQ2 (What is the relationship between media popularity and technical performance of FWs that competed in the Saudi Pro League for the season of 2023/2024?), Spearman correlation analysis (one of quantitative analysis techniques) was used. In this context, the technical performance index, average interest index on Google Web, average interest index on YouTube, and total number of followers on Instagram were used. The first three variables range from 0-100, while follower numbers are open-ended.

Results

Regarding RQ1 (What is the technical performance ranking of FWs that competed in the Saudi Pro League for the season of 2023/2024?), findings of the COPRAS

and SWARA methods are presented step by step below. SWARA method: In order to weigh the criteria, the opinions of three experts were taken. Within this scope, initial coefficients were determined. After the means of initial coefficients were calculated, four steps of SWARA were implemented as a comparison of mean significance scores of criteria, coefficient values of criteria, adjusted weight values of criteria, and final criteria weights. In this context, the final criteria weights are presented in Table 3 as a result of the SWARA method.

Table 3. Initial coefficients and final weights of criteria

Code	Criterion	Coefficient	Final weights	Aim
A	assists	0.85	0.254	utility
G	goals	1.00	0.292	utility
P	passes	0.15	0.140	utility
S	shots	0.45	0.181	utility
T	touches	0.10	0.133	utility

COPRAS method: Within the scope of the COPRAS method, six steps were implemented: generation of the decision matrix (Table 4), normalization of the decision matrix, weighting of normalized decision matrix, calculation of S_i^+ value, calculation of performance index values and ranking of players (Table 5).

Table 4. Decision matrix

Player/indicator	Assists	Goals	Passes	Shots	Touches
Abderrazzaq Hamed-Allah	3	19	584	70	959
Abdulfattah Adam	0	6	217	20	338
Abdulrahman Ghareeb	6	4	795	28	1080
Ahmed Abdu	2	4	117	30	349
Aleksandar Mitrović	5	28	461	120	781
Álex Collado	3	4	950	72	1680
Allan Saint-Maximin	9	4	768	48	1351
Andre Gray	2	7	348	31	584
Anthony Nwakaeme	5	4	684	44	977
Assan Ceesay	1	6	178	32	347
Carlos Júnior	3	6	314	38	576
Cristian Tello	3	11	1121	84	1566
Cristiano Ronaldo	11	35	871	181	1324
Demarai Gray	3	4	527	45	999
Djaniny	1	8	266	33	470
Fábio Martins	5	7	729	57	1279
Faïz Selemani	4	7	758	71	1359
Fashion Sakala	6	19	760	104	1388
Feras Al Brikan	8	17	420	46	725
Georges-Kévin N'Koudou	5	15	977	67	1569
Habib Diallo	2	6	346	50	637
Henry Onyekuru	3	10	481	39	868
João Pedro	1	11	495	80	871
Jota	0	4	348	25	577
Júlio Tavares	5	7	413	31	645
Karim Benzema	7	9	669	71	1081
Karim El Berkaoui	2	12	516	60	835
Karl Toko-Ekambi	1	11	696	71	1081
Khaled Naréy	2	7	619	50	1126
Léandre Tawamba	3	6	660	59	1098
Malcom	6	15	1198	87	1648
Mateus	5	6	613	61	1041
Mohamed Sherif	1	6	346	61	583
Mohammed Al Kuwaykibi	7	4	612	38	1130
Mohammed Al Thani	0	5	540	42	993
Mourad Batna	8	8	602	71	1202
Moussa Dembélé	1	12	318	65	610
Muhammed Badamosi	1	4	311	46	656
Musa Barrow	2	6	572	57	894
Odion Ighalo	0	15	376	75	702
Riyad Mahrez	13	11	1347	78	2063
Roberto Firmino	6	9	875	70	1295
Romarinho	3	5	993	54	1418
Saad Al Sharfa	0	4	63	10	112
Sadio Mané	8	13	1075	64	1736
Saleh Al Abbas	3	8	290	31	504
Saleh Al Shehri	0	5	114	22	196
Saviour Godwin	1	6	488	81	1001

Sofiane Bendebka	6	4	1164	24	1534
Virgil Misidjan	3	4	596	47	1152
	utility	utility	utility	utility	utility

Table 5. Performance index values and ranking of players

Player/indicator	P_i value	Ranking
Cristiano Ronaldo	100.000	1
Riyad Mahrez	72.414	2
Aleksandar Mitrović	63.793	3
Fashion Sakala	60.345	4
Malcom	60.345	4
Sadio Mané	56.897	6
Georges-Kévin N'Koudou	51.724	7
Feras Al Brikan	50.000	8
Abderrazzaq Hamed-Allah	46.552	9
Karim Benzema	46.552	9
Mourad Batna	46.552	9
Allan Saint-Maximin	44.828	12
Roberto Firmino	44.828	12
Cristian Tello	43.103	14
Faïz Selemani	41.379	15
Fábio Martins	39.655	16
Álex Collado	36.207	17
Mateus	36.207	17
Mohammed Al Kuwaykibi	36.207	17
Sofiane Bendebka	36.207	17
Abdulrahman Ghareeb	34.483	21
Anthony Nwakaeme	32.759	22
Karim El Berkaoui	32.759	22
Karl Toko-Ekambi	32.759	22
Odion Ighalo	32.759	22
Romarinho	32.759	22
Júlio Tavares	31.034	27
Léandre Tawamba	31.034	27
Henry Onyekuru	29.310	29
João Pedro	29.310	29
Khaled Naréy	29.310	29
Moussa Dembélé	29.310	29
Demarai Gray	27.586	33
Musa Barrow	27.586	33
Virgil Misidjan	27.586	33
Saviour Godwin	25.862	36
Andre Gray	24.138	37
Carlos Júnior	24.138	37
Habib Diallo	24.138	37
Mohamed Sherif	22.414	40
Saleh Al Abbas	22.414	40
Mohammed Al Thani	20.690	42
Muhammed Badamosi	18.966	43
Ahmed Abdu	17.241	44
Djaniny	17.241	44
Assan Ceesay	15.517	46
Jota	15.517	46
Abdulfattah Adam	12.069	48
Saleh Al Shehri	10.345	49
Saad Al Sharfa	6.897	50

Regarding RQ2 (What is the relationship between media popularity and technical performance of FWs that competed in the Saudi Pro League for the season of 2023/2024?), findings of the correlation analysis are presented below. For this purpose, distributions of the variables were checked to determine whether they were distributed normally or not. Within this scope, Skewness and Kurtosis values were calculated. Results of the values showed that all media popularity indexes were not normally distributed except for YouTube [27]. Therefore, Spearman correlation analysis was performed on Jamovi to investigate the relationship between technical performance, Instagram followers, Google Web index, and YouTube index. The findings are presented in Table 6.

Spearman correlation analysis results show that there is a significant relationship between technical performance and Instagram followers ($r_s = 0.533$ and $p < 0.001$). The level of the relationship is moderate. There is a significant relationship between technical performance and Google Web index ($r_s = 0.577$ and $p < 0.001$). The level of the relationship is moderate as well. There is a significant relationship between technical performance and YouTube index ($r_s = 0.378$ and $p < 0.05$). The level of the relationship is weak. There is a significant

Table 6. Findings of Spearman correlation analysis

Variable		1	2	3	4
1. Technical performance	Correlation coeff.	1.000	0.533***	0.577***	0.378*
	Sig. (2-tailed)	–	<0.001	<0.001	<0.05
	N	50	45	48	45
2. Instagram followers	Correlation coeff.	0.533***	1.000	0.769***	0.531***
	Sig. (2-tailed)	<0.001	–	<0.001	<0.001
	N	45	45	45	44
3. Google Web	Correlation coeff.	0.577***	0.769***	1.000	0.447***
	Sig. (2-tailed)	<0.001	<0.001	–	<0.001
	N	48	45	48	45
4. YouTube	Correlation coeff.	0.378*	0.531***	0.447***	1.000
	Sig. (2-tailed)	<0.05	<0.001	<0.001	–
	N	45	44	45	45

Coeff is used as the abbreviation for coefficient.
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

relationship between Instagram followers and Google Web index ($r_s = 0.769$ and $p < 0.001$). The level of the relationship is strong. There is a significant relationship between Instagram followers and YouTube index ($r_s = 0.531$ and $p < 0.001$). The level of the relationship is moderate. There is a significant relationship between Google Web index and YouTube index ($r_s = 0.447$ and $p < 0.001$). The level of the relationship is moderate.

Discussion

This section addresses the study in two categories regarding RQ1 and RQ2. In this context, the first technical performance of the FWs competing in the Saudi Pro League was evaluated. For this purpose, assists, goals, passes, shots, and touches were taken into account. According to the ranking table, Cristiano Ronaldo had the highest technical performance ($P_i = 100$). He was by far the top scorer with 35 goals in the season. Thus, he had a 7-goal lead over Aleksandar Mitrović's second place (28 goals). Ronaldo had the second place in the assist ranking with 11 assists. He had 2 fewer assists than Riyadh Mahrez, who had the first rank in the assist table. He also had the first rank in shots stats with 181 shots in the season.

The 2023/2024 Roshn Saudi League Fantasy Team of the Season was announced on the official website [21]. Ronaldo was in the team of the season with the highest number of points in the team. Cristiano Ronaldo (170 points), Aleksandar Mitrović (142 points), and Riyad Mahrez (117 points) were selected as forwards for the team of the season. This is coherent with the findings of the study. The first three forwards are the same except for the places of Mitrović and Mahrez. This shows the validity of the indicators used in the study. This is also supportive of the previous studies in the literature. For instance, some studies [e.g., 8-11] found that shots, passes, and touches had significant relationships with technical performance.

In terms of the methodology, this study includes the SWARA weighting and COPRAS ranking techniques, both applied in multiple-criteria decision making (MCDM), to evaluate the technical performance of the players. Previous studies have also used MCDM to rank football players [e.g., 28-30]. Several weighting techniques were used, among them: CRITIC (criteria importance through inter-criteria correlation), PSI (preference selection index), AHP (analytic hierarchy process), and equal significance. In addition to weighting techniques, different ranking techniques were used, among them: WASPAS (weighted aggregated sum product assessment), GRA (grey relational analysis), MOORA (multi-objective optimization by ratio analysis), and TOPSIS (technique for order preference by similarity to ideal solution). Within this scope, this study differentiates from the previous studies regarding the weighting and ranking techniques and supports their findings. This shows the usefulness of SWARA and COPRAS for future studies.

From the theoretical point of view, this study supports SIT as it explains the individual mobility in the final stage. In this context, this study shows that the technical performance of players has a significant impact on their popularity. This popularity is comprised of individual mobility of fans by searching the players on Google Web and YouTube or following them on Instagram. Consequently, when the players have better technical performance on the pitch, their audiences and followers increase. They categorize themselves as fans of specific players and in this way, they feel positive distinctiveness and get higher self-esteem.

Apart from theoretical contributions, this study includes several limitations. As far as they are concerned, the study covers only the Saudi Pro League, the forward position, and the season of 2023/2024. The technical performance of players was evaluated via five indicators. The value of the clubs was not considered for the analysis. Additionally, the number of experts (three) that established the coefficients of the indicators and popularity of the players represented by Instagram followers, Google Web index, and YouTube index, were not without significance. In light of these limitations, future studies can include more football leagues and even consider the women's leagues. Different indicators can be added as indicators of technical performance. Various social media platforms can be used to represent the popularity of the players, such as X, TikTok, etc. Additionally, the popularity of the players can be evaluated via questionnaires. Lastly, different weighting and ranking techniques can be utilized.

Conclusion

This study demonstrates that the variables of assists, goals, passes, shots, and touches are valid to evaluate the technical performance of forward players, on the condition that they are weighted appropriately by the experts. The combination of the COPRAS ranking technique with the SWARA weighting technique provides consistent results with previous studies. There is a significant relationship between the technical performance of players and their popularity. Hence, this study supports SIT.

Consequently, this study promotes some practical implications as well. For instance, football clubs can use the performance indicators of this study to evaluate forward players. In this way, they can make transfer decisions in terms of buying, selling, or renewing contracts. Coaches and technical staff can focus on these indicators for the training and try to develop players' skills. Additionally, the social impact of the players also promotes the recognition of the clubs or leagues. Thus, the financial income and popularity of the clubs can be increased. Lastly, younger players in particular can plan their self-development both in technical and social way by utilizing the findings of this study.

Funding

No external funding.

Conflict of Interest

The author declares no conflict of interest.

References

1. Capology, www.capology.com
2. Transfermarkt, www.transfermarkt.de
3. Fédération Internationale de Football Association (FIFA). Global Transfer Report 2023. Jan 30, 2024. www.inside.fifa.com
4. Statista. Spending on football SPL transfers Saudi Arabia 2023-2024, by club (published by S. Saleh). Jul 9, 2025. www.statista.com
5. Smith S, Bedwell J, Eldridge D, Pulling C, Conway K, Lloyd G. Proximity differences between forwards and defenders during goal scoring in soccer. Sci J Sport Perform. 2025;4(1):55-68. https://doi.org/10.55860/XEVY3279
6. Rodenas JG, Malavés RA, Desantes AT, Ramírez ES, Hervás JC, Malavés RA. Past, present and future of goal scoring analysis in professional soccer. Retos: Nuevas Tendencias En Educación Física, Deporte y Recreación. 2020(37):774-785.https://doi.org/10.47197/retos.v37i37.69837
7. Liu H, Gómez MA, Gonçalves B, Sampaio J. Technical performance and match-to-match variation in elite football teams. J Sports Sci. 2016 Mar 18;34(6):509-518. https://doi.org/10.1080/02640414.2015.1117121
8. Barnes C, Archer DT, Hogg B, Bush M, Bradley P. The evolution of physical and technical performance parameters in the English Premier League. Int J Sports Med. 2014 Dec;35(13):1095-100.https://doi.org/10.1055/s-0034-1375695
9. Redwood-Brown AJ, O'Donoghue PG, Nevill AM, Saward C, Sunderland C. Effects of playing position, pitch location, opposition ability and team ability on the technical performance of elite soccer players in different score line states. PloS ONE. 2019 Feb 5;14(2):e0211707. https://doi.org/10.1371/journal.pone.0211707
10. Liu H, Gómez MA, Gonçalves B, Sampaio J. Technical performance and match-to-match variation in elite football teams. J Sports Sci. 2016 Mar 18;34(6):509-518. https://doi.org/10.3389/fpsyg.2021.722200

11. Yi Q, Jia H, Liu H, Gómez MÁ. Technical demands of different playing positions in the UEFA Champions League. Int J Perform Anal Sport. 2018 Nov 2;18(6):926-937. https://doi.org/10.1080/24748668.2018.1528524
12. Tajfel H, Turner JC. An integrative theory of intergroup conflict. In: Williams JA, Worchel S, editors. The Social Psychology of Intergroup Relations. Belmont, CA: Wadsworth; 1979. pp. 33-47.
13. Trepte S, Loy LS. Social identity theory and self-categorization theory. The International Encyclopedia of Media Effects. 2017 Mar 29:1-13. https://doi.org/10.1002/9781118783764.wbieme0088
14. Rees T, Alexander Haslam S, Coffee P, Lavallee D. A social identity approach to sport psychology: principles, practice, and prospects. Sports Med. 2015 Aug;45:1083-1096. https://doi.org/10.1007/s40279-015-0345-4
15. Fink JS, Parker HM, Brett M, Higgins J. Off-field behavior of athletes and team identification: using social identity theory and balance theory to explain fan reactions. J Sport Manag. 2009 Mar 1;23(2):142-155. https://doi.org/10.1123/jsm.23.2.142
16. Slater MJ, Coffee P, Barker JB, Evans AL. Promoting shared meanings in group memberships: a social identity approach to leadership in sport. Reflect Pract. 2014 Sep 3; 15(5):672-685. https://doi.org/10.1080/14623943.2014.944126
17. Bruner MW, Boardley ID, Côté J. Social identity and prosocial and antisocial behavior in youth sport. Psychol Sport Exerc. 2014 Jan 1;15(1):56-64. https://doi.org/10.1016/j.psychsport.2013.09.003
18. Martin LJ, Balderson D, Hawkins M, Wilson K, Bruner MW. The influence of social identity on self-worth, commitment, and effort in school-based youth sport. J Sports Sci. 2018 Feb 1;36(3):326-332. https://doi.org/10.1080/02640414.2017.1306091
19. Malagón-Selma P, Debón A, Domenech J. Measuring the popularity of football players with Google Trends. PLoS ONE. 2023 Aug 16;18(8):e0289213. https://doi.org/10.1371/journal.pone.0289213
20. Vergeer M, Mulder L. Football players' popularity on Twitter explained: performance on the pitch or performance on Twitter?. Int J Sport Commun. 2019 Sep 1;12(3):376-396. https://doi.org/10.1123/ijsc.2018-0171
21. Saudi Pro League, www.instagram.com
22. Google Trends, https://trends.google.com/trends/
23. Instagram, www.instagram.com
24. Zavadskas EK, Kaklauskas A, Šarka V. The new method of multicriteria complex proportional assessment of projects. Techn Econ Dev Econ. 1994 Jan;1(3):131-139.
25. Keršuliene V, Zavadskas EK, Turskis Z. Selection of rational dispute resolution method by applying new step-wise weight assessment ratio analysis (SWARA). J Bus Econ Manag. 2010 Jan 1;11(2):243-258. https://doi.org/10.3846/jbem.2010.12
26. Özdemir G, Özyalçın AT, Bircan H. Çok kriterli karar verme yöntemleri ve ÇKKV yazılımı ile problem çözümü (Multi-criteria decision-making methods and problem solving with MCDM software). Ankara: Nobel; 2021.
27. Groeneveld RA, Meeden G. Measuring skewness and kurtosis. J R Stat Soc Ser D: The Statistician. 1984 Dec;33(4):391-399. https://doi.org/10.2307/2987742
28. Güngör AY. Ranking the performances of goalkeepers by WASPAS method: AFC Asian Cup Qatar 2023. Spor ve Rekreasyon Araştırmaları Dergisi. 2024 Jun 6;6(1):25-35. https://doi.org/10.52272/srad.1463846
29. Görçün ÖF, Küçükönder H. A novel performance evaluation technique based on integrated weighting approach: a case study in the field of sport management. Decis Sci Lett. 2021;10(4):511-524. http://dx.doi.org/10.5267/j.dsl.2021.5.004
30. Karaatlı M, Dağ O. Türk milli erkek futbol takımına çok kriterli karar verme yöntemleri ile futbolcu seçimi (Player selection for the Turkish national men's football team using multi-criteria decision-making methods). Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi. 2018;23(4):1433-1454.