BellaBeat Case Study

How BellaBeat can incorporate smart device data to gain insight.

OUTLINE

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Introduction

Founded in 2013, Bellabeat is a successful small high-tech company that manufactures health-focused smart products.

The Co-Founder wants to focus on one Bellabeat product and analyze smart device usage data in order to gain insight into how people are already using their smart devices.

The chosen device for this analysis is the Bellabeat App which provides users with health data related to their activity, sleep, stress, menstrual cycle, and mindfulness habits.

Business Task: Analyze smart device usage data in order to gain insight into how consumers use non-Bellabeat smart devices.

Problem: How can Bellabeat incorporate insights from smart device usage into their products?

Data sources used

The dataset for analysis was downloaded from the **FitBit Fitness Tracker Data** uploaded on Kaggle via Public Domain. This dataset was made available through Mobius on Kaggle.

The data sets included 18 sheets from Daily to Hourly to Minutes with focus on the daily activity, calories, intensities, steps, heart rate, METs, sleep, and weight log info on personal fitness trackers data collected from thirty Fitbit users between 03/12/2016-05/12/2016.

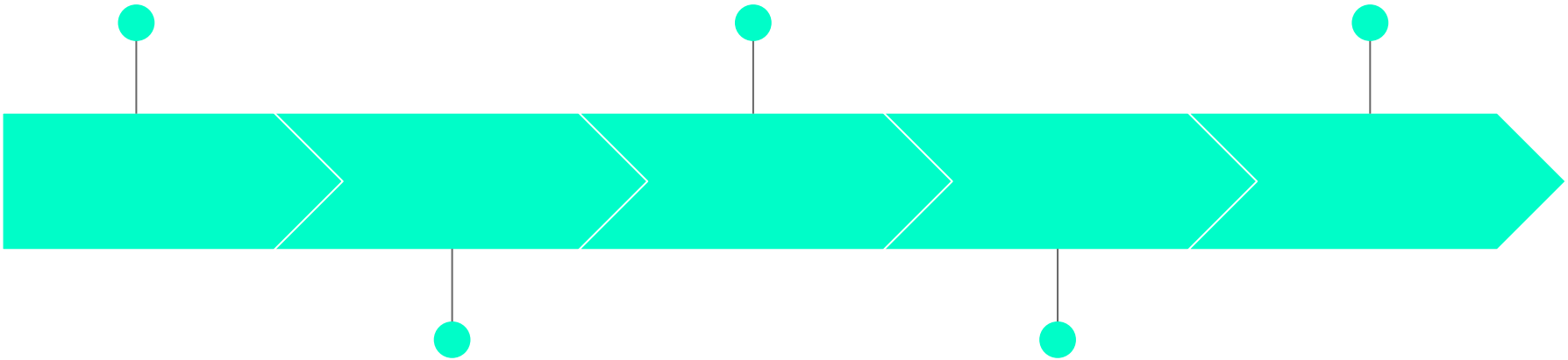
This data is deemed credible as it operates under a public domain with data made available by Mobius, a Data Scientist at Healthcare Melbourne, Victoria, Australia.

Documentation of cleaning & manipulation/ Summary of analysis

Dataset was downloaded and stored with appropriate file names.

The dates of the Daily Activity, Steps and Sleep data was converted to weekdays with 1 being Sunday and 7 being Saturday.

The dates of the datasets was converted to the format of “m/d/y”



Microsoft and R were the tools employed for this analysis.

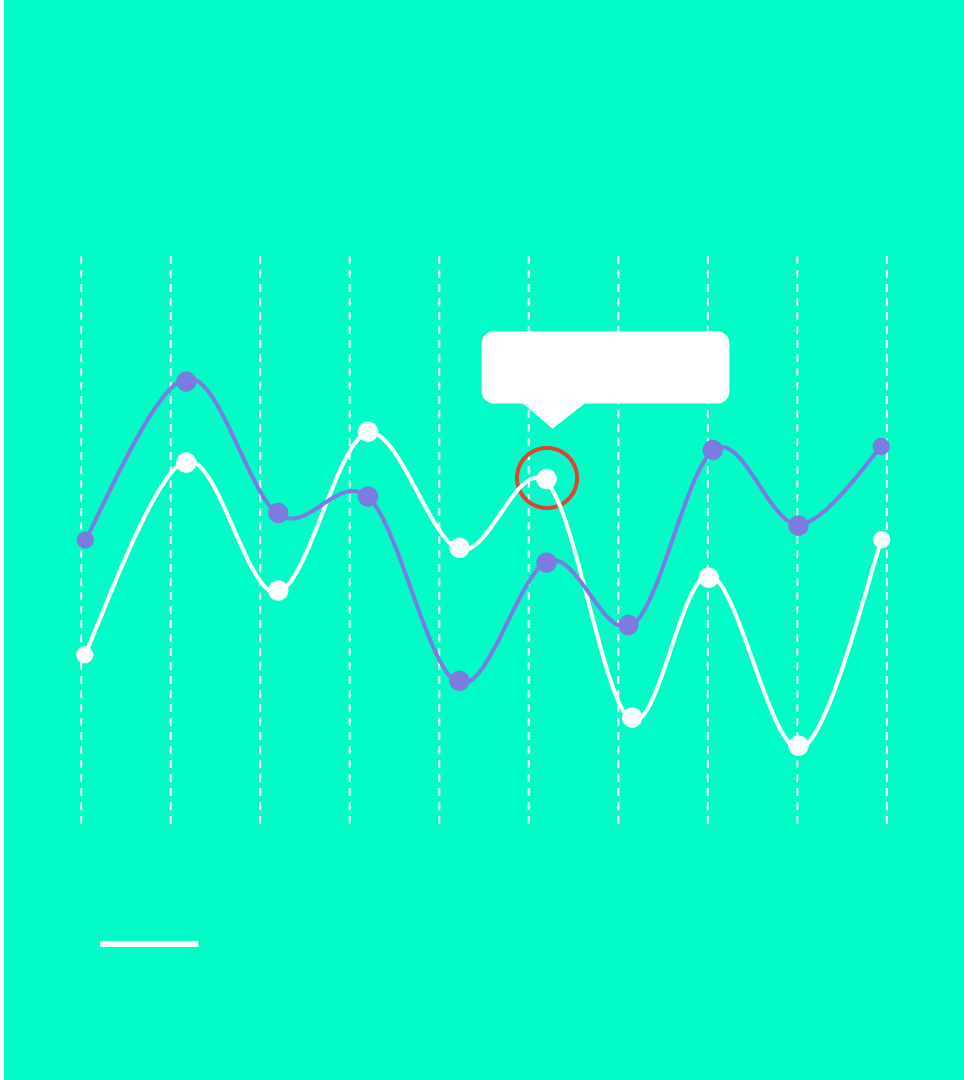
The datasets were imported into R, assigned versions and the column names cleaned.

Summary Continued.

- Summary analysis was carried out on the datasets and the following statistics were taken:
- Mean, Median and Max of total_steps, total_distance, calories, sedentary_minutes, very_active_minutes, lightly_active_minutes, moderately_active_distance, total_sleep_records, total_minutes_asleep, total_time_in_bed and step_total were calculated.
- The 3 datasets were the merged into one before visualizing.

Key Findings

Key findings from analysis



Key Findings

1. The average steps taken per day is 7638 and the average distance walked in a day is 5.490 kilometers. The recommended steps by the Centers for Disease Control and Prevention (CDC) to be taken per day is approximately 10,000 steps and the distance recommended per day is 8 kilometers per day.
2. The average calories burned per day is 2304 and the recommended daily calorie burning is 2,000 calories a day for women and 2,500 for men, which means users are right on track.
3. The users spend 991.2 minutes seated which equates to 16 hours a day, 16 hours of sitting a day is highly risky and users should try to reduce it to a recommended total of 4 hours per day.
4. Most of the users are lightly active users.

Key Findings 2

1. The average minute spent asleep is 419.5 minutes which equates to about 6.9 hours a day and 458.6 minutes in bed which equates to 7.64 hours a day. This sleep pattern needs to be increased to about 7 and above hours which is recommended for adults.
2. The users also spend 1 day sleeping 6.9 hours in a day, which they need to improve to improve their health.
3. The users take an average of 320.2 steps per hour.

Key visualizations

Visualizations from the datasets and analysis.

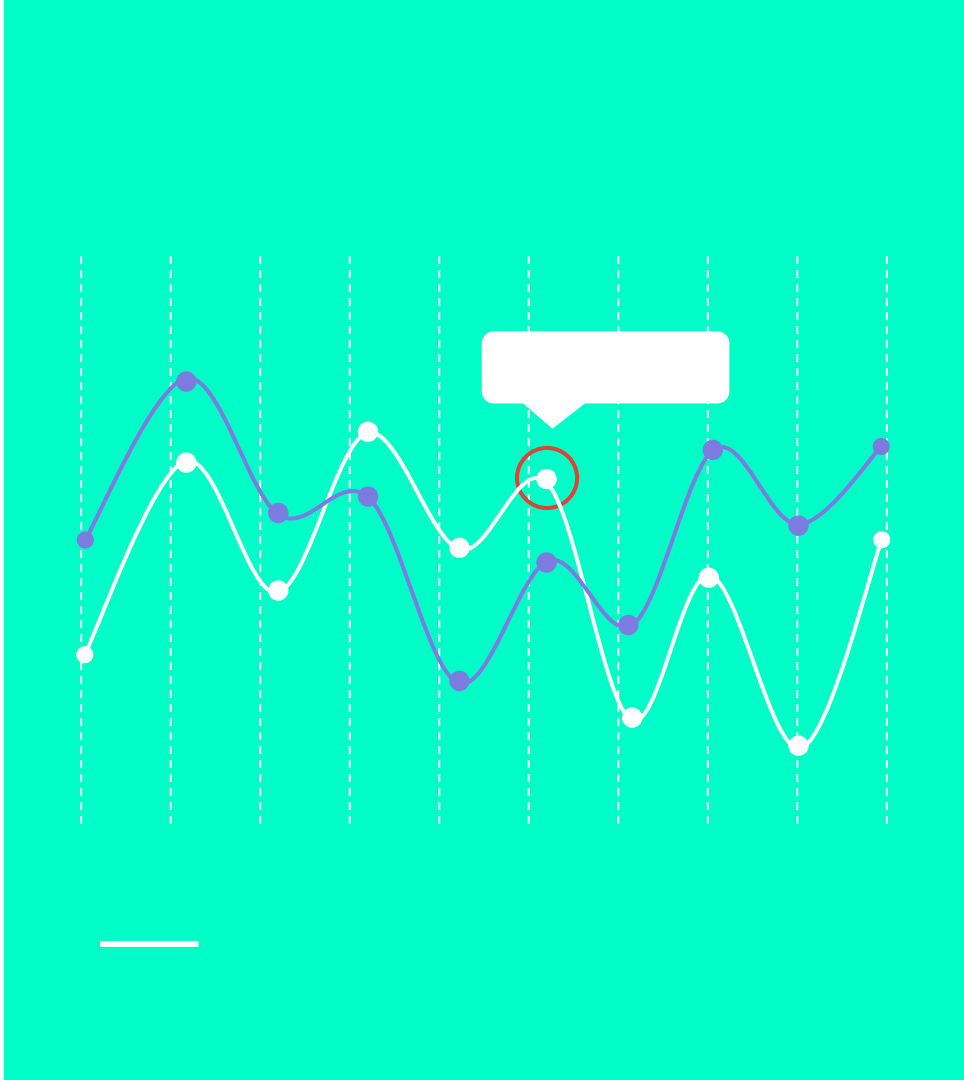


Chart 1: Steps Vs. Calories

The point chart shows a positive relationship between Total Steps and Calories which shows that the more users walk, the more calories they burn.

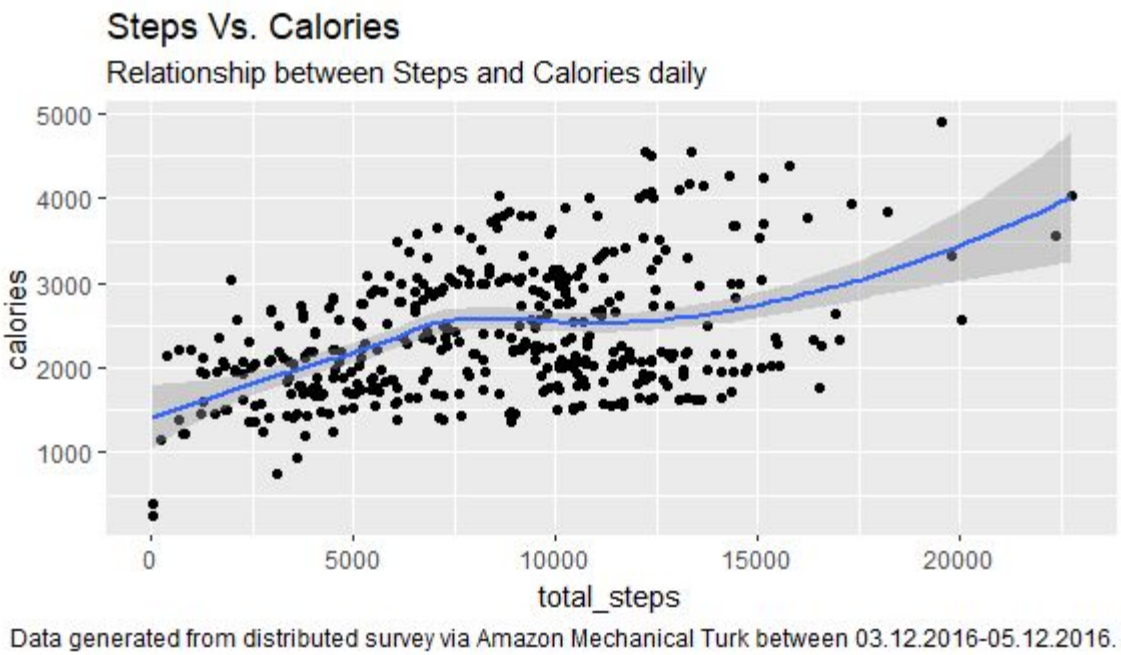


Chart 2: Total minutes asleep vs. Total minutes in bed.

The point chart shows that the more users spend in bed, the more time they spend asleep.

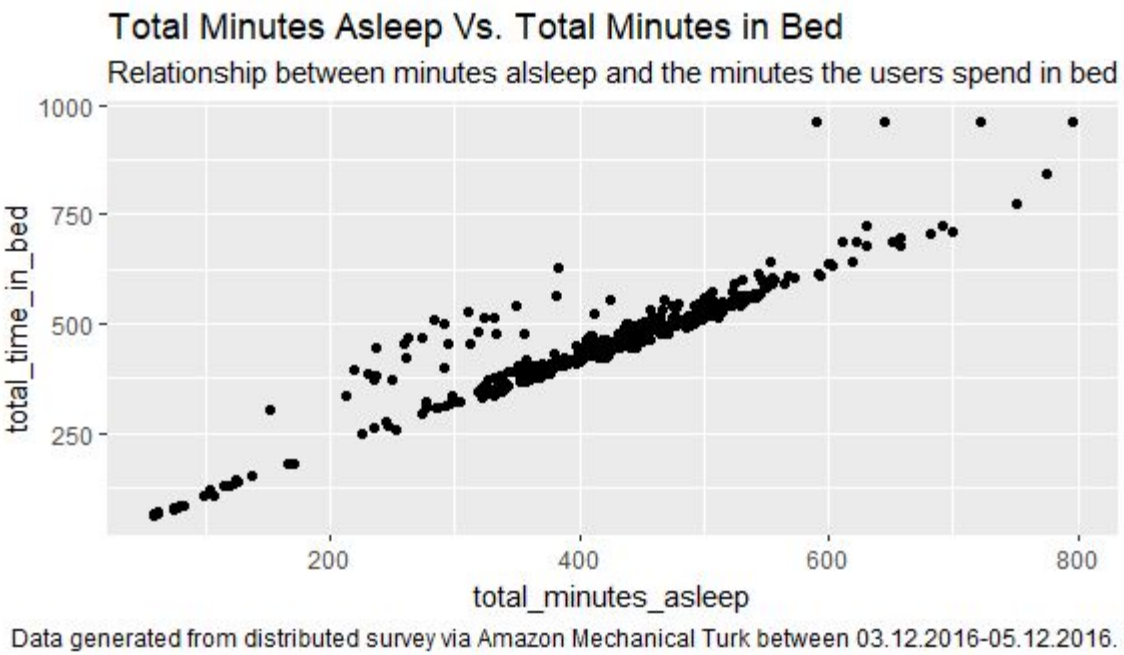


Chart 3: Sedentary Minutes vs. Total Minutes Asleep

The point chart shows a negative relationship which means that as sedentary minutes decrease, the total minutes asleep increase so users need to decrease it.

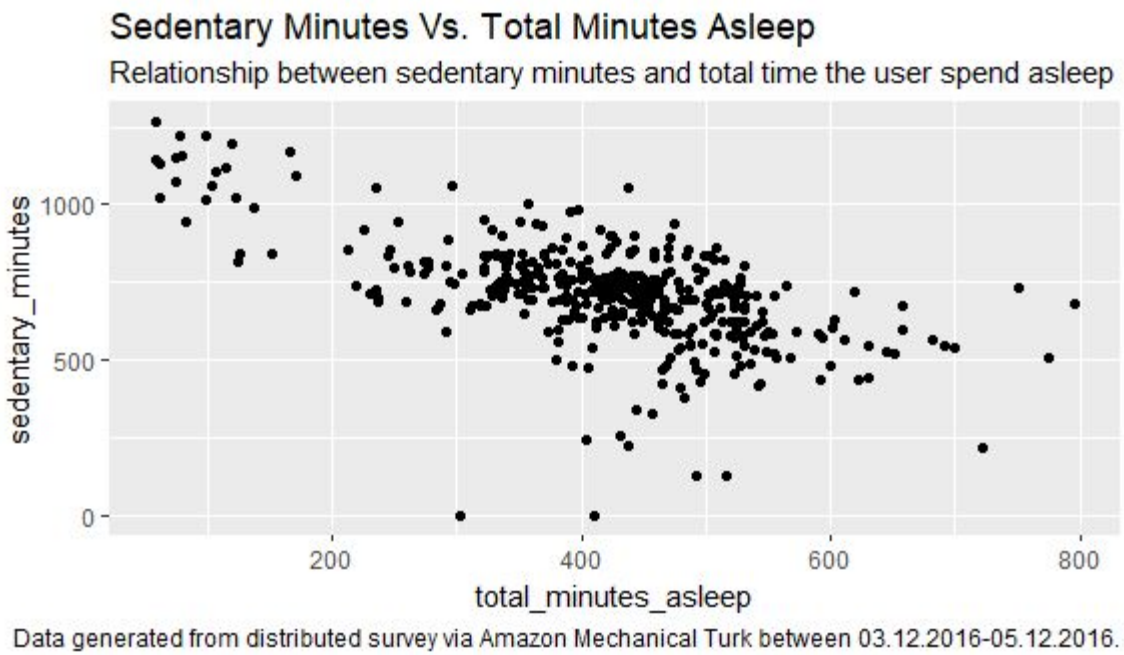
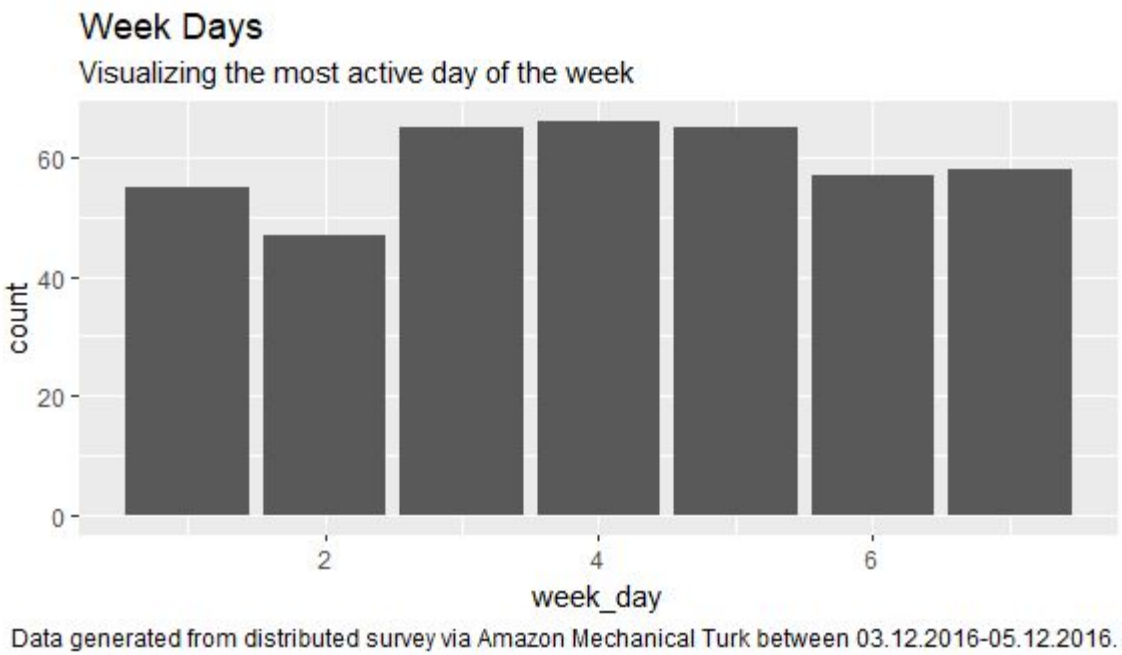


Chart 4: Week days.

This bar chart shows that the most active weekday is Wednesday.



Recommendations

In response to the business task and problem, the following are the concluding recommendations for BellaBeat to use to incorporate into their Bellabeat app and marketing strategy.

1. The Bellabeat app should recommend the total recommended steps to be walked in a day so users can make sure to walk these steps and also promote their enthusiasm by coming up with a weekly scoreboard that users can compete for.
2. The Bellabeat app can be used by users to improve their sleep patterns by analyzing their sleep patterns and suggesting suitable times for them to sleep so they can get the most sleep recommended.
3. The Bellabeat app can help the users reduce their sedentary time by suggesting activities to be done instead and also providing articles on health benefits of having shorter sedentary time through pop-notifications.
4. Bellabeat app can suggest activities to the users on the days when they are least active and also send users articles on benefits of being active.

THANK YOU!