

6950 Project EDA

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In this project, we aim to explore the contributing factors of market values for the players in the five most successful football leagues in Europe (i.e., “Big Five”) in the setting of FIFA 21. FIFA 21, as part of the FIFA series, is an association football simulation video game, which is developed and released annually by Electronic Arts under the EA Sports label. It is the 28th installment in the FIFA series, and was released on 9 October 2020 for Microsoft Windows, Nintendo Switch, PlayStation 4 and Xbox One. Enhanced versions for the PlayStation 5 and Xbox Series X and Series S were released on 3 December 2020, in addition to a version for Stadia in March 2021. With an official license from FIFA, the world governing body of football, the game provides comprehensive data featuring more than 30 official leagues, over 700 clubs, and over 17,000 players.

The ‘Big Five’ represent the five most successful football leagues in Europe, which are made up of the Premier League in England, La Liga in Spain, the Bundesliga in Germany, Serie A in Italy and Ligue 1 in France. Since 1955 The first edition of the European Cup took place during the 1955–56 season, which provides an unique competition opportunity for footballs clubs in Europe. In 1960, The association coefficient was introduced to rank the football associations of Europe, and thus determine the number of clubs from an association that will participate in the UEFA Champions League, the UEFA Europa League and the UEFA Europa Conference League. Since then, the Premier League, La Liga, the Bundesliga, and Serie A have won the majority of the titles, which was more than titles won by other associations combined. Though Ligue 1 in France has never won the title, it has been ranked among the top 5 eer sicne. The combined revenue of these five leagues, which each represent the highest tier football division in their countries, has more than doubled in the past decade, reaching a total of approximately 15.1 billion euros in 2019/20. As such, the ‘Big Five’ is consistently attracting talent players to joint the leagues.

In this study, we aim to examine the contributing factors of market values for the players, which could potentially provide some insights of the key strategy in ability training for players to increase their market value. In addition, the analyses could examine the disparities in the market value across player’s position and the optimal league they should join to maximize their market value.

```
players_21 <- read.csv("~/Desktop/6950 project/6950_project/players_21.csv")
```

```
players_21%>%
  filter(league_name %in% c("Spain Primera Division", "Italian Serie A", "German 1. Bundesliga", "French L
```

```
[1] 2994 106
```

```
players<-players_21%>%
  filter(team_position != "GK")%>%
  select("sofifa_id", "short_name", "age", "height_cm", "weight_kg", "league_name", "overall",
         "value_eur", "preferred_foot", "team_position", "pace", "shooting", "passing",
         "dribbling", "defending", "physic"
```

```

) %>%
filter(league_name %in% c("Spain Primera Division", "Italian Serie A", "German 1. Bundesliga", "French L
filter(complete.cases(.))

```

```
players$log_value <- log(players$value_eur + 10000)
```

```
GGally::ggpairs(data = players, columns = c(8, 3, 4, 5, 7, 11:17), ggplot2::aes(alpha=1/5))
```

