

UEFA Champions League Exploration

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2025-07-01

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Introduction

The UEFA Champions League stands as one of the most prestigious tournaments in club football, showcasing elite teams from across Europe. This report aims to explore patterns of dominance in both the men's and women's competitions by analyzing the countries and clubs that have historically performed the best. By cleaning and organizing relevant data sets, I investigate which nations and teams have achieved the most success and uncover trends in title distribution over time. Through this analysis, I seek to answer a series of guiding questions that evolved and became more focused as the data was prepared and explored.

Discussion of Research Questions

This report is guided by the following research questions:

1. Which three countries have dominated the UEFA Men's Champions League the most (by total titles won)?
2. Which three countries have dominated the UEFA Women's Cup and Champions League the most (by total titles won)?
3. Within the most dominant country, which club has been the most successful in the UEFA Men's and Women's Champions League?
4. Which club holds the record for the most UEFA Champions League titles, and how many have they won?
5. Which club has appeared in the most UEFA Champions League finals and plot the graphs (Men's and Women's)?

Background Information

To answer my research questions, I obtained historical data on UEFA Champions League titles, including which clubs have won, how many titles each has earned, and their countries of origin. This also includes data on how often a club has been a runner-up. My analysis focuses on identifying patterns of dominance at both the national and club levels, comparing the men's and women's tournaments to determine whether similar countries or clubs dominate in both. I also aim to highlight differences in competitiveness and the concentration of titles.

Data Summary

Primary Data Set:

I obtained this data set from Kaggle, where it was originally sourced from Wikipedia. The data set includes historical information about UEFA Champions League finals. The following are the key attributes I will focus on in my analysis:

winner.country: The country of winner team

winner: The name of the winner club

runner.up: The name of the runner up club

runner.up.country: The country of the runner up team

attendance: The attendance in final match, 1973-74 season has 2 matches, so there are two attendances data in separated with semicolon form

winning.way: normal time or extra time or penalty

Secondary Data Sets:

1. This data was sourced from Wikipedia. Using HTML scraping, I obtained two tables from the site that detail performances in the European Cup and UEFA Men's Champions League:
 - a) Performance by Nation – This table summarizes how each country has performed in terms of total titles and runner-up finishes by its clubs.

Table 1: Men's Performances in finals by nation

Nation	Title(s)	Runners-up	Total
Spain	20	11	31
England	15	11	26
Italy	12	18	30
Germany[n]	8	11	19
Netherlands	6	2	8
Portugal	4	5	9
France	2	6	8
Romania	1	1	2
Scotland	1	1	2
Yugoslavia[o]	1	1	2
Belgium	0	1	1
Greece	0	1	1
Sweden	0	1	1

- b) Performance of Winning Clubs by Nation - This table summarizes how many times clubs from each country have won or finished as runners-up in the UEFA Champions League. It highlights national-level success by aggregating the performances of clubs under their respective countries. The clubs are listed in the order of the first to win from each country, allowing for a historical view of national dominance in the tournament.

When I first received the dataset, all the clubs were listed in a single column, separated by commas. Through data wrangling, I split this column so that each club now has its own column. As a result, the first club to win the UEFA Men's Champions League from a given country now appears in the "Club 1" column, followed by subsequent clubs in order.

Table 2: Men's Winning Clubs Performances in finals by nation

Nation	Club 1	Club 2	Club 3	Club 4	Club 5	Club 6	Number of winners
England	Manchester United	Liverpool	Nottingham Forest	Aston Villa	Chelsea	Manchester City	6
Italy	Milan	Inter Milan	Juventus				3
Germany	Bayern Munich	Hamburger SV	Borussia Dortmund				3
Netherlands	Feyenoord	Ajax	PSV Eindhoven				3
Spain	Real Madrid	Barcelona					2
Portugal	Benfica	Porto					2
France	Marseille	Paris Saint-Germain					2
Scotland	Celtic						1
Romania	Steaua București						1
Yugoslavia	Red Star Belgrade						1

2. This data was sourced from Wikipedia. Using HTML scraping, I obtained two tables from the site that detail performances in the UEFA Women's Cup and UEFA Women's Champions League by club:
- a) Performance by Club – This table displays each club's performance in the tournament, including the number of times they have won or finished as runners-up, along with the specific seasons in which these outcomes occurred.

Table 3: Women's Performances in finals by club

Club	Titles	Runners-up	Seasons won	Seasons runner-up
Lyon	8	3	2011, 2012, 2016, 2017, 2018, 2019, 2020, 2022	2010, 2013, 2024
Eintracht Frankfurt	4	2	2002, 2006, 2008, 2015	2004, 2012
Barcelona	3	3	2021, 2023, 2024	2019, 2022, 2025
VfL Wolfsburg	2	4	2013, 2014	2016, 2018, 2020, 2023
Umeå	2	3	2003, 2004	2002, 2007, 2008
Turbine Potsdam	2	2	2005, 2010	2006, 2011
Arsenal	2	0	2007, 2025	
FCR Duisburg	1	0	2009	
Paris Saint-Germain	0	2		2015, 2017
Fortuna Hjørring	0	1		2003
Djurgården	0	1		2005
Zvezda Perm	0	1		2009
Tyresö	0	1		2014
Chelsea	0	1		2021

- b) Performance by nation - This table summarizes each nation's overall success in the UEFA Champions League. It includes the number of titles won, runner-up finishes, and semi-final appearances by clubs from each country. It also lists the specific clubs that contributed to those results under each category.

Table 4: Women Performance in finals by nation

Nation	Winners	Runners-up	Semi-finalists
Germany	9	8	10
France	8	5	10
Spain	3	3	2
Sweden	2	5	4
England	2	1	13
Denmark	0	1	3
Russia	0	1	0
Norway	0	0	2
Finland	0	0	1
Italy	0	0	1

Exploratory Data Analysis

1. Which three countries have dominated the UEFA Men's Champions League the most (by total titles won)?

Table 5: Top three countries with the most UEFA Men's Champions League titles.

Country	Titles
Spain	19
England	15
Italy	12

From my exploration, we see that Spain, England and Italy have dominated the UEFA Men's Champions League. Let's see if it's the same for women.

2. Which three countries have dominated the UEFA Women's Cup and Champions League the most (by total titles won)?

Table 6: Top three countries with the most UEFA Women’s Champions League titles.

Nation	Winners
Germany	9
France	8
Spain	3

From my exploration as seen in Table 6, we see that Germany, France, and Spain have dominated the UEFA Women’s Champions League.

According to Table 5 and Table 6, since Spain and Germany are found to be among the top three countries dominating both the Men’s and Women’s UEFA Champions League respectively, let’s identify the Spanish and German clubs that have been most successful in both competitions.

3. Within the most dominant country, which club has been the most successful in the UEFA Men’s and Women’s Champions League?

For the Men:

Table 7: Dominating Spanish Club

Nation	Dominating Club
Spain	Real Madrid

For the Women: The data with the column of clubs that have been dominating couldn’t be read in, so I looked at the website and found out that Eintracht Frankfurt have the most dominating German club in the Women Champion’s League.

4. Which club holds the record for the most UEFA Men and Women Champions League titles, and how many have they won?

For the Men:

Table 8: Most dominating club in the UEFA Men’s Champion’s League

Team	titles
Real Madrid	14
Milan	7
Bayern Munich	6
Liverpool	6

Table 8: Most dominating club in the UEFA Men's Champion's League

Team	titles
Barcelona	5

From the exploration as seen in Table 8, Real Madrid holds the most UEFA Men's Champions League titles, with 14 wins.

Plot for top 5 Mens teams with the most titles

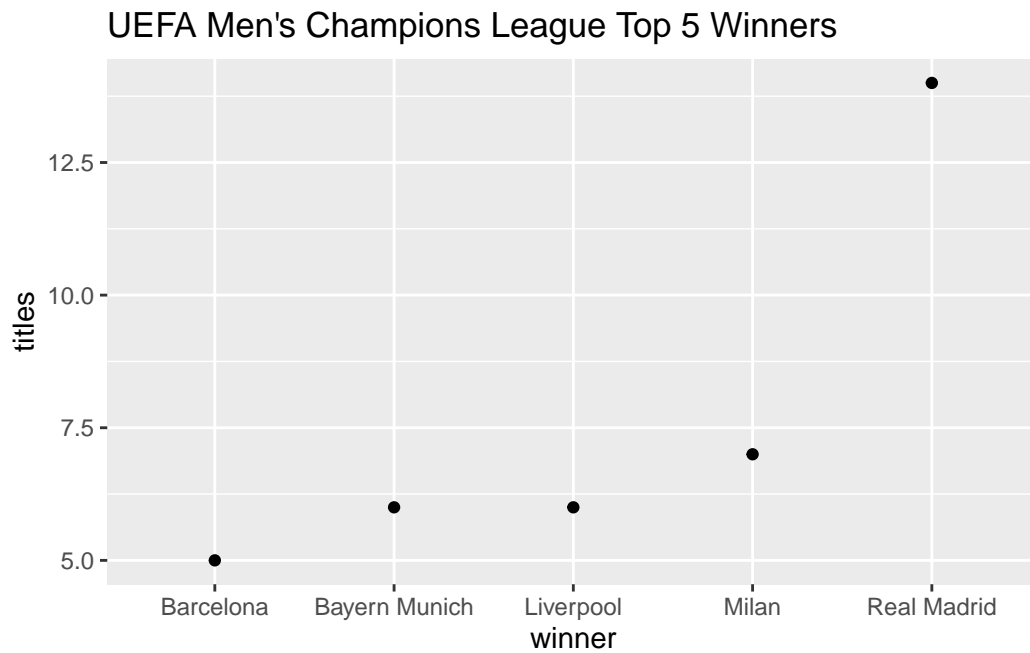


Figure 1

For the Women:

Table 9: Most dominating club in the UEFA Women's Champion's League

Team	Titles
Lyon	8
Eintracht Frankfurt	4
Barcelona	3
VfL Wolfsburg	2
Umeå	2

Plot for top 5 Womens teams with the most titles

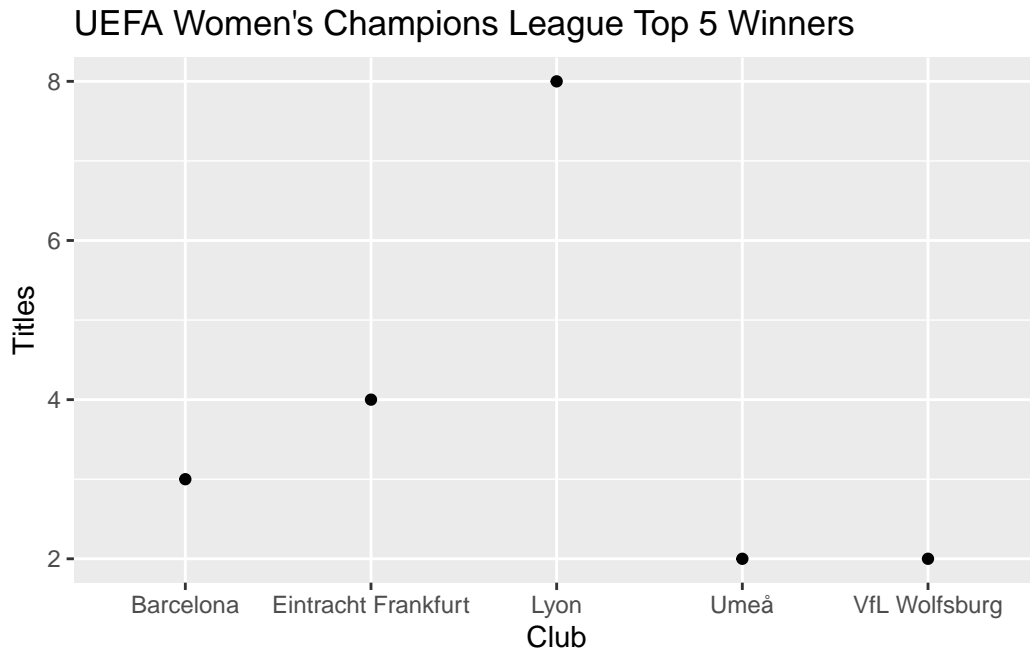


Figure 2

From the exploration as seen in Table 9 and Figure 2, Lyon holds the most UEFA Women's Champions League titles, with 14 wins.

However, dominating the competition isn't just about winning, it also includes consistent appearances in the final. So, let's find out if there's a difference between the top five teams with the most UEFA Men's Champions League titles and the top five teams with the most final appearances.

5. Which club has appeared in the most UEFA Champions League finals (Men's and Women's)?

For the Men:

Team	Final Appearances
Real Madrid	17
Bayern Munich	11
Milan	11
Liverpool	10
Juventus	9

From the exploration, it's clear that Real Madrid is the most dominant team in the UEFA Men's Champions League. In addition to holding the most titles, they also have the highest number of final appearances—17 in total.

An interesting observation is that Juventus, despite reaching the final nine times—placing them in the top five for final appearances—is not among the top five teams in terms of title wins according to Table 8. This highlights the competitiveness of the UEFA Men's Champions League.

Plot for top five Men's teams with the most final appearances

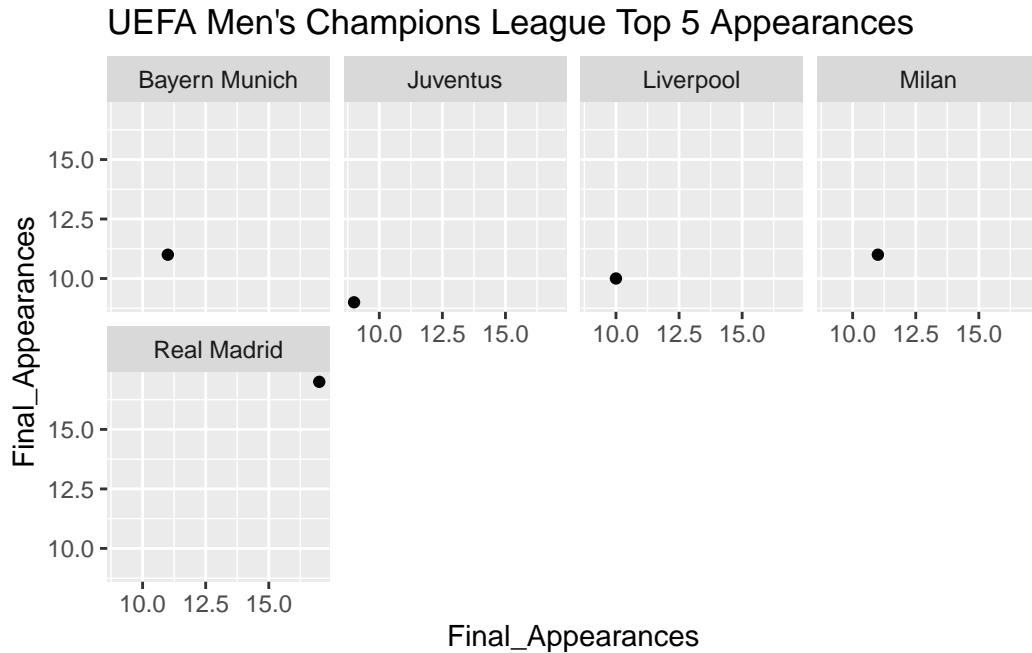


Figure 3

For the Women:

Team	Final_Appearances
Lyon	11
Eintracht Frankfurt	6
Barcelona	6
VfL Wolfsburg	6
Umeå	5

From the exploration, it's clear that Lyon is the most dominant team in the UEFA Women's

Champions League. Not only do they hold the most titles, but they also have the highest number of final appearances—11 in total.

An interesting observation is that the top five teams in title wins are the same as those in final appearances. This suggests that the Women's competition has been less competitive or more top-heavy compared to the Men's.

Plot for top five Women's teams with the most final appearances

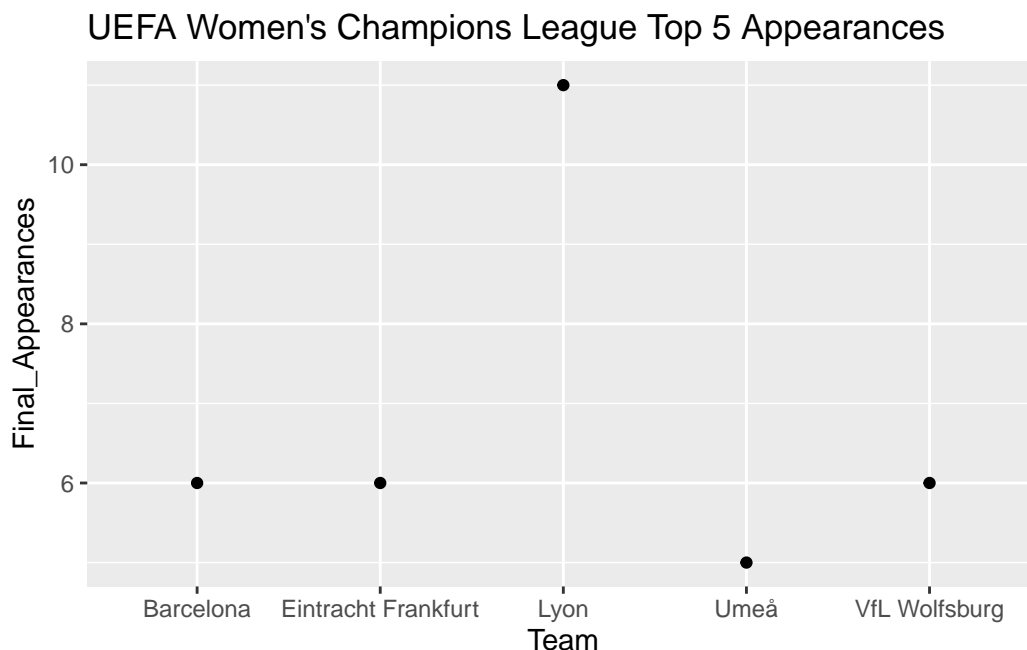


Figure 4

Conclusion

This analysis explored the historical performance of clubs and nations in the UEFA Champions League, both for the men's and women's tournaments. By examining data on title wins, runner-up appearances, and other performance metrics, we identified which countries and clubs have been the most dominant in the competition's history.

Our findings reveal that a handful of countries—such as Spain, England, and Italy—consistently lead in total titles across the men's league, while Germany, France, and Spain lead in total titles for the women's league. However, notable differences also emerged: for example, France has shown remarkable strength in the women's competition, largely due to the dominance of Olympique Lyonnais (Lyon), whereas Spanish clubs—particularly Real Madrid—have had unrivaled success on the men's side.

Through data wrangling, cleaning, and visualization, we were able to make these patterns clear and compare performance across gender lines. This project demonstrates how data analysis can be used to highlight trends, answer guiding questions, and support broader narratives in sports history.

Ultimately, this analysis not only offers a statistical view of European club football dominance but also invites reflection on the evolving competitiveness and growth of women's football across the continent.

References

1. (2024, April 4). UEFA Champions League All Finals (1955 - 2023). Kaggle. <https://www.kaggle.com/datasets/renjiabara/uefa-champions-league-all-finals-1955-2023>
2. Wikimedia Foundation. (2025a, June 4). UEFA Women's Champions League. Wikipedia. https://en.wikipedia.org/wiki/UEFA_Women's_Champions_League
3. Wikimedia Foundation. (2025b, June 29). List of European Cup and UEFA Champions League Finals. Wikipedia. https://en.wikipedia.org/wiki/List_of_European_Cup_and_UEFA_Champions_League_finals

Code Appendix

```
#| Style guide: Tht BOAST Style Guide
library(dplyr)
library(knitr)

UclFinals <- read.csv("C:\\Users\\oayan\\OneDrive\\Desktop\\ucl-finals.csv")

library(rvest)
library(tidyr)
library(dplyr)
library(knitr)
library(mosaic)
library(ggplot2)
URL <- "https://en.wikipedia.org/wiki/List_of_European_Cup_and_UEFA_Champions_League_finals"
ListOfTables <- URL %>%
  read_html() %>%
  html_nodes(css = "table") %>%
  html_table(fill = TRUE)
SummaryNationPerformance <- ListOfTables[[5]]
WinningClubByNation <- ListOfTables[[6]]
```

```

SummaryNationPerformance %>%
  kable(format = "markdown", caption = "Men's Performances in finals by nation")

WinningClubByNation1 <- WinningClubByNation %>%
  rename(Clubs = "Winning clubs (in order of first win)")
WinningClubByNation1 <- WinningClubByNation1 %>%
  separate_rows(Clubs, sep = ", ")

MenWinningClubByNation <- WinningClubByNation1 %>%
  group_by(Nation) %>%
  mutate(
    clubNum = paste0("Club ", row_number())
  ) %>%
  pivot_wider(
    names_from = clubNum,
    values_from = Clubs
  )

MenWinningClubByNation <- MenWinningClubByNation %>%
  select(
    Nation, `Club 1`, `Club 2`, `Club 3`, `Club 4`,
    `Club 5`, `Club 6`, `Number of winners`
  )

MenWinningClubByNation %>%
  replace(is.na(.), "") %>%
  kable(format = "markdown", caption = "Men's Winning Clubs Performances in finals by nation")

URL <- "https://en.wikipedia.org/wiki/UEFA_Women%27s_Champions_League"
ListOfTables <- URL %>%
  read_html() %>%
  html_nodes(css = "table") %>%
  html_table(fill = TRUE)
WomenClubSummary <- ListOfTables[[5]]
WomenNationSummary <- ListOfTables[[6]]
WomenNationSummary <- WomenNationSummary[, 1:4]

kable(WomenClubSummary, caption = "Women's Performances in finals by club")

kable(WomenNationSummary, caption = "Women Performance in finals by nation")

UclFinals %>%

```

```

group_by(winner.country) %>%
summarise(total_titles = n()) %>%
arrange(desc(total_titles)) %>%
rename("Country" = winner.country,
       "Titles" = total_titles) %>%
head(total_titles, n = 3) %>%
kable(caption = "Top three countries with the most UEFA Men's Champions League titles.")

WomenNationSummary %>%
  select("Nation", "Winners") %>%
  head(3) %>%
  kable(caption = "Top three countries with the most UEFA Women's Champions League titles.")

get_dominating_club <- function(data, country) {
  data %>%
    select(Nation, `Club 1`) %>%
    filter(Nation == country) %>%
    rename(`Dominating Club` = `Club 1`) %>%
    kable(caption = "Dominating Spanish Club")
}

get_dominating_club(MenWinningClubByNation, "Spain")

UclFinals %>%
  group_by(winner) %>%
  summarise(titles = n()) %>%
  arrange(desc(titles)) %>%
  head(5) %>%
  rename(Team = winner) %>%
  kable(caption = "Most dominating club in the UEFA Men's Champion's League")

MostDominatingMensClub <- UclFinals %>%
  group_by(winner) %>%
  summarise(titles = n()) %>%
  arrange(desc(titles)) %>%
  head(5)

ggplot(data = MostDominatingMensClub, aes(x = winner, y = titles)) + geom_point() + labs(tit

WomenClubSummary %>%
  select("Club", "Titles") %>%
  rename(Team = "Club") %>%

```

```

  arrange(desc(Titles)) %>%
  head(5) %>%
  kable(caption = "Most dominating club in the UEFA Women's Champion's League")

MostDominatingWomensClub <- WomenClubSummary %>%
  select("Club", "Titles") %>%
  arrange(desc(Titles)) %>%
  head(5)

ggplot(data = MostDominatingWomensClub, aes(x = Club, y = Titles)) + geom_point() + labs(title = "Most dominating club in the UEFA Women's Champion's League")

UclFinals %>%
  select(winner, runner.up) %>%
  pivot_longer(cols = c(winner, runner.up), names_to = "Result", values_to = "Team") %>%
  count(Team, sort = TRUE, name = "Final Appearances") %>%
  head(5) %>%
  kable()

MensTop5Appearance <- UclFinals %>%
  select(winner, runner.up) %>%
  pivot_longer(cols = c(winner, runner.up), names_to = "Result", values_to = "Team") %>%
  count(Team, sort = TRUE, name = "Final_Appearances") %>%
  head(5)

ggplot(data = MensTop5Appearance, aes(x = Final_Appearances, y = Final_Appearances)) + geom_point() + labs(title = "Mens Top 5 Appearances in UCL Finals")

WomenClubSummary %>%
  mutate(Final_Appearances = Titles + `Runners-up`) %>%
  select("Club", "Final_Appearances") %>%
  rename(Team = Club) %>%
  head(5) %>%
  kable()

WomensTop5Appearance <- WomenClubSummary %>%
  mutate(Final_Appearances = Titles + `Runners-up`) %>%
  select("Club", "Final_Appearances") %>%
  rename(Team = Club) %>%
  head(5)

ggplot(data = WomensTop5Appearance, aes(x = Team, y = Final_Appearances)) + geom_point() + labs(title = "Womens Top 5 Appearances in UCL Finals")

```