Analysis

Haldun Köktaş

2022-11-10

Simplifications

There is a strong correlation between total steps and very/fairly/lightly active minutes (0.51 average) and a not-so-strong correlation with sedentary minutes (0.13). That's why I removed active minutes and used the total steps metric as the primary activity indicator.

The remaining data has these columns: "Id", "Date", "TotalSteps", Calories", "TotalHoursAsleep", and "TotalHoursQuietSleep".

Daily Steps – Calories Relationship and Recommendation

A quick revisit to the steps-calorie relationship:

There are a few ways to utilize this information. Weight control is a common goal among people. Knowing that they tend to take more calories when they're more active, a smart device that keeps track of the calories and the steps can warn the user about the current calorie deficit and how they can benefit from the activity they have. To further conceptualize this, we can derive an equation where somebody would make a direct calculation.

$$y = 1755{,}78 + 0{,}076 * x$$

Where

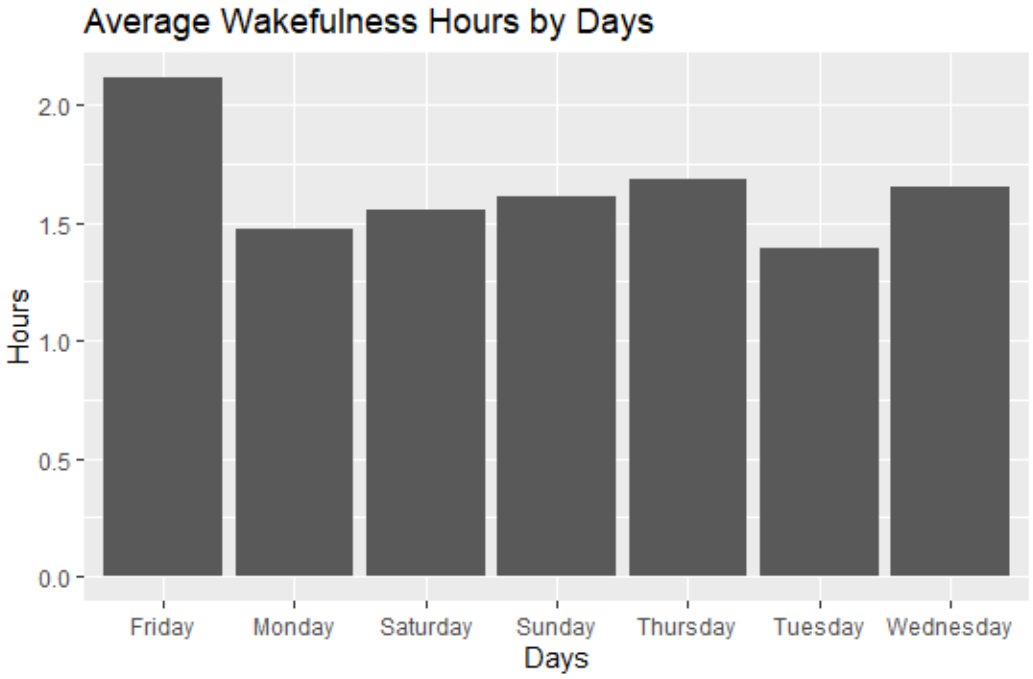
x: Total steps

y: Calories

Quiet Wakefulness

The audience spends 1,6 hours on average in bed before going to sleep. Reducing this time would benefit the user's health and overall sleep quality. Considering that people tend to use smartphones in bed (which may increase the wakefulness time), we could present an option to the user about how much they want to spend before going to sleep. That way, they're made conscious of the situation and let them control their night's quality.

The average time peaks at two on Friday nights. This makes sense, considering the end of a workweek.



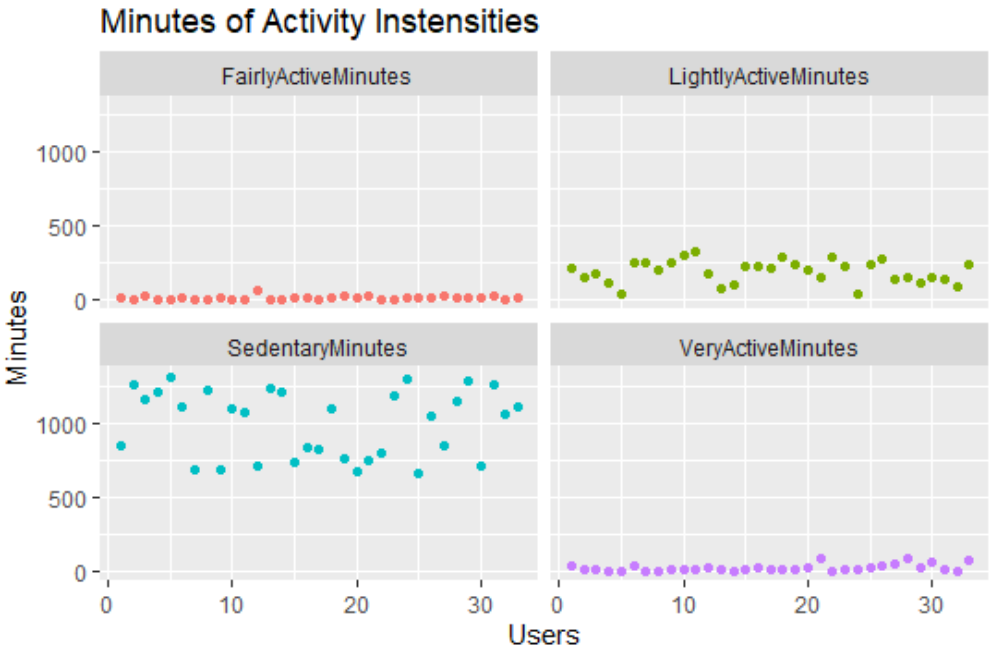
Heart Rates and User Profiles

The average heart rate among users is 80 bpm which is considered the "normal range" (60-100). The minimum and maximum rates are 66 and 94 bpm, respectively, which means that the audience's heart rates are in the normal range.

But one thing to consider is that professional athletes' heart rates are between 30 and 40 bpm. And people who are in between "normally active" and "professional athletes" have heart rates varying between 40 and 60 bpm.

This means that smart devices are not widely used by athletes or people who have active sports life. Considering the average BMI is 25.2 (which means "overweight") current audience for the smart

device market is people who are in the line of being overweight and have lower activity levels. The activity minutes chart shows that the majority have a sedentary life.



A device directed to athletes might find a usage area among people who are very active, and the data show an opportunity in this field.