Data Analysis Project Submission Report

Project Title: Performance Analysis of Argentina's Squad – FIFA World Cup 2022

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Course: Fundamental Data Analysis

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Abstract

This project presents a detailed performance analysis of Argentina's national football team during the 2022 FIFA World Cup. The primary goal was to evaluate individual player contributions using metrics such as goals, assists, defensive actions, and duel success rates. Microsoft Excel was used for data cleaning, calculated field generation, PivotTable analysis, and dashboard creation. The final output is an interactive dashboard that highlights top performers, positional strengths, and club-level contributions—offering insights into tactical efficiency and squad depth.

Objectives

- Clean and structure the raw player performance data
- Create calculated fields for offensive and defensive scores
- Build PivotTables to summarize key metrics
- Design interactive charts and slicers for dynamic exploration
- Identify top performers and positional trends

Scope of the Project

- Focused exclusively on Argentina's squad data from the 2022 World Cup
- Analysis limited to Excel-based tools (no external programming)
- No predictive modeling or match-level breakdowns
- Dashboard built within a single Excel workbook

Tools & Technologies Used

Tool/Technology	Purpose
Microsoft Excel	Data cleaning, analysis, and visualization
PivotTables	Summarizing player metrics
Conditional Formatting	Highlighting top performers and trends
Charts & Slicers	Interactive dashboard design

Data Cleaning & Preparation

- Verified numeric formats for metrics like goals, assists, and duels
- Added calculated fields:
    - **Player Age** using =DATEDIF(DOB,TODAY(),"Y")
    - **Total Contributions** = Goals + Assists + Dribbles + Interceptions + Tackles
    - **Offensive Score** = Weighted sum of Goals, Assists, Dribbles
    - **Defensive Score** = Weighted sum of Interceptions, Tackles, Duels Won
- Removed rows with zero appearances to focus on active contributors

Dashboard Design Strategy

- Layout includes slicers for Position, Club, and Age Range
- Visuals include:
    - Bar chart for Top Scorers

    - Radar chart comparing Messi, Alvarez, Di Maria
    - Stacked column chart for positional scores
    - Pie chart for club-level appearances
- Conditional formatting used to highlight top 5 duel winners and goal scorers

Questions & Solutions

Q1: Who were the top 5 goal scorers?

- *Analysis*: Sorted PivotTable by Goals Scored
- *Solution*: Messi (7), Alvarez (4), Di Maria (1), Fernandez (1), Mac Allister (1)

Q2: Which position had the highest average defensive score?

- *Analysis*: PivotTable grouped by Position, averaged Defensive Score
- *Solution*: Midfielders showed the highest average due to balanced contributions

Q3: Which club contributed the most appearances?

- *Analysis*: PivotTable grouped by Club, summed Appearances
- *Solution*: Atletico Madrid and Benfica led with multiple players

Q4: Who had the highest duel win rate?

- *Analysis*: Calculated field = Duels Won / Appearances
- *Solution*: Alejandro Gomez and Enzo Fernandez had standout rates

Q5: Which players were most balanced in offense and defense?

- *Analysis*: Used conditional formatting with formula =AND(OffensiveScore>7, DefensiveScore>7)
- *Solution*: Enzo Fernandez and Di Maria emerged as well-rounded performers

Challenges Faced & Solutions

Challenge	Solution
Missing values for some metrics	Replaced with zeros or excluded from calculations
Choosing appropriate chart types	Experimented with radar, stacked columns, and bar charts
Structuring data for PivotTables	Used Excel Table format and rearranged columns

Outcome

The dashboard provides a clear view of Argentina’s squad strengths, highlighting key contributors and tactical balance. It enables quick filtering by position or club and supports strategic insights for coaching or scouting. Skills enhanced include calculated field creation, conditional formatting, and dashboard layout design.

Screenshots of Final Output

Position	(All)
Row Labels	**Sum of Goals Scored**
Lionel Messi	7
Julian Alvarez	4
Nahuel Molina	1
Angel Di Maria	1
Alexis Mac Allister	1
Enzo Fernandez	1
Grand Total	**15**

Row Labels	Average of Goals Scored	Average of Defensive scores	Average of Offensive scores
DF	0.11	6.45	0.76
FW	1.71	3.62	4.96
GK	0	0.22	0.00
MF	0.29	10.74	1.09
Grand Total	**0.58**	**6.12**	**1.89**

Row Labels	Sum of Total Contributions	Sum of Appearances
PSG	10	7
Manchester City	4	7
Benfica	3	14
Atletico Madrid	2	15
Brighton	2	6
Juventus	2	10
River	0	0
Bayer Leverkusen	0	3
Sevilla	0	10
Tottenham	0	7
Real Betis	0	4
Villarreal	0	1
Roma	0	2
Atlanta United	0	2
Inter	0	7
Manchester United	0	5
Aston Villa	0	7
Lyon	0	6
Grand Total	**23**	**113**

Position	(All)	
Row Labels	**Sum of Tackles per 90 Min**	**Sum of Interceptions per 90 Min**
Alejandro Gomez	1.65	0.83
Alexis Mac Allister	1.46	0.49
Angel Correa	0	0
Angel Di Maria	0.93	0.31
Cristian Romero	0.82	0.49
Emiliano Martinez	0	0
Enzo Fernandez	3.52	0.48
Exequiel Palacios	1.91	3.83
Franco Armani	0	0
German Pezzella	0	0
Geronimo Rulli	0	0
Gonzalo Montiel	2.31	0.77
Guido Rodriguez	3.16	0
Juan Foyth	0	0
Julian Alvarez	0.77	0
Lautaro Martinez	0	0.38
Leandro Paredes	4.02	1.21
Lionel Messi	0.65	0
Lisandro Martinez	1.5	0.9
Marcos Acuna	2.9	0.48
Nahuel Molina	1.42	0.47
Nicolas Otamendi	1.3	1.17
Nicolas Tagliafico	1.69	2.17
Paulo Dybala	0	0
Rodrigo De Paul	1.79	1.05
Thiago Almada	0	0
Grand Total	**31.8**	**15.03**

Conclusion

This project deepened my understanding of data analysis using Excel. I learned how to transform raw sports data into actionable insights through structured tables, calculated metrics, and interactive visualizations. The process reinforced the value of clarity, organization, and creativity in analytical storytelling.

References

- FIFA World Cup 2022 official stats
- Microsoft Excel documentation
- Tutorials on PivotTables and conditional formatting
- Kaggle