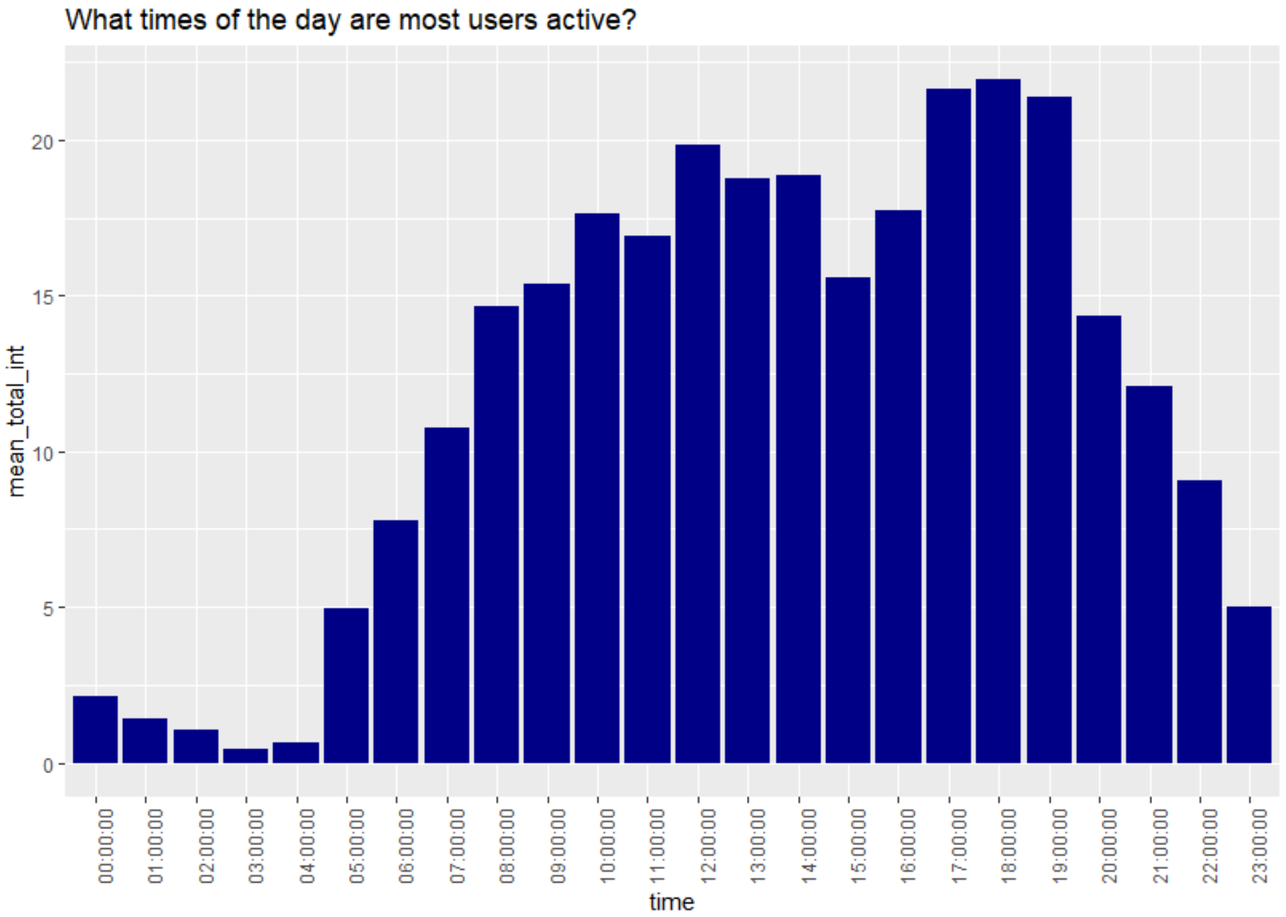
Capstone: Bellabeat Customer Market Analysis

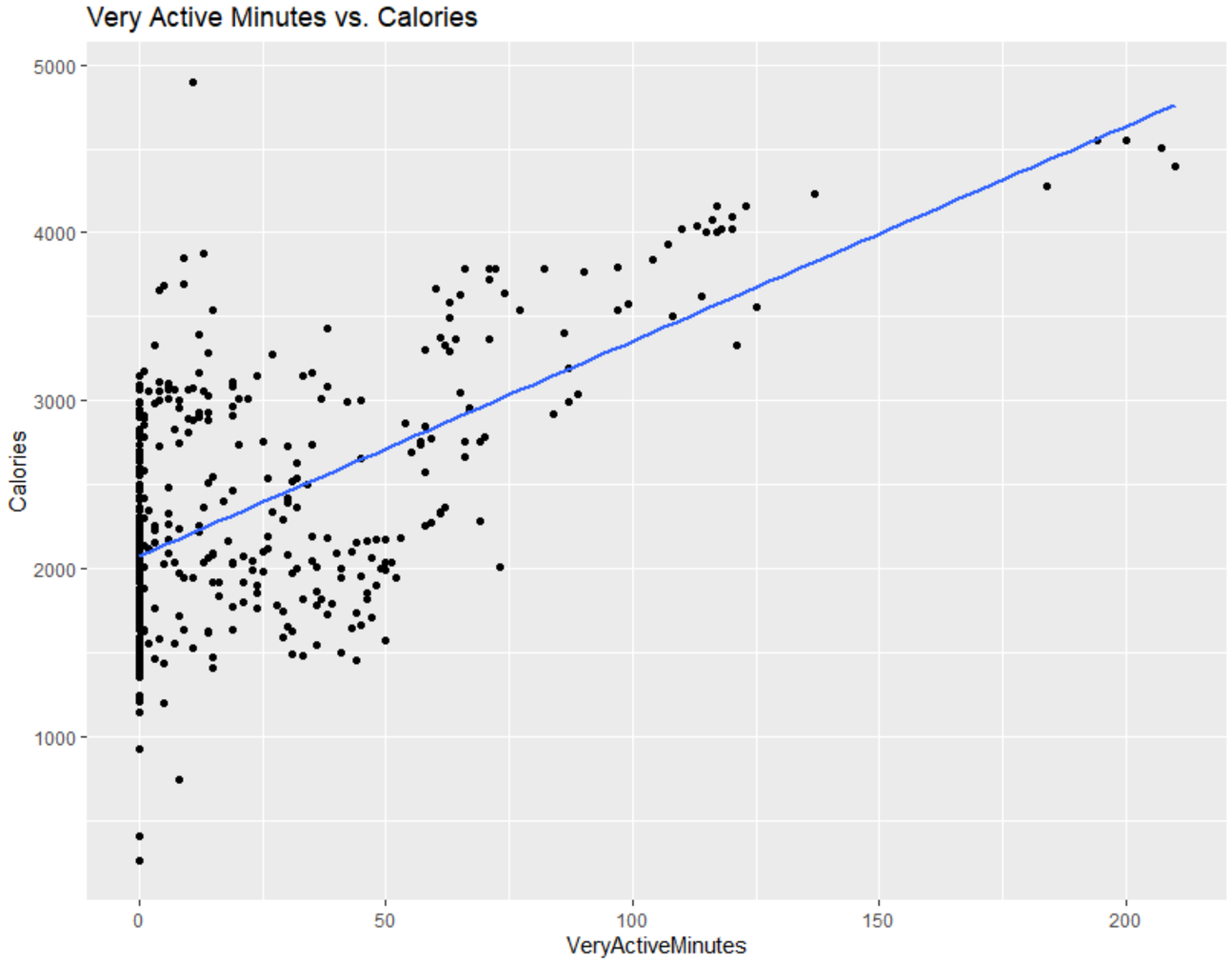
How does Bellabeat's customers use their smart devices?



Business Task

How does Bellabeat's customers use their smart devices?

Given the facts, the business task is defined as searching for patterns in how customers use their smart devices.



Key Questions

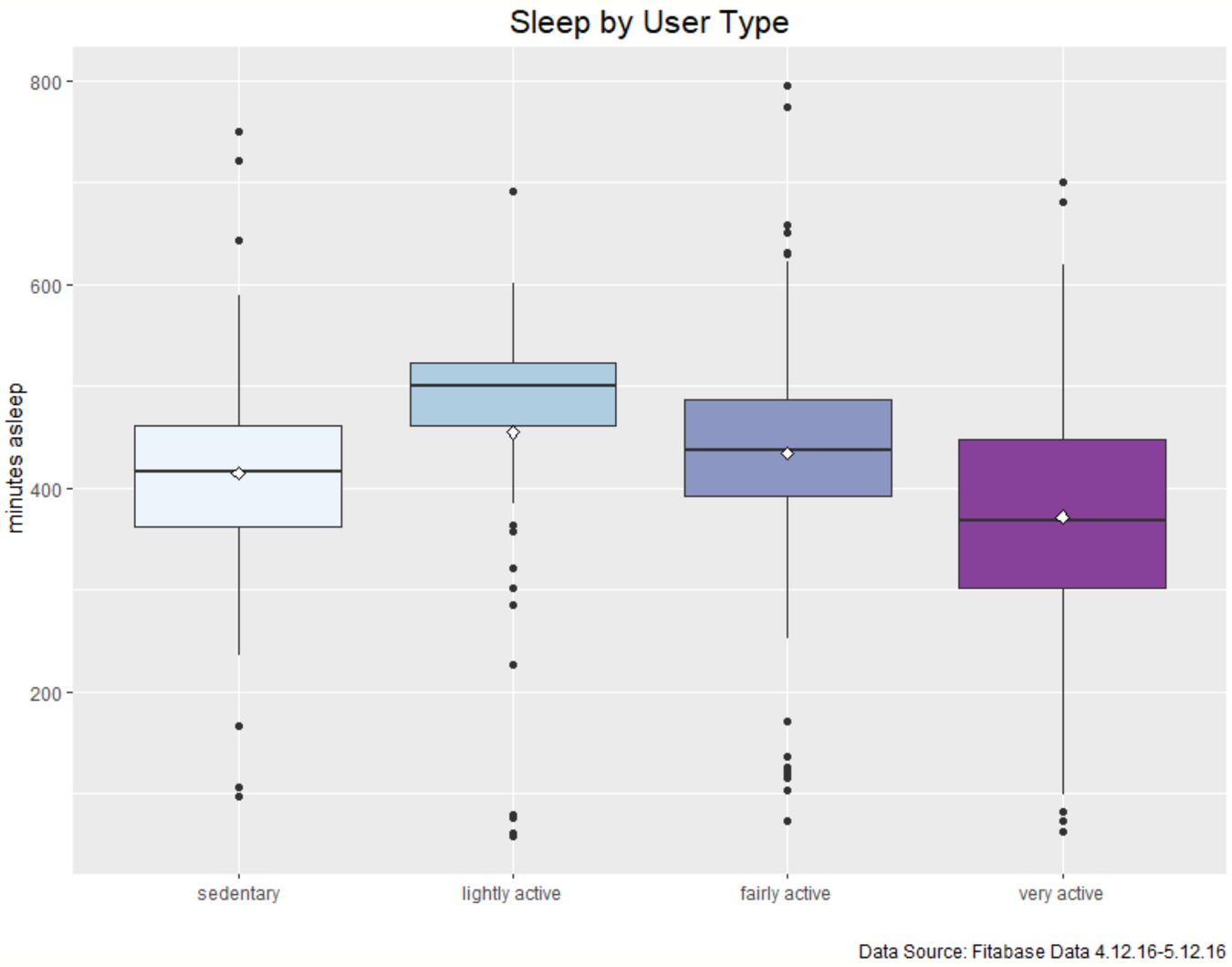
Based on the business task I put the following key questions together:

- What are a few quick summary statistics Bellabeat would like to know about their customers?
- What day and time of the week are users most active?
- What is the relationship between all of the variables?
- What is the relationship between minutes asleep and and active user types?
- What is the relationship between active users and calories burned?

Tools Used

See Kaggle Code for Data Manipulation Documentation

- Excel
- RStudio



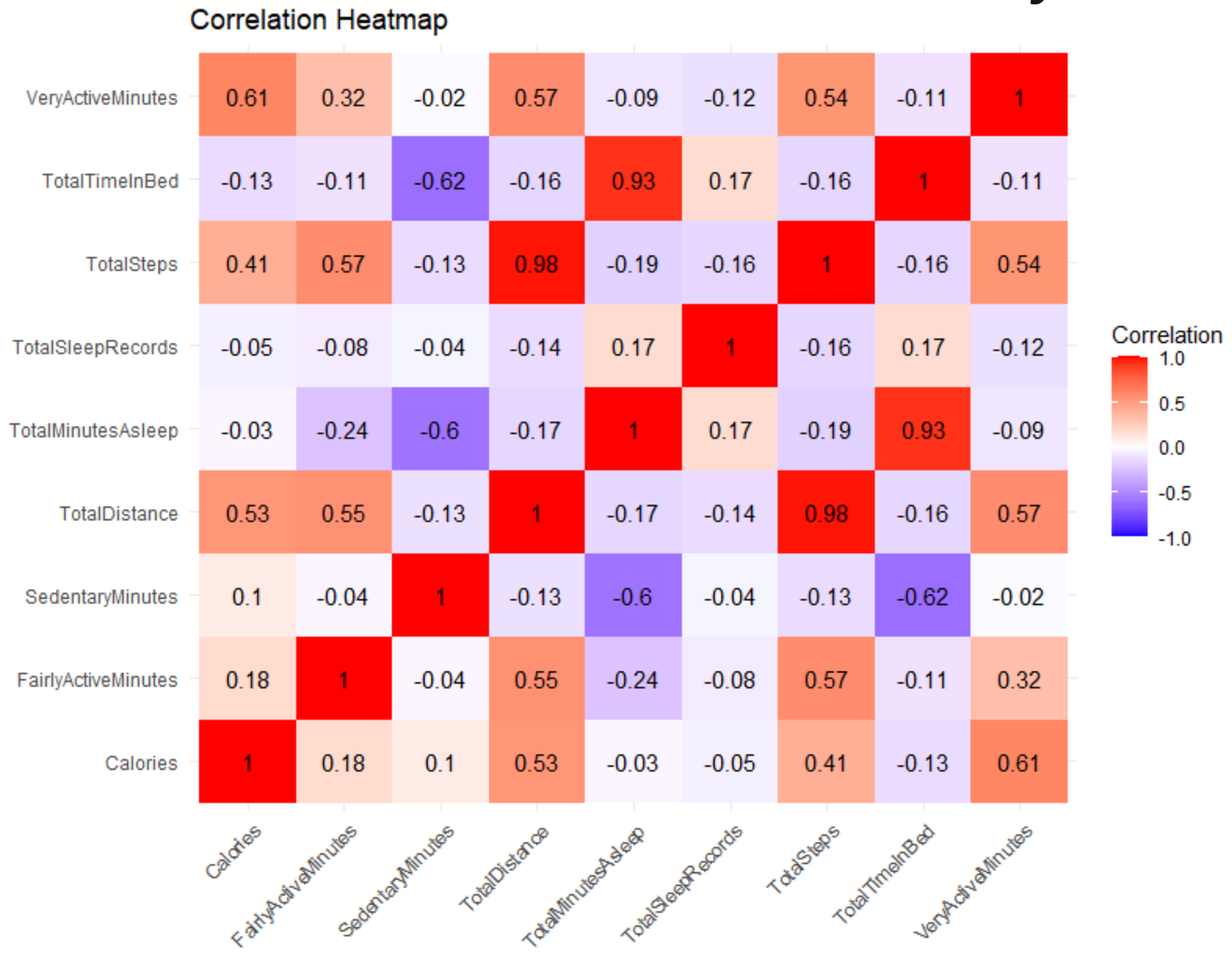
Recommendations

- Since only **24%** of users logged their weight compared to the rest of their daily activity and sleep, I would suggest Bellabeat do further analysis to find out why.

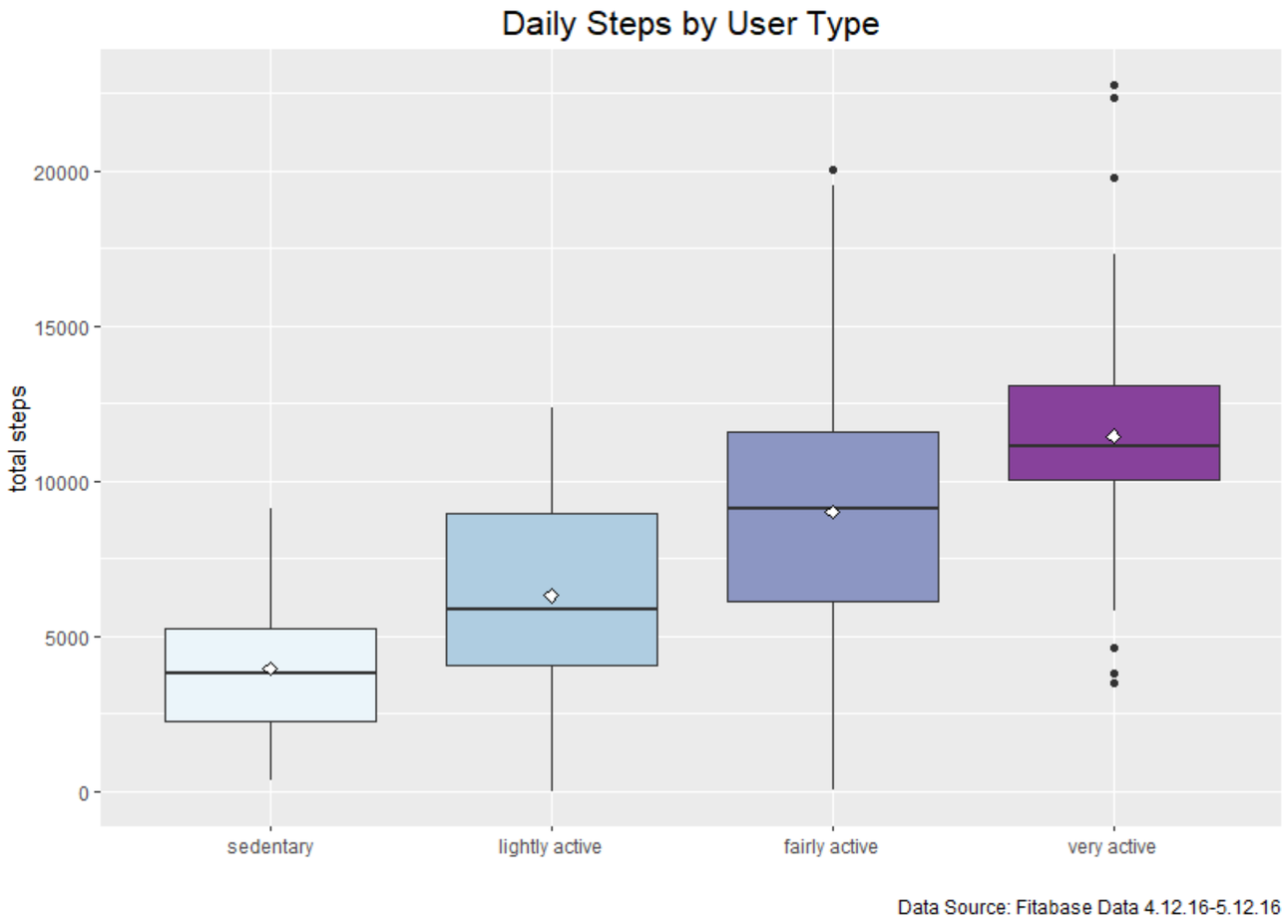
- Since **users who were more active in their fitness, slept less than the average 6.98 hours a day**, I would encourage Bellabeat to create a marketing campaign that promotes energy and less sleep to this market segment.

- Since users are more active from **5 - 7 pm daily** and **38%** of their users are **fairly active taking between 7500 to 9999** steps a day, I would encourage Bellabeat to create target marketing campaigns to encourage more activity during the week days.

Key Insights



- A few summary statistics Bellabeat would like to know about their customers are:
  - Each user takes an average of **7,638 steps a day**. This is lower than the daily 10,000 steps recommended by the CDC.
  - Each user spends an average of **16.5 hours a day** seated or inactive. That's almost 70% of the day.
  - Each user sleeps an average of **6.98** hours a day.
- Users are most active between **5 - 7 pm daily** and **Saturday** has the highest total average steps taken during the week.
- The correlation matrix indicates there are **strong relationships** between **Very Active Minutes** and **Calories, Total Steps** and **Fairly Active Minutes, Total Time spent in Bed** and **Total Time Asleep.**
- With a **coefficient of 0.61, the** scatter plot shows a strong positive relationship between Very Active Minutes and Calories. **As the number of Very Active Minutes increases the more Calories are burned.**
- Box plot 1 shows users grouped into 4 categories by fitness level. **It shows users who are more active in the their workout sleep less on average.**



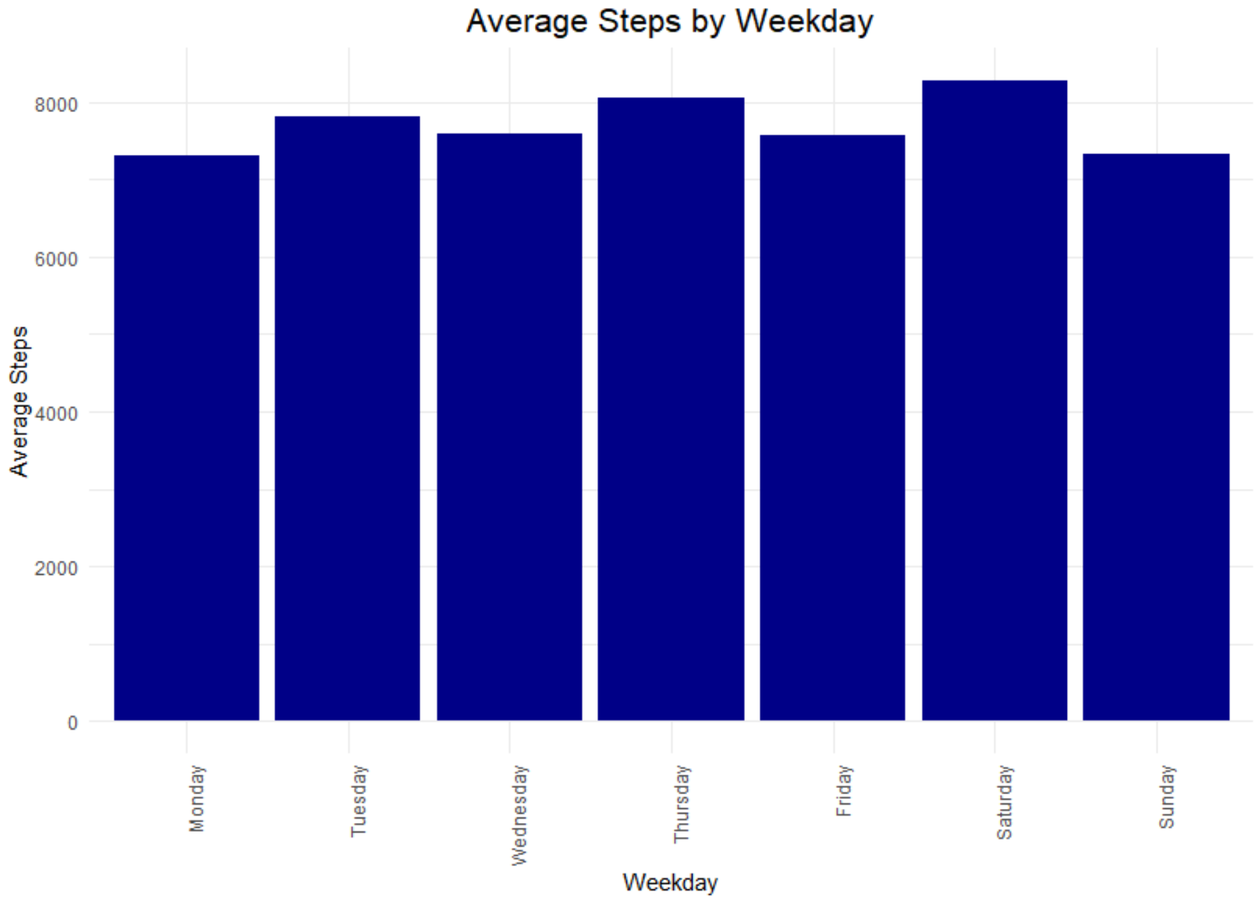
Background

For this project, I provided an analysis for Bellabeat, high-tech company that manufactures health-focused smart products. Bellabeat collected data on activity, sleep, stress, and reproductive health from their users to empower users with knowledge about their own health and habits.

Data Source

FitBit Fitness Tracker Data (CC0: Public Domain, dataset made available through Möbius)

- 18 datasets were generated by respondents to a distributed survey via Amazon Mechanical Turk between 04.12.2016 - 05.12.2016.
- 5 of 18 Data Sources used in analysis
- 30 eligible Fitbit users consented to the submission of personal tracker data, including minute-level output for physical activity, heart rate, and sleep monitoring.



Data Limitations

Consists of 30 users within a 30 day period from 2016. This makes the source outdated and the sample size too small for proper analysis. There is no demographic information to guarantee the data is representative of female users as Bellabeat's target audience.

Key Variables Used

See Kaggle Code for Dataset-Variable Breakdown

- TotalSteps, TotalDistance, SedentaryMinutes,Calories
- VeryActiveMinutes, FairlyActiveMinutes, LightlyActiveMinutes
- TotalSleepRecords, TotalMinutesAsleep, TotalTimeInBed, DifferenceTimeBedTimeSleep
- WeightKg, BMI