Bellabeat: How Can A Wellness Technology Company Play It Smart?

Step 1: Ask

Background

Bellabeat is a high-tech manufacturer of beautifully-designed health-focused smart products for women since 2013. Inspiring and empowering women with knowledge about their own health and habits, Bellabeat has grown rapidly and quickly positioned itself as a tech-driven wellness company for females.

The co-founder and Chief Creative Officer, Urška Sršen is confident that an analysis of non-Bellebeat consumer data (ie. FitBit fitness tracker usage data) would reveal more opportunities for growth.

1.2 Business Task:

Analyze FitBit Fitness Tracker Data to gain insights into how consumers are using the FitBit app and discover trends and insights for Bellabeat marketing strategy.

1.3 Business Objectives:

1. What are the trends identified?
2. How could these trends apply to Bellabeat customers?
3. How could these trends help influence Bellabeat marketing strategy?

1.4 Key Stakeholders:

1. Urška Sršen: Bellabeat's cofounder and Chief Creative Officer
2. Sando Mur: Mathematician, Bellabeat's cofounder and key member of the Bellabeat executive team.
3. Bellebeat marketing analytics team: A team of data analysts guiding Bellabeat's marketing strategy.

Step 2: Prepare

2.1 Information on Data Source:

1. The data is publicly available on [Kaggle: FitBit Fitness Tracker Data](#) and stored in 18 csv files.
2. Generated by respondents from a distributed survey via Amazon Mechanical Turk between March 12 2016 and May 12 2016.
3. 30 FitBit users who consented to the submission of personal tracker data.
4. Data collected includes (1) physical activity recorded in minutes, (2) heart rate, (3) sleep monitoring, (4) daily activity and (5) steps.

2.2 Limitations of Data Set:

1. Data collected from 2016. User's daily activity, fitness and sleeping habits, diet and food consumption may have changed since then, hence data may not be timely or relevant.
2. Sample size of 30 female FitBit users is not representative of the entire female population.
3. As data is collected in a survey, hence unable to ascertain the integrity or accuracy of data.

2.3 Is Data ROCCC?

1. Reliable - LOW - Only has 30 respondents.
2. Original - LOW - Third party provider.
3. Comprehensive - MEDIUM - Parameters match most of Bellabeat's products parameters
4. Current - LOW - Data is 6 years old
5. Cited - LOW - Unknown

Overall, the dataset is considered bad quality and it is not recommended to produce business recommendations based on this data.

Step 3: Process

Rstudios was used to prepare and process the data.

1. Installed the following packages; dplyr, tidyr, ggplot2, and lubridate.
2. Loaded the libraries of the installed packages.
3. Loaded in csv files
4. Data was observed and checked for nulls and missing values.
5. Convert ActivityDate into date format and add a column for day of the week.

Step 4: Analyze And Share

## No. of times users logged in app across the week
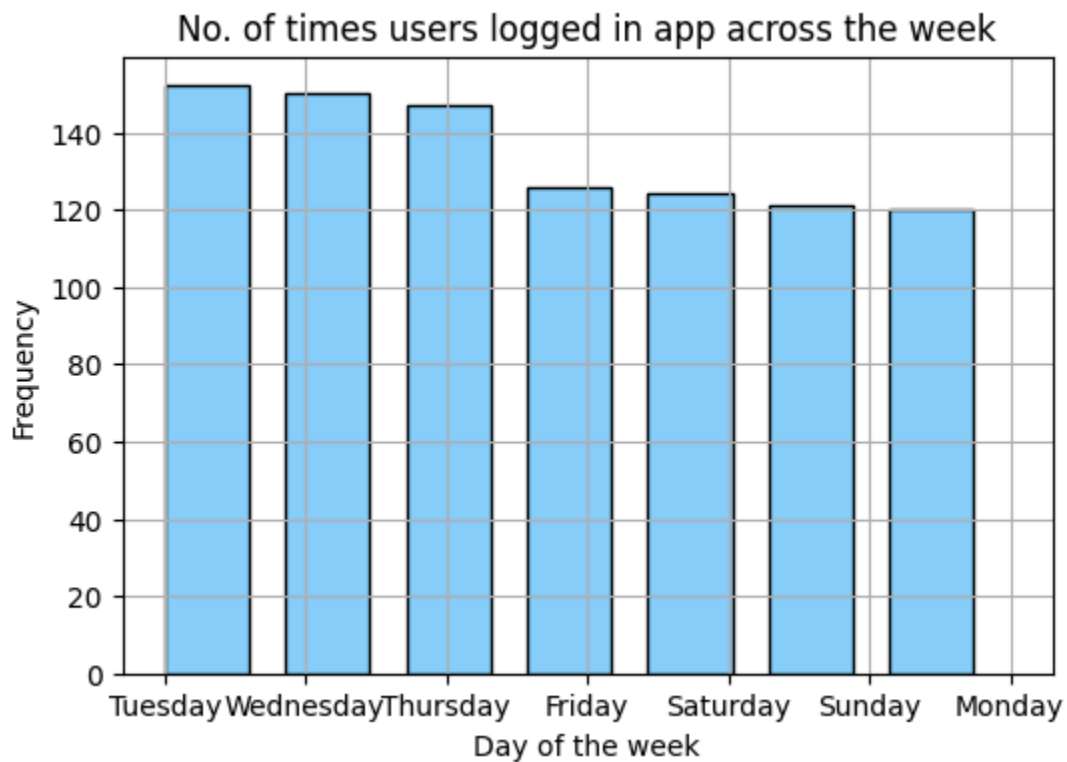
4.1 Frequency of usage across the week

1. We discovered that users prefer or remember to track their activity on the app during midweek.
2. Noting that the frequency dropped on Friday and continued on weekends and Mondays.

Calories burned for every step taken
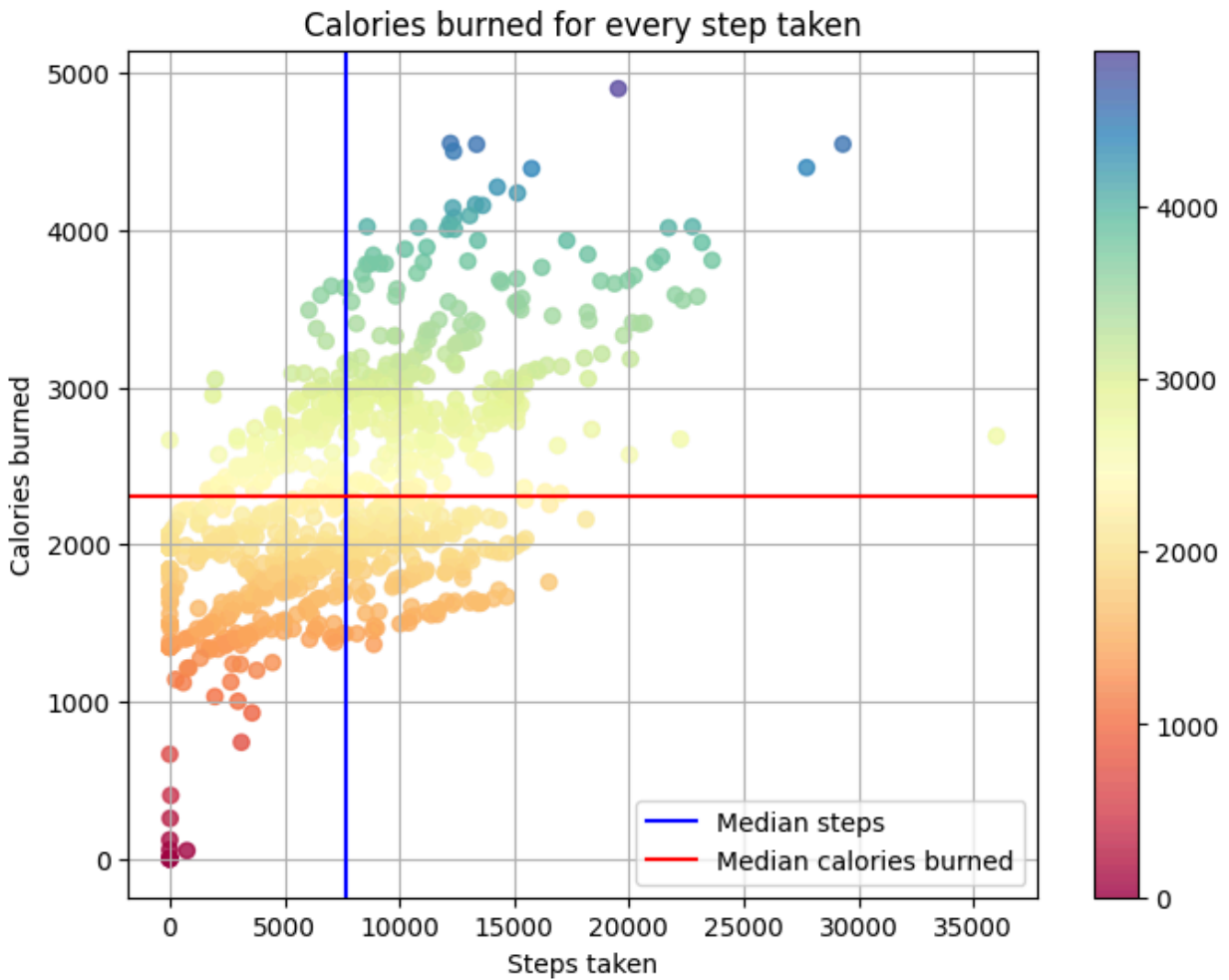
## 4.2 Calories burned for every step take

1. It is a positive correlation.
2. It is observed that intensity of calories burned increases when users are at the range of >0 to 15,000 steps with calories burn rate cooling down from 15,000 steps onwards.
3. A few outliers were observed and deduced to be caused by user's usage or errors in data collection (ie. miscalculations, data contamination or human error).

Calories burned for every hour logged
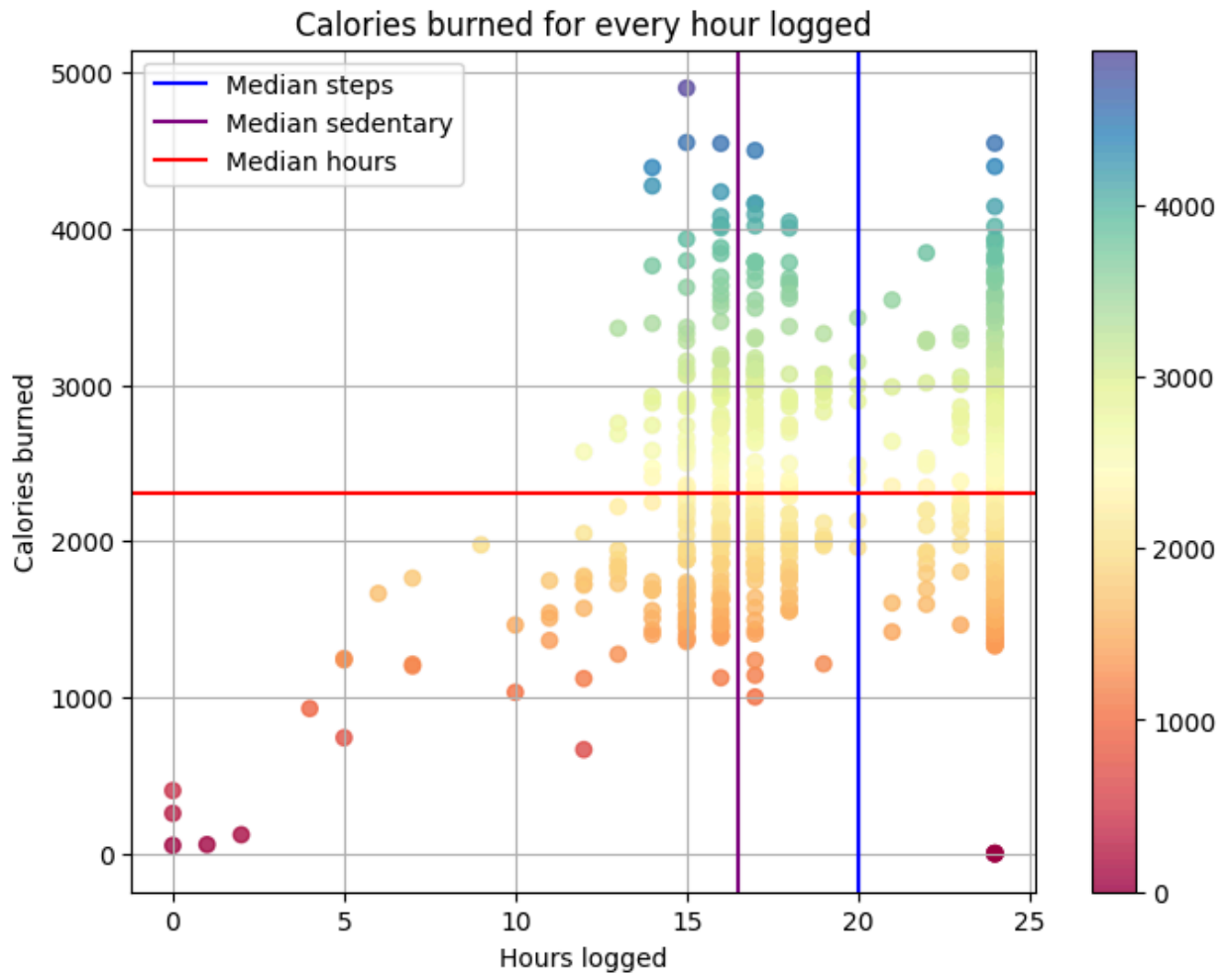
4.3 Calories burned for every hour logged

1.A small correlation whereby the increase of hours logged does not translate to more calories being burned. That is largely due to the average sedentary hours (purple line) plotted at the 16 and 17 hours range.

2. Observed the same zero value outliers and an unusual red dot at the 24 hours with zero calories burned which may be due to the same reasons as above.

Percentage of Activity in Minutes
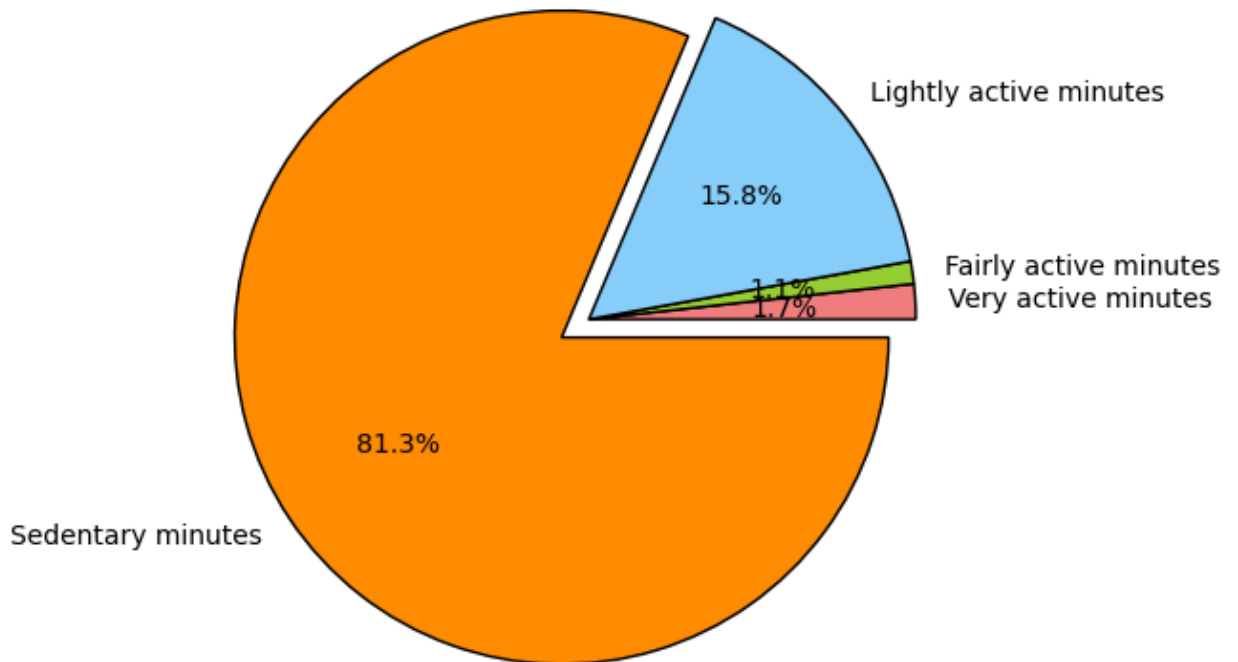
4.4 Percentage of Activity in Minutes

1. Sedentary minutes takes up the most time at 81.3%.
2. This indicates that users are using the FitBit app to log daily activities such as daily commute, running errands, or inactive movements.
3. App is rarely being used to track fitness as per the minor percentage of fairly active activity (1.1%) and very active activity (1.7%).

Step 5: Act

5.1 What are the trends identified?

1. Majority of the users are using the FitBit app to track sedentary activities and not using it for tracking their health habits.
2. Users prefer to track their activities during weekdays compared to weekends.

5.2 How could these trends help influence Bellabeat marketing strategy?

1. On weekends, Bellabeat app can also send push notifications out to users to encourage activity with prompts or challenges.
2. More accessible education towards fitness benefits, exercise suggestions, and calories intake and burnt rate information on Bellabeat app.