

Bellabeat analysis report

Introduction:

Bellabeat is a high-tech company that manufactures health-focused smart products. Sršen used her background as an artist to develop beautifully designed technology that informs and inspires women around the world. Collecting data on activity, sleep, stress, and reproductive health has allowed Bellabeat to empower women with knowledge about their own health and habits. Since it was founded in 2013, Bellabeat has grown rapidly and quickly positioned itself as a tech-driven wellness company for women.

Bellabeat has lots of products, including smart devices and mobile applications. In this study, I will mainly focus on application. I will use data collected from fitbase fitness to discover how people use this kind of app and help Bellabeat to develop a marketing strategy.

Study:

1. What are some trends in smart device usage?
2. How could these trends apply to Bellabeat customers?
3. How could these trends help influence Bellabeat marketing strategy?

Business Task:

Focus on one of the products and provide insights and recommendations for Bellabeat team.

Prepare the data:

[FitBit Fitness Tracker Data](#)(CC0: Public Domain, dataset made available through Mobius): This Kaggle data set contains personal fitness tracker from thirty fitbit users. Thirty eligible Fitbit users consented to the submission of personal tracker data, including minute-level output for physical activity, heart rate, and sleep monitoring. It includes information about daily activity, steps, and heart rate that can be used to explore users' habits.

There are 18 files in the dataset, and I will focus on the activity and health data. Before we move on, here are some things we need to know about the data:

- The data is collected in 2016, which means it's not a current data and might be outdated.

- The data contains 33 people's data. The data includes users' weight and BMI, however, it doesn't have their age and career, which means the result might be biased.
- We don't know how exactly these data are collected. Are they wearing a device which record their activity, or they use their phones.

Process and Analyze:

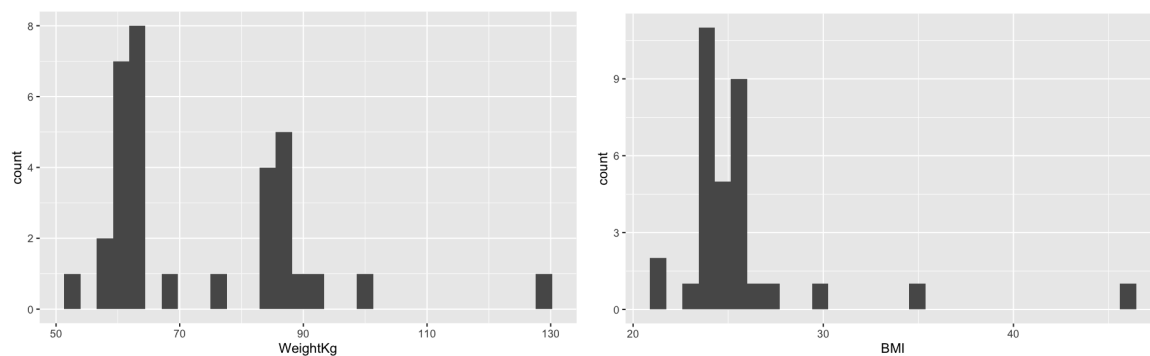
We will mainly use R to process and analyze data, because it's flexible, powerful, and efficient.

The dataset we are using are as follow:

- hourlyCalories_merged.csv
- hourlyIntensities_merged.csv
- hourlySteps_merged.csv
- dailyActivity_merged.csv
- weightLoginfo_merged.csv

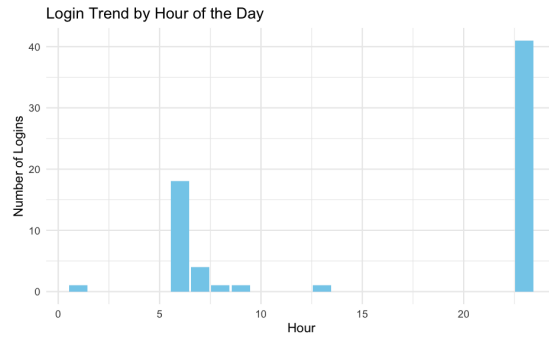
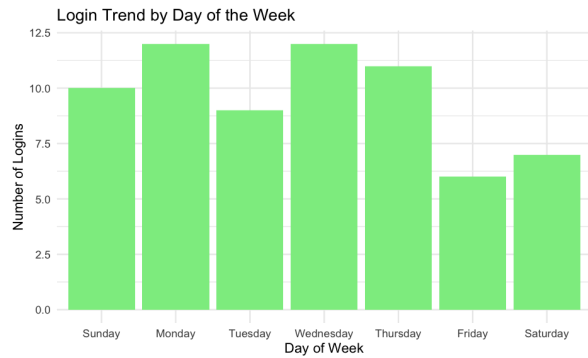
We discard minute level data because they are too narrow and will not do much to our conclusion, which is understanding trends in smart device usage and apply to Bellabeat.

We start by taking a glimpse of our data.



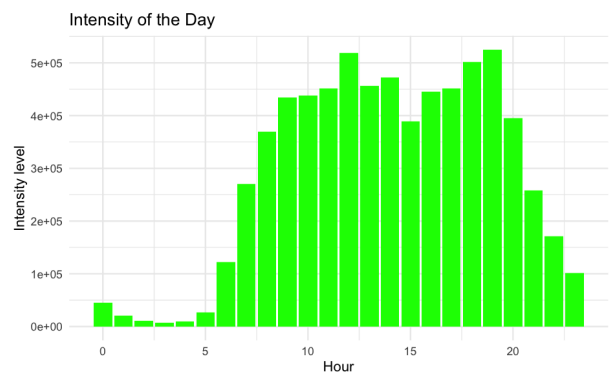
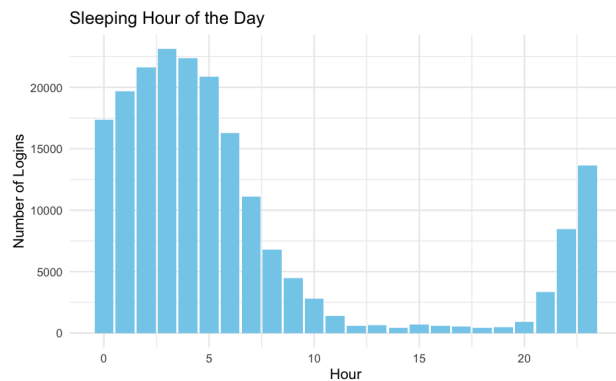
There are some outliers, however, most users have BMI between 24 to 27, which means most of them maintain good body shapes. Typically, we consider BMI between 20 to 28 a good BMI.

Then, we will process the time data so that we can analyze it. We convert the time data from type character to type daytime and graph the login time to see when people tend to use the app.



As we can see, people use the application mostly on weekdays. And the time they use it the most is at 22:00 and 7:00, which may indicate that they wish to track their sleeping or to recap their daily activity.

To further prove our guesses, we will see what they were doing when they accessed the application.



The sleeping data and intensity support the guess that they are not using it in training or running. Thus, from this dataset, we can conclude that most people use the application to track their daily activity or sleeping, rather than their sports performance.

Find and Share:

Based on what we found from the data, we have the following insights:

- Most users who would like to use fitness applications have good BMI and weight.
- Rather than using fitness apps to improve sports performance, users tend to use the application to track their body data, including sleeping and daily activity.
- Users access the application mainly before sleep and right after they wake up.

Act:

Based on our finding, we suggest Bellabeat marketing team to:

- Promote Bellabeat app's ability to help user track their habit
- Promote to those users who are already maintaining a good body shape, and want to keep it going.
- Placing ads between 20:00 to 22:00, which people want to recap how they did that day and have some free time to try the Bellabeat app.