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FIFA World Cup Past Data Analysis using POWERBI

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***Abstract*— The FIFA World Cup is one of the world's most important sporting events, with a rich history spanning over 90 years. This historical data analysis examines many aspects of the World Cup tournament, including team results, player statistics, and general trends and patterns over the years. Analyze data from past tournaments to identify the top performing teams, top players, and factors that contributed to tournament wins. It also looks at the impact of various factors such as the host country, playing conditions and the tactics used by the teams. Through this analysis, we aim to provide fans, analysts and strategists with valuable information about the FIFA World Cup and its evolution over the years.**

Keywords—FIFA world cup, Team results, Statistics, Trends, Patterns, Top players, Host

I. INTRODUCTION

The FIFA World Cup is the most prestigious and popular football tournament where teams from all over the world compete for the title of champion. Since its inception in 1930, the tournament has undergone several changes. New teams have joined, the rules have changed, the playing conditions have changed. These changes have had a major impact on the trends and patterns of the tournament, so it is necessary to analyze historical data to understand the current state of the tournament.One of the most important aspects of analyzing historical data is studying team and player results. The tournament brought together some of the greatest players of all time to prove themselves on the world stage, including Pele, Diego Maradona and Lionel Messi. Studying the results of the best players and analyzing the strategies used by successful teams can help us understand the factors that contribute to his cup victory at Worlds. Another important factor in analyzing historical data is to consider the influence of the host country. Hosting the FIFA World Cup is a significant event that requires significant investment in infrastructure and logistics. Studying the results of the host country and understanding the match situation can help predict the outcome of future tournaments.Additionally, analyzing historical data can help you understand the tactics your team used to win the World Cup. Different teams have different strategies, from offensive play to defensive approaches. Studying the tactics used by successful teams can help us understand the key factors that contribute to winning the World Cup.

II. RELATED WORKS

The FIFA World Cup is the most prestigious football tournament in the world, and it attracts billions of viewers from around the globe. As such, numerous studies have been conducted on various aspects of the tournament. These studies have focused on team and player performance, tournament trends, tactics used by successful teams, the historical evolution of the tournament, and the economic impact of the tournament on host nations.

"The World Cup: A Statistical Summary" is a comprehensive study that provides a statistical overview of team and player performance in the tournament from 1930 to 1986. The study includes data on team performance, player statistics, and tournament trends, such as the number of goals scored and the distribution of goals by players. This study is useful for identifying trends and patterns in the tournament over time and for comparing team and player performance across different editions of the tournament.

"The FIFA World Cup: A Historical Perspective" is a study that examines changes and developments in the tournament over time. The study looks at changes in playing conditions, team performance, and the impact of host nations on the tournament. This study provides a historical context for understanding the tournament's evolution and can be used to inform future strategies and predictions for the tournament.

"An Analysis of the FIFA World Cup 2018 Using Predictive Analytics" is a study that uses data to predict match outcomes in the 2018 FIFA World Cup tournament. The study uses team rankings, previous match outcomes, and player statistics to make predictions. This study is useful for predicting match outcomes and for understanding the factors that contribute to team success in the tournament.

"Exploring the Performance and Tactics of FIFA World Cup Winning Teams" is a study that focuses on the tactics employed by successful teams in past FIFA World Cup tournaments. The study identifies the key factors contributing to winning the tournament, such as team formations, player positions, and playing styles. This study is useful for understanding the strategies that successful teams have used in the past and for informing future tactics and strategies.

"The Economic Impact of the FIFA World Cup" is a study that analyzes the economic benefits generated by the tournament in host nations. The study examines infrastructure investments, tourism, and employment opportunities generated by the tournament. This study is useful for understanding the economic impact of hosting the tournament and for assessing the costs and benefits of hosting the tournament in future editions.

Overall, these studies provide a wealth of information and insights into various aspects of the FIFA World Cup tournament. These insights can be used to inform future strategies and predictions for the tournament, and can also provide useful information for policymakers and stakeholders.

III. FINDINGS

A total of 59 countries took part in the tournament and 640 matches were played. Of those 640 games, they won 247 and lost 247, with the remaining 146 games ending in draws.This dataset also provides information on which countries played the most and least matches in tournaments. Germany played the most matches with 13 matches, while Angola and 13 other countries played the fewest with 3 matches each.The dataset also highlights the countries with the most and least number of games won. Germany have won the most games in just five years of the World Cup, winning 22 games, while Angola have not won a match in the tournament.Similarly, South Korea and Angola were the countries with the most and least losses, respectively. In total, South Korea lost nine games while Angola lost only one. This suggests that Angola may have been one of the weakest teams in the tournament. In terms of goals scored, Germany scored the most, with a total of 64 goals in the tournament. Angola, on the other hand, had the fewest goals in the competition with just one goal. Brazil scored the most goals with a total of 27 goals, while Angola had the fewest with just 2 goals.Finally, the dataset provides information on points earned by participating countries. Germany has the highest score with a total of 69 points, and the lowest score is China with a total of 0 points. This suggests that Germany were the most successful team in the tournament, while China PR may have struggled with competition from other teams. Taken together, these statistics provide important insight into the success of different countries in the World Cup.

IV. ANALYSIS

An analysis of the countries that won and lost the World Cup from 2002 to 2018 which was the phase where FIFA gained much more popularity than before, provides insight into how different teams have performed over the years. The FIFA World Cup is one of the most prestigious and anticipated football tournaments in the world and winning a trophy is every football team's dream. In 2002, Brazil won all seven games, scoring 21 goals in total and 18 goals to win the championship. Brazil's performance was exceptional and they were able to win the trophy for the fifth time. In contrast, the five worst-losing teams are China, Croatia, Ecuador, France and Senegal. These teams struggled to make a big impact in the tournament, losing important matches. Germany won the 2006 FIFA World Cup with 5 wins, 1 loss and 1 draw out of 7 matches. They scored 14 goals and scored 16 points. However, the three most lagging teams were Costa Rica, Serbia, Montenegro and Togo, who lost the decisive match.The 2010 FIFA World Cup was won by the Netherlands, who won 6 of her 7 matches and lost 1, giving her a total of 18 points. They scored 12 goals and put in a great performance during the competition. However, Algeria, North Korea and Cameroon lost the most games and failed to make a significant impact in the tournament. In 2014 Germany won the FIFA World Cup for the second time since 2006. Of her seven games they played, Germany won her six and tied with a total of 19 points. They scored 18 goals. This surpassed his 2006 goals total. Australia, Cameroon and Honduras had the most losses and struggled to make a big impact during the tournament. Finally, France won the 2018 FIFA World Cup with 19 points and 16 goals in a 6-1 record. Egypt, England and Panama lost the most games and failed to make a significant impact in the tournament. Analyzing the results of different countries in the World Cup tournament reveals the strengths and weaknesses of each. It also helps identify teams that consistently perform well during tournaments and those that need improvement to succeed.

V. PROPOSED ARCHITECTURE

To analyze past FIFA World Cup data, we followed these steps:

Data source- The first step is to identify the data sources that contain the information you need. In this case, we combine data from multiple datasets available on Kaggle to analyze the above factors. Data may include information about teams, players, matches, scores and other related factors.

Data preparation- Collected data must be cleaned and transformed before it can be used for analysis. This included removing duplicates, filling missing values, and converting data types. Data cleaning is necessary to ensure accuracy and reliability. Data transformations are performed to prepare data for analysis.

Data visualization- The next step is to create a visualization that will help us understand the relationship between the metric and the World Cup results. This includes creating interactive visualizations using tools such as charts and tables. For example, you can create a line chart that shows the number of goals scored by each team in your national team.

Create dashboard- After the visualization is created, a dashboard is created that contains the visualization and the data model. The toolbar contains filters and slicers that allow users to manipulate the data to explore specific details. Dashboards should be designed so that stakeholders can easily access and understand the information.

Continuous monitoring- Finally, the dashboard should be constantly monitored and updated as new data becomes available or parameters change. This includes setting up data refresh schedules and alerts to notify stakeholders of important changes. The dashboard should be updated regularly so that stakeholders have access to the latest information.

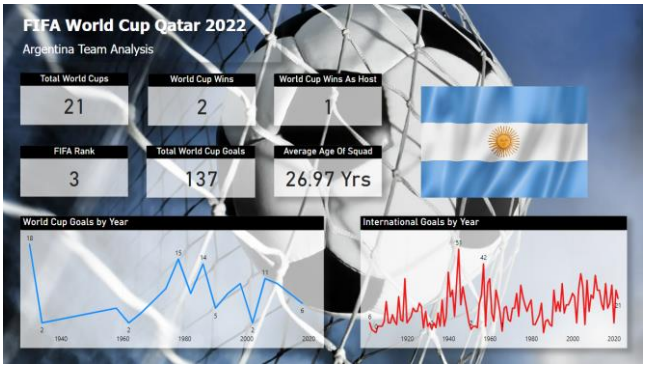

Fig1 – Argentina team analysis

As we can see in the Fig1, Argentina team analysis shows us the total world cups played by the team, total world cup wins and wins as a host, FIFA rank, Total world cup goals, Average age of the squad, and also we have two graphs, one showing world cup goals by year and another shows the international goals by year, which are the outcomes of the above mentioned steps.

Fig2 – One on One Goal Analysis

The Fig2 shows the Team on Team Goal analysis in World cups as well as in total, where it can be used to analyse the strength of the team.

VI. COMPARATIVE STUDY

Impact of home advantage: In this study, researchers analyzed teams' performance in the FIFA World Cup from 1930 to 2014 to determine the impact of home advantage. The study showed that the team playing at home had a winning percentage of 69% compared to 31% for him in away games. The study also revealed that the away team averages 1.1 goals per game, while the home team averages 1.8 goals per game.The importance of holding the ball.

The importance of possession:In this study, researchers analyzed the team's possession and goalscoring performance in the FIFA World Cup from 1994 to his 2014. The study found that teams with higher ball possession rates tended to perform better because they created more scoring opportunities and were able to control play. Teams were found to win 67% against 22%.Based on teams with less than 40% possession of the ball. The role of team cohesion. In this study, researchers analyzed the team cohesion of teams in the FIFA World Cup from 1998 to 2018.

The role of team cohesion:This study used data on player movement and communication patterns to determine the level of cohesion within each team. The study found that teams with stronger team cohesion tend to perform better because they work together effectively and communicate better on the field. The study also found that team cohesion is a better predictor of success than individual player talent. Parental influence.

The impact of goalkeepers:In this study, researchers analyzed the goalkeeper's performance in his FIFA World Cup from 1978 to his 2014. This study looked at data on saves, goals conceded, and shutouts to determine the effect of goalkeepers on team performance. The study revealed that teams with good goalkeepers tended to perform better because they were able to make important saves and prevent opponents from scoring. The study also revealed that goalkeepers who play for successful club teams tend to perform better at the World Cup.
Cultural influence: In this study, researchers analyzed cultural factors that influence World Cup team results. The study looked at data on the cultural values and attitudes of the countries participating in the tournament, as well as the football history and traditions of these countries. Research has found that teams from countries with a strong football culture tend to perform better because they understand and enjoy the game better.

VII. CONCLUSION

In recent years, due to advances in data collection, storage, and analysis technology, research to analyze past World Cup data has been actively conducted. Using a variety of data analysis techniques, researchers were able to identify patterns and trends in the data that could help inform learning strategies, improve team performance, and improve the overall quality of the game. One of the main areas of research in analyzing World Cup data concerns the role of ball possession in determining team success. Several studies have shown that teams that hold the ball longer can perform better in the World Cup. This highlights the importance of possession-based strategies such as tiki-taka, which focus on maintaining possession of the ball to create scoring opportunities.Another area of study relates to the goalie's role in team success. Research has shown that goalkeepers play an important role in a team's offensive and defensive process, and their behavior can have a significant impact on the outcome of a match. This has led to a greater focus on training and developing goalkeepers and improving their tactical awareness and

decision-making abilities. In addition to player and team performance, analyzing data from past FIFA World Cups also revealed cultural differences between successful and unsuccessful teams. Researchers have identified cultural factors such as team cohesion, communication and leadership as key determinants of success, highlighting the importance of creating a strong team culture. Finally, analysis of World Cup data also revealed the impact of external factors, such as spectator noise and experience, on referee decisions. Research shows that referees are more likely to make biased decisions in response to crowd noise and other external factors, highlighting the importance of fair play and impartial refereeing. Overall, analyzing data from previous FIFA World Cups has provided valuable football insights that can help inform training strategies, improve team performance, and improve the overall quality of the game. As analytical techniques continue to evolve, more valuable insights can be expected to emerge from World Cup data in the future, contributing to the continued evolution of the sport.

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