

Analysis of in-game stats: Comparison between Top 3 leagues in Europe & LATAM representative leagues in Season 23-24

Emanuel Novelo Hernández

November 2, 2024

1 Summary & Objective

The project has the objective to compare the in-game stats/performance of the players grouped by the top 3 leagues in Europe vs 3 of the most important leagues in LATAM (Brasileirao was excluded but might as well be taken into account).

For this project, the leagues to be analyzed are the following:

Top 3 Europe leagues: - Premier League - Serie A - La Liga

LATAM Leagues: - Liga MX - Argentina LPF - MLS

Disclaimer: This project was made for educational purposes only. Data belongs to Wyscout. Special thanks to <https://github.com/griffisben> for pulling the data. If anyone deserves credit for this project, it's him.

Full repository with code at: <https://github.com/EmanuelNovelo/Big-Data-MCD-2024/blob/main/Notebooks/stats-spider-analysis.ipynb>

The project was made using basic Python libraries: - numpy - pandas - matplotlib - sklearn etc.

PySpark was used for almost all the tasks, this was completely unnecessary, but I wanted to practice with it, also I like working with schemas.

Summary of the final number of players analyzed by league across all positions:

- La Liga: 475 players
- Premier League: 453 players
- Liga MX: 510 players
- MLS: 686 players
- Serie A: 496 players
- Argentina LPF: 836 players

This count includes forwards, midfielders, defenders, and goalkeepers from each league.

1.1 About the Data

The data represents in-game stats of the players of all leagues (Football-soccer) throughout the 2023-2024 season. Data also has player's personal information and demographics. Along the next lines of code, exploratory analysis on data and its schemas were performed to understand each league's information and data types.

Some important observations regarding 4 particular columns: - 'Team' - 'Team within timeframe' - 'Competition' - 'league'

'Team' refers to the Team the player is currently playing for, while 'Team within timeframe' refers to the team the player was playing for during the timeframe of the data. 'Competition' refers to the league the player is currently playing in, while 'league' refers to the league the player was playing in during the timeframe of the data.

2 Creating subsets of the data by Position: Forwards, Midfielders, Defenders, Goalkeepers

After subsetting the data, we can now calculate the statistics and obtain information by each Position sub-group.

Each Position sub-group has particular columns or stats that are relevant to them and representative. The selection of the columns will depend on the analysis to be performed. For this particular example the next columns will be selected:

2.1 Descriptive statistics by position group

===== FORWARDS =====

Distinct Primary positions (8) in forwards:

```
+-----+
|Primary position|
+-----+
|AMF              |
|RAMF             |
|LWF              |
|LW               |
|RW               |
|LAMF             |
|RWF              |
|CF               |
+-----+
```

Distinct Leagues (6) in forwards:

```
+-----+
|League          |
+-----+
|LaLiga          |
|PremierLeague   |
|LigaMX          |
|MLS             |
|SerieA          |
|ArgentinaLPF    |
```

```
+-----+
```

Total observations in forwards: 1331

Count of NA values per column in forwards:

```
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----
+-----+-----+-----+-----+-----+-----+
-----+
|Full name|Team|Team within selected timeframe|Competition|League|Primary
position|Age|Market value|Matches played|Minutes played|Foot|Goals per 90|Shots
per 90|Dribbles per 90|Successful dribbles, %|Touches in box per 90|Assists per
90|xG per 90|
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----
+-----+-----+-----+-----+-----+-----+
-----+
|0      |0      |0      |0      |0      |0      |0      |0      |0
|0 |0      |0      |0      |0      |0      |0      |0      |0
|0      |0      |0      |0      |0      |0      |0      |0      |
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----
+-----+-----+-----+-----+-----+-----+
-----+
```

===== MIDFIELDERS =====

Distinct Primary positions (5) in midfielders:

```
+-----+
|Primary position|
+-----+
|LCMF            |
|RCMF3           |
|RCMF            |
|DMF             |
|LCMF3           |
+-----+
```

Distinct Leagues (6) in midfielders:

```
+-----+
|League          |
+-----+
|LaLiga          |
|PremierLeague   |
|LigaMX          |
```

```
|MLS      |
|SerieA   |
|ArgentinaLPF |
+-----+
```

Total observations in midfielders: 605

Count of NA values per column in midfielders:

```
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+
----+-----+
|Full name|Team|Team within selected timeframe|Competition|League|Primary
position|Age|Market value|Matches played|Minutes played|Foot|Passes per
90|Accurate passes, %|Key passes per 90|xA per 90|Progressive passes per
90|Received passes per 90|Progressive runs per 90|
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+
----+-----+
|0      |0  |0      |          |0      |0      |0
|0  |0      |0      |0      |0      |0  |0      |0
|0      |0      |0      |          |0      |0      |0
|
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+
----+-----+
```

===== DEFENDERS =====

Distinct Primary positions (10) in defenders:

```
+-----+
|Primary position|
+-----+
|LWB             |
|RCB3            |
|LB5             |
|LB              |
|RB              |
|LCB             |
|RCB             |
|CB              |
|RB5             |
|RWB             |
+-----+
```

Distinct Leagues (6) in defenders:

```
+-----+
|League      |
+-----+
|LaLiga      |
|PremierLeague|
|LigaMX      |
|MLS         |
|SerieA      |
|ArgentinaLPF|
+-----+
```

Total observations in defenders: 1252

Count of NA values per column in defenders:

```
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+
|Full name|Team|Team within selected timeframe|Competition|League|Primary
position|Age|Market value|Matches played|Minutes played|Foot|Successful
defensive actions per 90|Interceptions per 90|Aerial duels per 90|Aerial duels
won, %|Sliding tackles per 90|Shots blocked per 90|Fouls per 90|
+-----+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+
|0        |0   |0        |          |0        |0        |0
|0  |0        |0        |0        |0        |0  |0
|0        |          |0        |          |0        |          |0
|0        |          |0        |          |          |          |
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+
```

===== GOALKEEPERS =====

Distinct Primary positions (1) in goalkeepers:

```
+-----+
|Primary position|
+-----+
|GK              |
+-----+
```

Distinct Leagues (6) in goalkeepers:

```
+-----+
|League      |
+-----+
|LaLiga      |
|PremierLeague|
|LigaMX      |
|MLS         |
|SerieA      |
|ArgentinaLPF|
+-----+
```

Total observations in goalkeepers: 268

Count of NA values per column in goalkeepers:

```
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+
|Full name|Team|Team within selected timeframe|Competition|League|Primary
position|Age|Market value|Matches played|Minutes played|Foot|Conceded goals per
90|Save rate, %|xG against per 90|Prevented goals per 90|Exits per 90|
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+
|0        |0    |0        |0        |0        |0    |0        |0
|0 |0        |0        |0        |0        |0    |0        |0
|0        |0        |0        |0        |0        |0    |0        |0
+-----+-----+-----+-----+-----+-----+
--+-+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+
```

===== FORWARDS =====

```
+-----+-----+
|League      |count|
+-----+-----+
|LaLiga      |182  |
|PremierLeague|180  |
|LigaMX      |205  |
|MLS         |261  |
|SerieA      |170  |
|ArgentinaLPF|333  |
+-----+-----+
```

===== MIDFIELDERS =====

League	count
LaLiga	75
PremierLeague	65
LigaMX	89
MLS	109
SerieA	100
ArgentinaLPF	167

===== DEFENDERS =====

League	count
LaLiga	178
PremierLeague	172
LigaMX	180
MLS	254
SerieA	182
ArgentinaLPF	286

===== GOALKEEPERS =====

League	count
LaLiga	40
PremierLeague	36
LigaMX	36
MLS	62
SerieA	44
ArgentinaLPF	50

3 Spider Diagrams by group of Leagues and Positions

To determine the main characteristics of each position group, we can calculate the average values for key performance metrics. We will calculate the mean values for each column in the subset DataFrames. Variables will be chosen based on the next criteria: Objective by position. - Forward: Evaluate the ability to score goals, create chances and contribute to the team's attack. - Midfielder: Evaluate distribution, creation of chances, defensive contribution and ability to create attacks. - Defender: Evaluate ability to stop attacks, win duels, and block actions. - Goalkeeper: Evaluate ability to stop shots, air duels, and defensive contribution.

3.1 Obtaining the summary statistics for each subset

Aggregated metrics for Forwards:

	Mean	Median	Min	Max
Age	2.567919e+01	25.00	16.0	4.000000e+01
Market value	7.407476e+06	1800000.00	0.0	1.800000e+08
Matches played	2.083546e+01	21.00	1.0	4.200000e+01
Minutes played	1.266137e+03	1061.00	46.0	3.804000e+03
Goals per 90	1.994741e-01	0.16	0.0	1.960000e+00
Shots per 90	1.790075e+00	1.75	0.0	8.380000e+00
Dribbles per 90	3.754290e+00	3.29	0.0	1.442000e+01
Successful dribbles, %	4.872772e+01	50.00	0.0	1.000000e+02
Touches in box per 90	2.806957e+00	2.74	0.0	9.600000e+00
Assists per 90	9.839970e-02	0.06	0.0	1.610000e+00
xG per 90	2.307288e-01	0.20	0.0	1.530000e+00

Aggregated metrics for Midfielders:

	Mean	Median	Min	Max
Age	2.611074e+01	26.00	17.00	3.800000e+01
Market value	6.271322e+06	1500000.00	0.00	1.200000e+08
Matches played	2.240661e+01	25.00	1.00	4.300000e+01
Minutes played	1.555547e+03	1466.00	45.00	4.101000e+03
Passes per 90	3.947326e+01	37.70	12.72	7.759000e+01
Accurate passes, %	8.443757e+01	85.18	59.46	9.796000e+01
Key passes per 90	2.137851e-01	0.17	0.00	2.000000e+00
xA per 90	6.236364e-02	0.04	0.00	4.300000e-01
Progressive passes per 90	5.448777e+00	5.26	0.00	1.133000e+01
Received passes per 90	2.759835e+01	25.78	6.14	6.600000e+01
Progressive runs per 90	1.062050e+00	0.89	0.00	5.180000e+00

Aggregated metrics for Defenders:

	Mean	Median	Min	\
Age	2.651038e+01	26.000	16.00	
Market value	5.438958e+06	1500000.000	0.00	
Matches played	2.054153e+01	22.000	1.00	
Minutes played	1.629850e+03	1600.500	45.00	
Successful defensive actions per 90	8.958786e+00	8.870	1.02	
Interceptions per 90	4.448339e+00	4.415	0.00	
Aerial duels per 90	3.131086e+00	2.890	0.00	
Aerial duels won, %	4.977273e+01	51.000	0.00	

Sliding tackles per 90	3.790176e-01	0.290	0.00
Shots blocked per 90	3.876757e-01	0.330	0.00
Fouls per 90	9.662220e-01	0.900	0.00

	Max
Age	3.900000e+01
Market value	1.000000e+08
Matches played	4.200000e+01
Minutes played	4.057000e+03
Successful defensive actions per 90	2.009000e+01
Interceptions per 90	1.011000e+01
Aerial duels per 90	1.579000e+01
Aerial duels won, %	1.000000e+02
Sliding tackles per 90	4.030000e+00
Shots blocked per 90	2.710000e+00
Fouls per 90	4.250000e+00

Aggregated metrics for Goalkeepers:

	Mean	Median	Min	Max
Age	2.942910e+01	29.000	18.000	4.300000e+01
Market value	4.226213e+06	1000000.000	0.000	4.500000e+07
Matches played	1.855597e+01	17.000	1.000	4.200000e+01
Minutes played	1.832701e+03	1664.500	52.000	4.166000e+03
Conceded goals per 90	1.290896e+00	1.200	0.000	3.670000e+00
Save rate, %	6.847175e+01	69.505	0.000	1.000000e+02
xG against per 90	1.246642e+00	1.170	0.070	3.830000e+00
Prevented goals per 90	-4.369030e-02	-0.009	-1.197	1.781000e+00
Exits per 90	1.233694e+00	1.205	0.000	4.640000e+00

3.2 Standardize the data to prepare it for Graphs

The metrics shown below were the ones chosen as representative for each position group.

The RobustScaler is an effective scaling technique for datasets with outliers or variables that exhibit different ranges and distributions, which is often the case in sports metrics. Here's why it is particularly useful and why it's a good choice for your analysis. Unlike the MinMaxScaler, which scales the data based on the minimum and maximum values, or the StandardScaler, which centers and scales data based on mean and standard deviation, the RobustScaler leverages the median and interquartile range (IQR) (i.e., the range between the 25th and 75th percentiles). By using the median and IQR, the RobustScaler is less sensitive to outliers, meaning that extreme values in your data won't overly influence the scaling process. This is especially important in sports datasets, where outliers (like exceptionally high performance metrics for certain players) can skew the scaling when using other methods. The RobustScaler centers the data around the median and scales based on the IQR, which provides a robust measure of central tendency and dispersion. For example, metrics such as "Goals per 90" or "Successful Dribbles %" can vary widely, and the scaling via IQR helps these metrics remain meaningful in visual comparisons.

===== FORWARDS =====

League: ArgentinaLPF

Teams (110): Atlético Tucumán, Racing Club, Belgrano, Rosario Central, Banfield, Corinthians, Seattle Sounders, Benfica, Argentinos Juniors, Ceará, Independiente, Celta de Vigo, Lanús, San Lorenzo, Unión Santa Fe, River Plate, Godoy Cruz, Barracas Central, CF Montréal, Talleres Córdoba, Defensa y Justicia, Ñublense, Lecce, Platense, Sporting Cristal, Vasco da Gama, Santos Laguna, Huracán, Necaxa, Unión La Calera, Newell's Old Boys, Gimnasia La Plata, Colón, Vélez Sarsfield, Olimpia, Mamelodi Sundowns, Boca Juniors, Instituto, Fortaleza, Genoa, Juárez, Everton, Athletico Paranaense, Tigre, Basel, Bologna, Grêmio, Estudiantes, Pachuca, Sarmiento, Al Ittihad Kalba, Fiorentina, Beroe, Racing, Cerro Largo, Querétaro, Neftchi, Macará, Sportivo Luqueño, Cusco, Coquimbo Unido, Central Córdoba SdE, Estudiantes Caseros, Rotonda, Athens Kallithea, New York City, O'Higgins, Gimnasia Jujuy, Quilmes, Santos, Botoşani, Deportivo Madryn, Arsenal, Volos NFC, Boston River, Aldosivi, Anderlecht, Inter Miami, Liverpool, Atlanta, Peñarol, Atlético Rafaela, Kifissia, Orenburg, Rosario Central Res., Almagro, PAS Giannina, Nacional Asunción, Junior, Asteras Tripolis, Unión Española, Independiente Res., Deportivo Táchira, Colón Res., Vélez Sársfield Res., Deportivo Pereira, Tristán Suárez, Atlanta United, Defensa y Justicia Res., San Lorenzo Res., Alvarado, Delfin, Nueva Chicago, Gimnasia Mendoza, Newell's Old Boys Res., Racing Club Res., Argentino Merlo, Godoy Cruz Res., Llaneros, Rampla Juniors

Teams within selected timeframe (28): Atlético Tucumán, Instituto, Belgrano, Rosario Central, Banfield, Talleres Córdoba, Lanús, Estudiantes, Argentinos Juniors, Newell's Old Boys, Independiente, Godoy Cruz, San Lorenzo, Central Córdoba SdE, River Plate, Barracas Central, Gimnasia La Plata, Huracán, Arsenal, Colón, Defensa y Justicia, Platense, Tigre, Racing Club, Vélez Sarsfield, Unión Santa Fe, Boca Juniors, Sarmiento

Total players: 333

League: LaLiga

Teams (37): Barcelona, Girona, Valencia, Sevilla, Celta de Vigo, Athletic Bilbao, Rayo Vallecano, Getafe, Deportivo Alavés, Atlético Madrid, Cádiz, Mallorca, Villarreal, Granada, Almería, Osasuna, Las Palmas, Real Madrid, Real Betis, Real Sociedad, Bayern München, Botafogo, Benfica, Real Valladolid, Bayer Leverkusen, Palmeiras, Sheffield United, Nice, Bournemouth, Cardiff City, Recreativo Granada, Valencia Mestalla, Salernitana, Leganés, Racing Ferrol, Alcorcón, Atlético Mineiro U20

Teams within selected timeframe (20): Barcelona, Girona, Valencia, Sevilla, Celta de Vigo, Athletic Bilbao, Rayo Vallecano, Getafe, Deportivo Alavés, Atlético Madrid, Cádiz, Mallorca, Villarreal, Granada, Almería, Osasuna, Las Palmas, Real Madrid, Real Betis, Real Sociedad

Total players: 182

League: LigaMX

Teams (55): Guadalajara, Cruz Azul, Pumas UNAM, Tigres UANL, Juárez, Necaxa, Querétaro, América, Club Tijuana, León, Puebla, Monterrey, Atlas, Toluca, Mazatlán, Santos Laguna, Atlético de San Luis, Pachuca, Millonarios, Talleres Córdoba, Portland Timbers, Athletico Paranaense, Cruzeiro, Fortaleza, Columbus

Crew, Corinthians, Fluminense, Barcelona, Racing Club, Pachuca U23, Juárez U23, Atlético Nacional, CSKA Moskva, Estudiantes, Independiente, Mazatlán U23, América U23, Atlético de San Luis U23, Toluca U23, Atlas U23, Santos, León U23, Real Oviedo, Lanús, Santos Laguna U23, Peñarol, Cruz Azul U23, Atlanta United, Club Tijuana U23, Necaxa U23, Vélez Sarsfield, Monterrey U23, Celaya, Tigres UANL U23, Unión Española

Teams within selected timeframe (18): Guadalajara, Cruz Azul, Pumas UNAM, Tigres UANL, Juárez, Necaxa, Querétaro, América, Club Tijuana, León, Puebla, Monterrey, Atlas, Toluca, Mazatlán, Santos Laguna, Atlético de San Luis, Pachuca

Total players: 205

League: MLS

Teams (83): Sporting KC, SJ Earthquakes, Philadelphia Union, Nashville SC, Los Angeles FC, Seattle Sounders, Cincinnati, Columbus Crew, Atlanta United, DC United, Vancouver Whitecaps, Monterrey, New England, Houston Dynamo, Orlando City, New York City, Toronto, Los Angeles Galaxy, Hellas Verona, Minnesota United, Dallas, Chicago Fire, Austin FC, Nacional, Portland Timbers, Fortaleza, Real Salt Lake, Como, Charlotte FC, New York RB, CF Montréal, Colorado Rapids, Al Fateh, Inter Miami, Al Rayyan, St. Louis City, Granada, Atlético de San Luis, Real Valladolid, Fehérvár, Flamengo, Fluminense, Vélez Sarsfield, Libertad, Cangzhou Mighty Lions, Trabzonspor, Bandırmaspor, Medellín, Platense, Lugano, América de Cali, AEK Athens, Sochi, Samsunspor, Juárez U23, Mazatlán, Junior, Hull City, Guadalajara, Banfield, Horsens, Udinese, Olimpia, San Lorenzo, Sporting Gijón, Oulu, Universidad Católica, Club Tijuana, Vasco da Gama, San Antonio, Charleston Battery, Tampa Bay Rowdies, Neftchi, Viborg, Orange County SC, Shenzhen Peng City, Larne, Gillingham, Ventura County, Las Vegas Lights, Minnesota United II, Toronto II, Orlando City B

Teams within selected timeframe (29): Sporting KC, SJ Earthquakes, Philadelphia Union, Nashville SC, Los Angeles FC, Seattle Sounders, Cincinnati, Columbus Crew, Atlanta United, DC United, Vancouver Whitecaps, New England, Houston Dynamo, Orlando City, New York City, Toronto, Los Angeles Galaxy, Charlotte FC, Minnesota United, Dallas, Chicago Fire, Austin FC, Portland Timbers, New York RB, Real Salt Lake, St. Louis City, CF Montréal, Colorado Rapids, Inter Miami

Total players: 261

League: PremierLeague

Teams (38): Bournemouth, Aston Villa, Nottingham Forest, Chelsea, Manchester United, West Ham United, Tottenham Hotspur, Newcastle United, Everton, Arsenal, Luton Town, Manchester City, Liverpool, Fulham, Crystal Palace, Brentford, Wolverhampton Wanderers, Brighton, Burnley, Sheffield United, Olympique Lyonnais, Real Betis, Nantes, Galatasaray, Southampton, Rangers, Eintracht Frankfurt, Granada, Wolverhampton Wanderers U21, Hull City, Leeds United, Sevilla, Hajduk Split, Peterborough United, Borussia Dortmund, Exeter City, Brighton U21, West Ham United U21

Teams within selected timeframe (20): Bournemouth, Aston Villa, Nottingham Forest, Chelsea, Manchester United, West Ham United, Tottenham Hotspur, Newcastle United, Everton, Arsenal, Luton Town, Manchester City, Liverpool, Fulham, Crystal Palace, Brentford, Wolverhampton Wanderers, Brighton, Burnley,

Sheffield United
Total players: 180

League: SerieA

Teams (35): Frosinone, Genoa, Sassuolo, Torino, Hellas Verona, Salernitana, Bologna, Lazio, Napoli, Roma, Internazionale, Atalanta, Udinese, Monza, Milan, Empoli, Lecce, Cagliari, Juventus, Fiorentina, Como, Olympiacos Piraeus, Hajduk Split, Orlando City, Mallorca, Ankaragücü, Racing Santander, Malmö FF, Rijeka, Norwich City, Bari, Montpellier, Nottingham Forest, Almería, Everton
Teams within selected timeframe (20): Frosinone, Genoa, Sassuolo, Torino, Hellas Verona, Salernitana, Bologna, Lazio, Napoli, Roma, Internazionale, Atalanta, Udinese, Monza, Milan, Empoli, Lecce, Cagliari, Juventus, Fiorentina
Total players: 170

===== MIDFIELDERS =====

League: ArgentinaLPF

Teams (69): Belgrano, San Lorenzo, Instituto, Johor Darul Ta'zim, Unión Santa Fe, Monterrey, Atlético Tucumán, Independiente, Newell's Old Boys, Estudiantes, Racing Club, Platense, Tigre, Lanús, Medellín, Botafogo SP, Argentinos Juniors, Banfield, Vélez Sarsfield, Riga FC, Barracas Central, Palmeiras, Olympiacos Piraeus, Boca Juniors, Huracán, Defensa y Justicia, Racing, Toluca, Sarmiento, Porto, General Caballero JLM, Gimnasia La Plata, Unión La Calera, Independiente del Valle, Rosario Central, Colón, Talleres Córdoba, River Plate, Liverpool, Panetolikos FC, Atlético Mineiro, Olimpia, Leganés, Central Córdoba SdE, Sport Recife, Tacuary, Salernitana, O'Higgins, Godoy Cruz, New York City, Cobreloa, Volos NFC, Udinese, Nacional, Club Atlético Mitre, Huachipato, Cerro Largo, Peñarol, Racing Club Res., Independiente Res., Quilmes, Unión Española, Newell's Old Boys Res., La Serena, Carlos Mannucci, Lanús Res., Arsenal, Ben Hur, San Martín San Juan
Teams within selected timeframe (28): Belgrano, Barracas Central, Instituto, San Lorenzo, Central Córdoba SdE, Estudiantes, Platense, Independiente, Newell's Old Boys, Unión Santa Fe, Banfield, Racing Club, Tigre, Atlético Tucumán, River Plate, Lanús, Colón, Argentinos Juniors, Vélez Sarsfield, Arsenal, Huracán, Boca Juniors, Defensa y Justicia, Sarmiento, Gimnasia La Plata, Rosario Central, Talleres Córdoba, Godoy Cruz
Total players: 167

League: LaLiga

Teams (21): Valencia, Getafe, Girona, Las Palmas, Cádiz, Real Madrid, Real Sociedad, Villarreal, Atlético Madrid, Granada, Celta de Vigo, Mallorca, Sevilla, Osasuna, Rayo Vallecano, Barcelona, Almería, Celta de Vigo B, Vojvodina, Sevilla Atlético, Brighton
Teams within selected timeframe (17): Valencia, Getafe, Girona, Las Palmas, Cádiz, Real Madrid, Real Sociedad, Villarreal, Atlético Madrid, Granada, Celta de Vigo, Mallorca, Sevilla, Osasuna, Rayo Vallecano, Barcelona, Almería
Total players: 75

League: LigaMX

Teams (29): América, Tigres UANL, Guadalajara, Puebla, Cruz Azul, Pumas UNAM, Querétaro, Santos Laguna, Club Tijuana, Pachuca, Mazatlán, Necaxa, Monterrey, Atlas, Toluca, Juárez, León, Cruzeiro, Everton, Atlético de San Luis, Godoy Cruz, Nacional, Juárez U23, Independiente, Monterrey U18, Pachuca U23, Universidad Guadalajara, Puebla U23, América U23
Teams within selected timeframe (18): América, Tigres UANL, Guadalajara, Puebla, Cruz Azul, Pumas UNAM, Querétaro, Santos Laguna, Club Tijuana, Pachuca, Mazatlán, Necaxa, Monterrey, Atlas, Toluca, Juárez, León, Atlético de San Luis
Total players: 89

League: MLS

Teams (44): Columbus Crew, Houston Dynamo, Sporting KC, Los Angeles FC, SJ Earthquakes, Colorado Rapids, Cincinnati, DC United, Charlotte FC, New England, Al Hazem, Portland Timbers, Austin FC, St. Louis City, Real Salt Lake, CF Montréal, Los Angeles Galaxy, Vancouver Whitecaps, Philadelphia Union, New York RB, Nashville SC, Dallas, Atlanta United, Toronto, Chicago Fire, Inter Miami, Barcelona, Gaziantep, Middlesbrough, Toulouse, Rangers, New York City, Maccabi Haifa, Seattle Sounders, Birmingham Legion, Tampa Bay Rowdies, San Antonio, Vitória Guimarães, PEC Zwolle, North Texas, Las Vegas Lights, Portland Timbers II, Stabæk, Chicago Fire II
Teams within selected timeframe (26): Columbus Crew, Houston Dynamo, Sporting KC, Los Angeles FC, SJ Earthquakes, Colorado Rapids, Cincinnati, DC United, Charlotte FC, New England, Portland Timbers, Austin FC, St. Louis City, Real Salt Lake, CF Montréal, Los Angeles Galaxy, Vancouver Whitecaps, Philadelphia Union, New York RB, Nashville SC, Dallas, Toronto, Inter Miami, New York City, Minnesota United, Chicago Fire
Total players: 109

League: PremierLeague

Teams (19): Newcastle United, Arsenal, Brighton, Aston Villa, Everton, Burnley, Brentford, Wolverhampton Wanderers, Sheffield United, Liverpool, Crystal Palace, Manchester United, Olympique Lyonnais, Luton Town, Stuttgart, Bournemouth, Nottingham Forest, Blackburn Rovers, Napoli
Teams within selected timeframe (15): Newcastle United, Arsenal, Brighton, Aston Villa, Everton, Burnley, Brentford, Wolverhampton Wanderers, Sheffield United, Liverpool, Crystal Palace, Manchester United, Nottingham Forest, Luton Town, Bournemouth
Total players: 65

League: SerieA

Teams (25): Roma, Napoli, Udinese, Monza, Genoa, Juventus, Lecce, Atalanta, Frosinone, Internazionale, Cagliari, Bologna, Empoli, Hellas Verona, Torino, Lazio, Salernitana, Milan, Granada, Sassuolo, Fenerbahçe, Palermo, RB Leipzig, Galatasaray, Roma U19
Teams within selected timeframe (19): Roma, Napoli, Udinese, Monza, Genoa, Juventus, Lecce, Atalanta, Frosinone, Internazionale, Cagliari, Bologna, Empoli,

Hellas Verona, Torino, Lazio, Salernitana, Milan, Sassuolo
Total players: 100

===== DEFENDERS =====

League: ArgentinaLPF

Teams (94): Colón, Godoy Cruz, Instituto, Talleres Córdoba, Atlético Tucumán, San Lorenzo, Rosario Central, Gimnasia La Plata, Argentinos Juniors, Belgrano, Huracán, Sarmiento, Junior, Lanús, Cerro Porteño, Boca Juniors, Independiente, Platense, Banfield, San Martín Mendoza, Arsenal, Unión Santa Fe, Udinese, Universidad de Chile, Newell's Old Boys, Defensa y Justicia, River Plate, Athletico Paranaense, Barracas Central, Racing Club, Cruz Azul, Fortaleza, Deportivo Madryn, Vélez Sarsfield, Estudiantes, Peñarol, Santos Laguna, Olympiacos Piraeus, Nacional Asunción, Zrinjski, Central Córdoba SdE, Unión La Calera, Universidad Católica, Tigre, Vasco da Gama, Union Saint-Gilloise, Anderlecht, Werder Bremen, O'Higgins, Criciúma, Salernitana, Deportes Iquique, Pafos, Cienciano, Brighton, Santa Fe, Melgar, Sport Boys, Pachuca, San Martín San Juan, Club Atlético Mitre, Libertad, Inter Miami, U Craiova 1948, Talleres Remedios, Delfin, San Miguel, Aucas, América de Cali, Audax Italiano, Temperley, Sporting Cristal, Gimnasia Mendoza, Deportivo Maipú, San Martín Tucumán, Colo Colo, Patronato, Gimnasia Jujuy, Gimnasia La Plata Res., Águilas Doradas, Argentinos Juniors Res., Atromitos, Guaraní, Defensa y Justicia Res., Atlanta, Racing Club Res., Belgrano Res., Botafogo, Los Angeles Galaxy, Arsenal Res., Estudiantes Res, Talleres de Córdoba U18, Lanús Res., Unión Santa Fe Res.
Teams within selected timeframe (28): Colón, Godoy Cruz, Instituto, Talleres Córdoba, Atlético Tucumán, San Lorenzo, Rosario Central, Gimnasia La Plata, Barracas Central, Belgrano, Huracán, Sarmiento, Central Córdoba SdE, Tigre, Independiente, Lanús, Arsenal, Platense, Banfield, Unión Santa Fe, Vélez Sarsfield, Newell's Old Boys, Defensa y Justicia, River Plate, Estudiantes, Racing Club, Boca Juniors, Argentinos Juniors
Total players: 286

League: LaLiga

Teams (38): Las Palmas, Granada, Valencia, Girona, Celta de Vigo, Barcelona, Athletic Bilbao, Rayo Vallecano, Deportivo Alavés, Atlético Madrid, Real Madrid, Osasuna, Getafe, Almería, Cádiz, Real Sociedad, Sevilla, Mallorca, Real Betis, Villarreal, Reims, Botafogo, Villarreal B, Celta de Vigo B, Gent, Albacete, Real Sociedad B, Milan, Mirandés, Al Ittihad, Barcelona B, Elche, Shanghai Shenhua, Al Shabab, Getafe B, Betis Deportivo, Fenerbahçe, Spartak Moskva
Teams within selected timeframe (20): Las Palmas, Granada, Valencia, Girona, Celta de Vigo, Barcelona, Athletic Bilbao, Rayo Vallecano, Deportivo Alavés, Atlético Madrid, Real Madrid, Osasuna, Getafe, Almería, Cádiz, Real Sociedad, Sevilla, Mallorca, Real Betis, Villarreal
Total players: 178

League: LigaMX

Teams (36): Atlético de San Luis, Tigres UANL, Necaxa, Pumas UNAM, Mazatlán,

León, Guadalajara, Atlas, Querétaro, Puebla, Cruz Azul, Monterrey, Pachuca, América, Toluca, Club Tijuana, Juárez, Santos Laguna, Los Angeles FC, Corinthians, América de Cali, Peñarol, Real Oviedo, Juárez U23, Tlaxcala, Metropolitanos, Querétaro U23, Venados, Wanderers, Tapatío, Puebla U23, Toluca U23, Cruz Azul U23, Forge, Club Tijuana U23, El Paso Locomotive
Teams within selected timeframe (18): Atlético de San Luis, Tigres UANL, Necaxa, Pumas UNAM, Mazatlán, León, Guadalajara, Atlas, Querétaro, Puebla, Cruz Azul, Monterrey, Pachuca, América, Toluca, Club Tijuana, Juárez, Santos Laguna
Total players: 180

League: MLS

Teams (66): Columbus Crew, Seattle Sounders, New England, Orlando City, Cruzeiro, Atlanta United, Philadelphia Union, SJ Earthquakes, Vancouver Whitecaps, Nashville SC, New York RB, Corinthians, Colorado Rapids, Real Salt Lake, Minnesota United, Los Angeles FC, Austin FC, Portland Timbers, Dallas, St. Louis City, Sporting KC, Charlotte FC, Houston Dynamo, Cincinnati, Toronto, Chicago Fire, CF Montréal, Inter Miami, New York City, Tigres UANL, Talleres Córdoba, Fluminense, Vélez Sarsfield, Bahia, Ajaccio, Universitatea Craiova, DC United, Eupen, Motherwell, Los Angeles Galaxy, Heracles, Poole Town, Olimpia, Häcken, Pachuca, Crvena Zvezda, Haka, PAS Giannina, FC Košice, Columbus Crew 2, Rhode Island, Valour FC, Triestina, Kortrijk, Oakland Roots, Atlético Ottawa, Portland Timbers II, Deportivo Saprissa, Atlanta United II, Minnesota United II, SJ Earthquakes II, Birmingham Legion, Barcelona B, Inter Miami II, Toronto II, Zlín

Teams within selected timeframe (29): Columbus Crew, Seattle Sounders, New England, Orlando City, Cincinnati, Atlanta United, Philadelphia Union, SJ Earthquakes, Vancouver Whitecaps, Nashville SC, New York RB, Los Angeles FC, Colorado Rapids, Real Salt Lake, Minnesota United, Austin FC, Portland Timbers, Dallas, St. Louis City, Sporting KC, Charlotte FC, Houston Dynamo, Chicago Fire, CF Montréal, Inter Miami, New York City, Toronto, Los Angeles Galaxy, DC United

Total players: 254

League: PremierLeague

Teams (28): Wolverhampton Wanderers, Arsenal, Everton, Crystal Palace, Bournemouth, Fulham, Liverpool, Manchester United, West Ham United, Tottenham Hotspur, Aston Villa, Newcastle United, Brighton, Luton Town, Nottingham Forest, Sheffield United, Manchester City, Brentford, Chelsea, Burnley, Middlesbrough, Galatasaray, Leeds United, Beşiktaş, Borussia Dortmund, Bayern München, Brighton U21, Monaco

Teams within selected timeframe (20): Wolverhampton Wanderers, Arsenal, Everton, Crystal Palace, Bournemouth, Fulham, Liverpool, Manchester United, West Ham United, Tottenham Hotspur, Aston Villa, Newcastle United, Brighton, Luton Town, Nottingham Forest, Sheffield United, Manchester City, Brentford, Chelsea, Burnley

Total players: 172

League: SerieA

Teams (31): Empoli, Lecce, Udinese, Napoli, Juventus, Lazio, Cagliari, Torino, Roma, Atalanta, Milan, Frosinone, Salernitana, Monza, Sassuolo, Fiorentina, Bologna, Hellas Verona, Internazionale, Genoa, Tottenham Hotspur, Como, Flamengo, Salzburg, Santos Laguna, Schalke 04, Montpellier, Slavia Praha, Fatih Karagümrük, Servette, Genoa U19

Teams within selected timeframe (20): Empoli, Lecce, Udinese, Napoli, Juventus, Lazio, Cagliari, Torino, Roma, Atalanta, Milan, Frosinone, Salernitana, Monza, Sassuolo, Fiorentina, Bologna, Hellas Verona, Internazionale, Genoa

Total players: 182

===== GOALKEEPERS =====

League: ArgentinaLPF

Teams (37): Racing Club, Argentinos Juniors, Independiente, Vélez Sarsfield, Talleres Córdoba, River Plate, Newell's Old Boys, Rosario Central, Panetolikos FC, Belgrano, Atlético Tucumán, Municipal, Granada, Bolívar, Boca Juniors, Cerro Porteño, Instituto, Lanús, Estudiantes, Barracas Central, Huracán, Necaxa, Gimnasia La Plata, Aldosivi, San Lorenzo, Aucas, Unión Santa Fe, Atlético Nacional, Defensa y Justicia, Olimpo, Unión La Calera, Tigre, Tacuary, Arsenal, Deportes Iquique, Colón, Ferro Carril Oeste

Teams within selected timeframe (28): Banfield, Godoy Cruz, Independiente, Atlético Tucumán, Talleres Córdoba, River Plate, Newell's Old Boys, Rosario Central, Huracán, Belgrano, Gimnasia La Plata, Platense, Arsenal, Racing Club, San Lorenzo, Colón, Barracas Central, Boca Juniors, Argentinos Juniors, Instituto, Lanús, Central Córdoba SdE, Unión Santa Fe, Sarmiento, Defensa y Justicia, Vélez Sarsfield, Tigre, Estudiantes

Total players: 50

League: LaLiga

Teams (23): Getafe, Girona, Atlético Madrid, Rayo Vallecano, Valencia, Real Sociedad, Las Palmas, Villarreal, Mallorca, Athletic Bilbao, Deportivo Alavés, Almería, Osasuna, Real Betis, Celta de Vigo, Sevilla, Real Madrid, Real Valladolid, Barcelona, Cádiz, Betis Deportivo, Granada, Al Hilal

Teams within selected timeframe (20): Getafe, Girona, Atlético Madrid, Rayo Vallecano, Valencia, Real Sociedad, Las Palmas, Villarreal, Mallorca, Athletic Bilbao, Deportivo Alavés, Almería, Osasuna, Real Betis, Celta de Vigo, Sevilla, Real Madrid, Granada, Barcelona, Cádiz

Total players: 40

League: LigaMX

Teams (20): Pumas UNAM, América, Monterrey, León, Toluca, Puebla, Atlas, Pachuca, Tigres UANL, Mazatlán, Atlético de San Luis, Club Tijuana, Necaxa, Santos Laguna, Cruz Azul, Guadalajara, Querétaro, Juárez, Audax Italiano, El Paso Locomotive

Teams within selected timeframe (18): Pumas UNAM, América, Monterrey, León, Toluca, Puebla, Atlas, Pachuca, Tigres UANL, Mazatlán, Atlético de San Luis, Club Tijuana, Necaxa, Santos Laguna, Cruz Azul, Guadalajara, Querétaro, Juárez

Total players: 36

League: MLS

Teams (35): Houston Dynamo, Columbus Crew, Cincinnati, New York RB, Seattle Sounders, St. Louis City, Vancouver Whitecaps, Austin FC, Nashville SC, Orlando City, Inter Miami, Dallas, CF Montréal, Real Salt Lake, Atlanta United, Philadelphia Union, Minnesota United, Chicago Fire, Charlotte FC, Los Angeles Galaxy, DC United, New York City, SJ Earthquakes, Chelsea, Colorado Rapids, Sporting KC, Toronto, Portland Timbers, San Antonio, Sarpsborg 08, New England, Cesena, Vitesse, Los Angeles FC, Toronto II

Teams within selected timeframe (29): Houston Dynamo, Columbus Crew, Cincinnati, New York RB, Seattle Sounders, St. Louis City, Vancouver Whitecaps, Austin FC, Nashville SC, Orlando City, Inter Miami, Dallas, CF Montréal, Real Salt Lake, Atlanta United, Philadelphia Union, Minnesota United, Chicago Fire, Charlotte FC, Los Angeles FC, DC United, New York City, SJ Earthquakes, New England, Colorado Rapids, Sporting KC, Toronto, Portland Timbers, Los Angeles Galaxy

Total players: 62

League: PremierLeague

Teams (19): Tottenham Hotspur, Fulham, Manchester United, Everton, Luton Town, Brentford, Aston Villa, Wolverhampton Wanderers, Bournemouth, Arsenal, Manchester City, West Ham United, Liverpool, Burnley, Newcastle United, Chelsea, Brighton, Crystal Palace, Nottingham Forest

Teams within selected timeframe (19): Tottenham Hotspur, Fulham, Manchester United, Everton, Luton Town, Brentford, Aston Villa, Wolverhampton Wanderers, Bournemouth, Arsenal, Manchester City, West Ham United, Liverpool, Burnley, Newcastle United, Chelsea, Brighton, Crystal Palace, Nottingham Forest

Total players: 36

League: SerieA

Teams (20): Lecce, Hellas Verona, Genoa, Torino, Sassuolo, Juventus, Internazionale, Fiorentina, Bologna, Monza, Cagliari, Frosinone, Napoli, Lazio, Milan, Atalanta, Roma, Empoli, Udinese, Salernitana

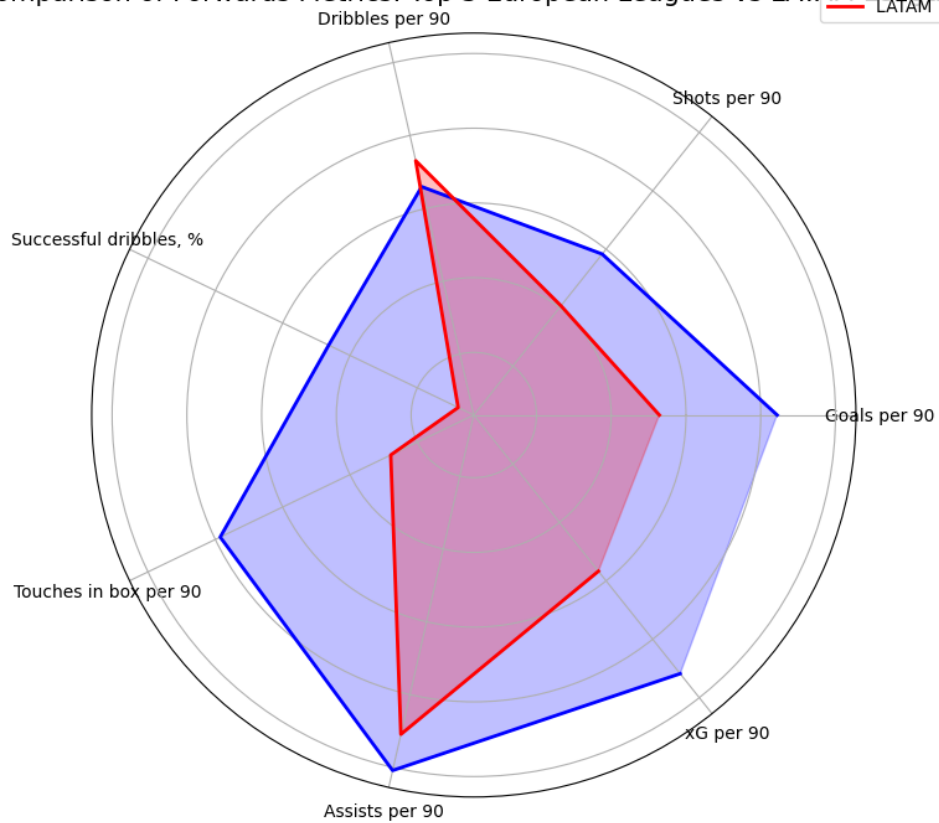
Teams within selected timeframe (20): Lecce, Hellas Verona, Genoa, Torino, Sassuolo, Juventus, Internazionale, Fiorentina, Bologna, Monza, Cagliari, Frosinone, Napoli, Lazio, Milan, Atalanta, Roma, Empoli, Udinese, Salernitana

Total players: 44

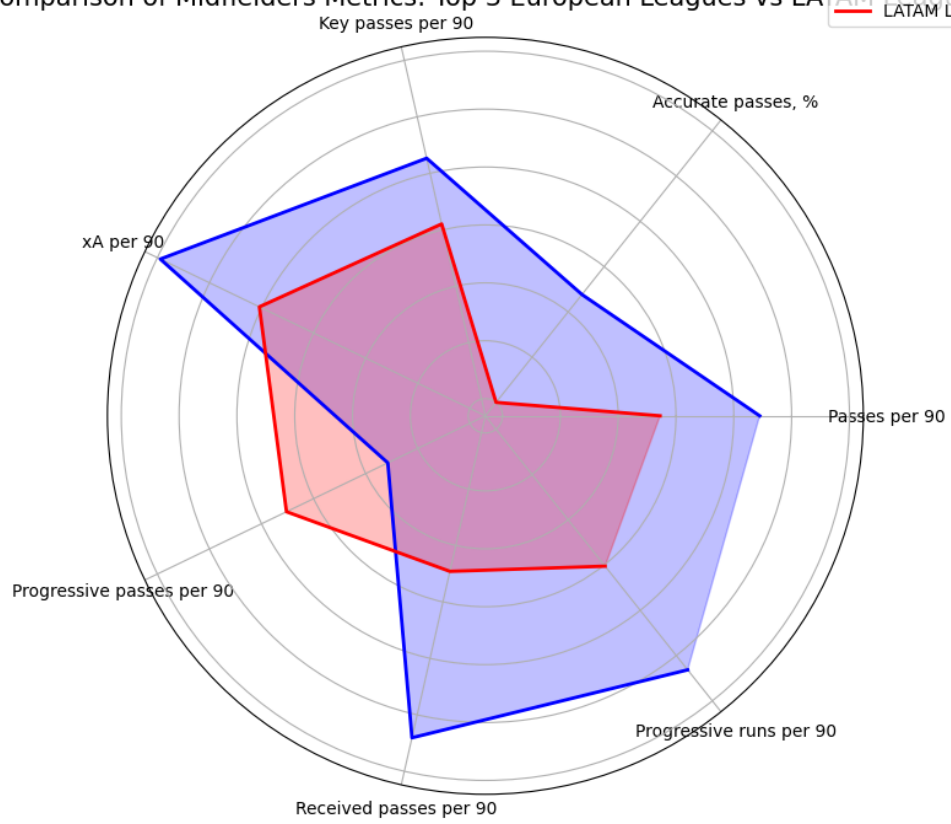
3.3 Creation of the Spider Plot

A spider plot is a graphical method of displaying multivariate data in the form of a two-dimensional chart of three or more quantitative variables represented on axes starting from the same point. Reference: https://en.wikipedia.org/wiki/Radar_chart By this, we will be able to identify how the groups of Leagues are performing in each position group.

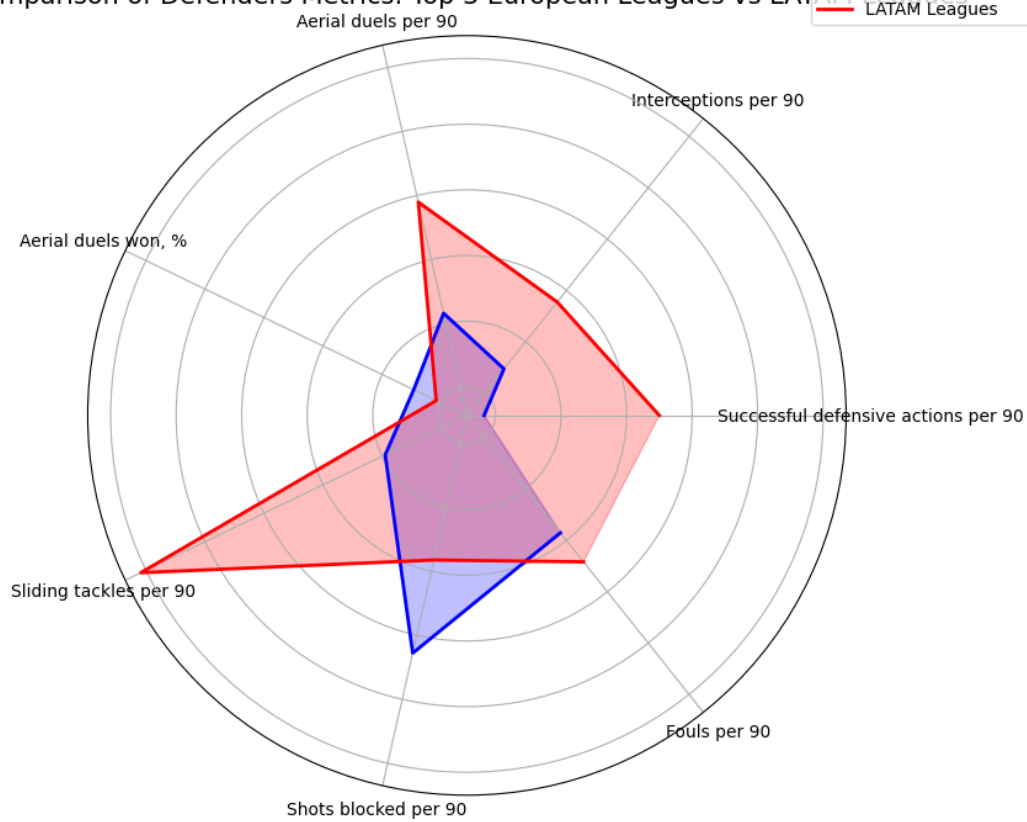
Comparison of Forwards Metrics: Top 3 European Leagues vs LATAM Leagues



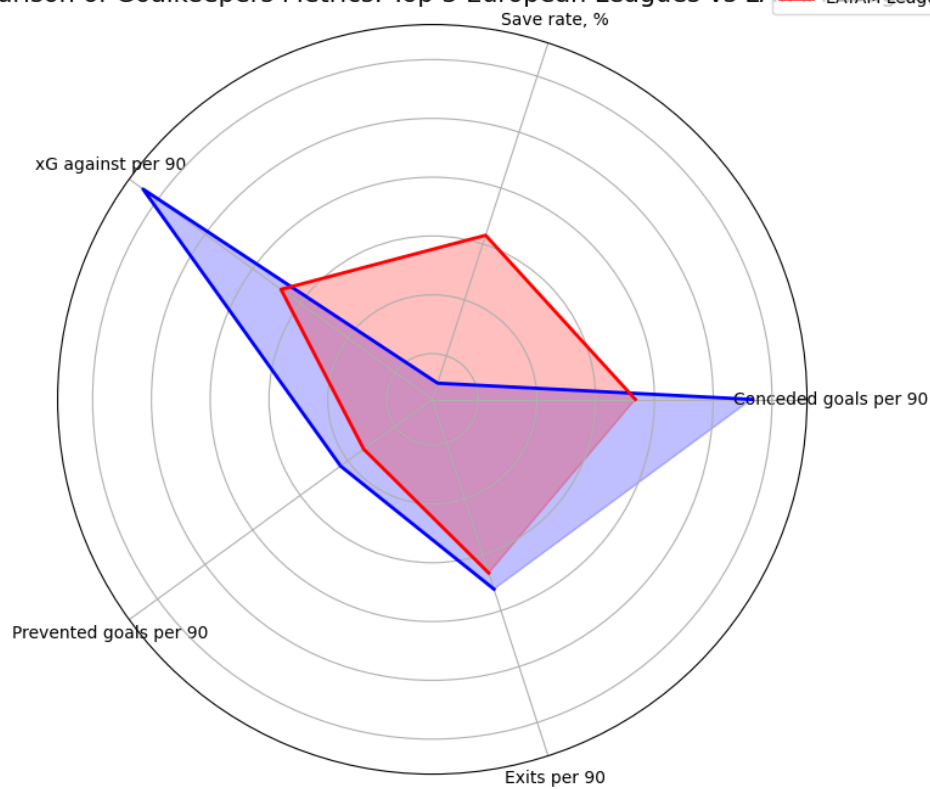
Comparison of Midfielders Metrics: Top 3 European Leagues vs LATAM Leagues



Comparison of Defenders Metrics: Top 3 European Leagues vs LATAM Leagues



Comparison of Goalkeepers Metrics: Top 3 European Leagues vs LATAM Leagues



3.4 Players that contribute the most to each Position.

Top contributors for Forwards:

	Full name	Team	\
356	Sergio Gómez Martín	Manchester City	
43	Vinícius José Paixão de Oliveira Júnior	Real Madrid	
252	Jérémy Doku	Manchester City	
336	Manor Solomon	Tottenham Hotspur	
296	Timo Werner	Tottenham Hotspur	
520	Marcelo Javier Correa	Estudiantes	
821	Emmanuel Iwe	Minnesota United II	
824	Ronald Donkor	New York RB	
575	Juan Camilo Hernández Suárez	Columbus Crew	
572	Denis Bouanga	Los Angeles FC	

	Team within selected timeframe	Primary position	Market value	\
356	Manchester City	LAMF	\$10,000,000	
43	Real Madrid	CF	\$180,000,000	
252	Manchester City	LAMF	\$65,000,000	

336	Tottenham Hotspur	LAMF	\$13,000,000
296	Tottenham Hotspur	LAMF	\$17,000,000
520	Santos Laguna	CF	\$1,500,000
821	Minnesota United	LW	\$0
824	New York RB	LW	\$0
575	Columbus Crew	CF	\$10,000,000
572	Los Angeles FC	LWF	\$6,000,000

	Contribution Score	Competition	League \
356	1.703355	Premier League	PremierLeague
43	1.584309	LaLiga	LaLiga
252	1.577975	Premier League	PremierLeague
336	1.569641	Premier League	PremierLeague
296	1.354659	Premier League	PremierLeague
520	1.880927	Copa de la Liga Profesional	LigaMX
821	1.608465	MLS Next Pro	MLS
824	1.546454	MLS	MLS
575	1.476523	MLS	MLS
572	1.434228	MLS	MLS

	Group
356	Top European Leagues
43	Top European Leagues
252	Top European Leagues
336	Top European Leagues
296	Top European Leagues
520	LATAM Leagues
821	LATAM Leagues
824	LATAM Leagues
575	LATAM Leagues
572	LATAM Leagues

Top contributors for Midfielders:

	Full name	Team \
33	Luka Modrić	Real Madrid
77	Pascal Groß	Brighton
102	Harvey Elliott	Liverpool
23	Rodrigo Javier De Paul	Atlético Madrid
358	Hakan Çalhanoğlu	Internazionale
140	Álvaro Fidalgo Fernández	América
233	Héctor Miguel Herrera López	Houston Dynamo
168	Richard Rafael Sánchez Guerrero	América
270	Gastón Brugman Duarte	Los Angeles Galaxy
194	Omar Andrés Fernández Frasca	Everton

	Team within selected timeframe	Primary position	Market value	\
33	Real Madrid	RCMF3	\$6,000,000	
77	Brighton	LCMF	\$8,000,000	
102	Liverpool	RCMF3	\$35,000,000	
23	Atlético Madrid	RCMF3	\$30,000,000	
358	Internazionale	DMF	\$45,000,000	
140	América	LCMF	\$8,000,000	
233	Houston Dynamo	LCMF	\$2,800,000	
168	América	RCMF	\$6,000,000	
270	Los Angeles Galaxy	LCMF	\$2,000,000	
194	León	RCMF3	\$1,000,000	

	Contribution Score	Competition	League	Group
33	2.140335	LaLiga	LaLiga	Top European Leagues
77	1.909100	Premier League	PremierLeague	Top European Leagues
102	1.747426	Premier League	PremierLeague	Top European Leagues
23	1.605814	La Liga	LaLiga	Top European Leagues
358	1.437930	Serie A	SerieA	Top European Leagues
140	1.866876	Liga MX	LigaMX	LATAM Leagues
233	1.713833	MLS	MLS	LATAM Leagues
168	1.520374	Liga MX	LigaMX	LATAM Leagues
270	1.242282	MLS	MLS	LATAM Leagues
194	1.215859	Primera División	LigaMX	LATAM Leagues

Top contributors for Defenders:

	Full name	Team	\
946	Ahmed Touba	Lecce	
342	James Hill	Bournemouth	
963	Pietro Comuzzo	Fiorentina	
160	Mamadou Mbaye	Cádiz	
949	Jérôme Boateng	Salernitana	
1246	Elías Agustín Ramirez	Club Atlético Mitre	
1244	Álvaro Agustín Lagos	Atlético Tucumán	
1241	Pablo Ezequiel Aranda	Lanús Res.	
1219	Leonel Di Plácido	Botafofo	
778	Ousman Jabang	CF Montréal	

	Team within selected timeframe	Primary position	Market value	\
946	Lecce	LCB	\$1,600,000	
342	Bournemouth	LB	\$2,000,000	
963	Fiorentina	LCB	\$0	
160	Cádiz	LCB	\$400,000	
949	Salernitana	CB	\$400,000	
1246	Gimnasia La Plata	RWB	\$0	
1244	Atlético Tucumán	RB	\$175,000	

1241	Lanús	RB	\$0
1219	Lanús	RB	\$500,000
778	CF Montréal	RCB3	\$0

	Contribution Score	Competition	League \
946	1.446647	Serie A	SerieA
342	1.406109	Premier League	PremierLeague
963	1.399121	Serie A	SerieA
160	1.239974	LaLiga	LaLiga
949	1.235491	Serie A	SerieA
1246	2.507106	Primera Nacional	ArgentinaLPF
1244	2.169053	Liga Profesional de Fútbol	ArgentinaLPF
1241	2.121551	Reserve League	ArgentinaLPF
1219	1.862870	Serie A	ArgentinaLPF
778	1.627827	MLS	MLS

	Group
946	Top European Leagues
342	Top European Leagues
963	Top European Leagues
160	Top European Leagues
949	Top European Leagues
1246	LATAM Leagues
1244	LATAM Leagues
1241	LATAM Leagues
1219	LATAM Leagues
778	LATAM Leagues

Top contributors for Goalkeepers:

	Full name	Team \
216	Simone Perilli	Hellas Verona
38	Jaume Doménech Sánchez	Valencia
75	Loris Karius	Newcastle United
65	Arijanet Murić	Burnley
70	Robin Olsen	Aston Villa
167	James Pantemis	CF Montréal
170	Andrew Tarbell	Houston Dynamo
255	Cristopher Javier Fiermarin Forlán	Defensa y Justicia
171	Thomas Hasal	Vancouver Whitecaps
107	Héctor Hipólito Holguín Pérez	Santos Laguna

	Team within selected timeframe	Primary position	Market value \
216	Hellas Verona	GK	\$200,000
38	Valencia	GK	\$800,000
75	Newcastle United	GK	\$1,000,000

65	Burnley	GK	\$7,000,000
70	Aston Villa	GK	\$1,500,000
167	CF Montréal	GK	\$400,000
170	Houston Dynamo	GK	\$150,000
255	Defensa y Justicia	GK	\$300,000
171	Vancouver Whitecaps	GK	\$500,000
107	Santos Laguna	GK	\$400,000

	Contribution Score	Competition	League \
216	2.398890	Serie A	SerieA
38	1.823741	La Liga	LaLiga
75	1.768737	Premier League	PremierLeague
65	1.556083	Premier League	PremierLeague
70	1.129541	Premier League	PremierLeague
167	1.379058	MLS	MLS
170	1.037262	MLS	MLS
255	1.002228	Liga Profesional de Fútbol	ArgentinaLPF
171	0.957285	MLS	MLS
107	0.915153	Liga MX	LigaMX

	Group
216	Top European Leagues
38	Top European Leagues
75	Top European Leagues
65	Top European Leagues
70	Top European Leagues
167	LATAM Leagues
170	LATAM Leagues
255	LATAM Leagues
171	LATAM Leagues
107	LATAM Leagues

3.5 Considerations

Some players may have a high contribution score but we must take into account minutes / matches played, another approach could be to filter only players who have played over certain amount of matches and/or minutes. Another important consideration is that at first the Min Max scaler was used to standardize the variables, but then it was changed to Robust Scaler.

4 Conclusions

To conclude the analysis, we can observe in general that Top 3 Europe leagues tend to have higher performance in almost every aspect of the game compared to LATAM leagues. This is evident in the aggregated metrics, the spider charts, and the top contributors' analysis.

4.1 Highlights by Position Group - Personal perspective

4.1.1 Forwards:

- European forwards tend to excel in metrics related to offensive effectiveness, especially in shots per 90, goals per 90, and touches in the box per 90, reflecting a more aggressive attacking approach.
- LATAM forwards show strengths in successful dribbles percentage, indicating technical proficiency in one-on-one situations. However, they lag in metrics tied directly to goal-scoring efficiency, such as xG (expected goals) and shots per 90.

4.1.2 Midfielders:

- European midfielders outperform in key passing metrics, including key passes per 90 and passes per 90, suggesting a structured playmaking style with high passing accuracy.
- LATAM midfielders demonstrate relatively high progressive passes, highlighting creative contributions despite fewer overall passes, which may imply a more direct style with lower possession but impactful plays.

4.1.3 Defenders:

- LATAM defenders show higher averages in aerial duels per 90, Sliding tackles and successful defensive actions, emphasizing a physical style with more focus on defensive actions. But also high proportion of Fouls.
- European defenders excel in intercepting and blocking metrics, showing a more controlled and tactical approach, which aligns with the structured defensive systems often seen in top European leagues.

4.1.4 Goalkeepers:

- European goalkeepers lead in metrics related Prevented goals and Exits, but also have a higher Conceded goals and xG against (Expected goals against).
- LATAM goalkeepers, excel in Save rate %, even having conceded fewer goals.

4.1.5 Overall Summary:

- European leagues generally focus on metrics that reflect structured, possession-based play, with high performance in passing, goal-scoring efficiency, and defensive positioning.
- LATAM leagues display a more direct and physically engaging style, with strengths in dribbling, aerial duels, and creative assists, though they may be less efficient in metrics that benefit from structured tactics or defensive depth.

4.2 What's next

1. A lot of different configurations in the analysis can be made, particularly with the selection of main variables and the scaler method.
2. Further and deeper analysis must be made in regard to data quality, since observations may still have issues to resolve.