

# ASK

**Business Task:** Analyze the trend of smart device usage of non-Bellabeat users and use the insights to help further improve the company's marketing strategy.

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# PREPARE

## Data Source:

The public data set called FitBit Fitness Tracker Data by Kaggle was used for this study. The data consists of 30 FitBit users with their personal fitness tracker including their minute of physical activity, heart rate, step count, weight, MET, and calories. The data was recorded from March to May of 2016.

3 datasets such as the daily activity, hourly steps, and sleep were used to analyze the overall usage of the participants of their smart devices.

## Tools:

Data Cleaning: Microsoft Excel

Data Analysis: Bigquery

Visualization: Tableau Public

## Limitations:

- Small sample size: Only 33 individuals participated in the survey.
- Unknown gender and demographic information: Gender and demographic information of the users were not indicated.
- Data is out of date: Data was collected in 2016, which can affect the relevance and accuracy of the findings.
- Incomplete data: Only 8 out of 33 users recorded their weight and 24 out of 33 users recorded their sleep.

## Data Preparation:

Blank/Null Values: checked for blank/null values using filter in Excel

Duplicate Values: validated the number of IDs using COUNT(UNIQUE...) function in Excel

Data Type: validated the datatype through Bigquery

## Data Overview:

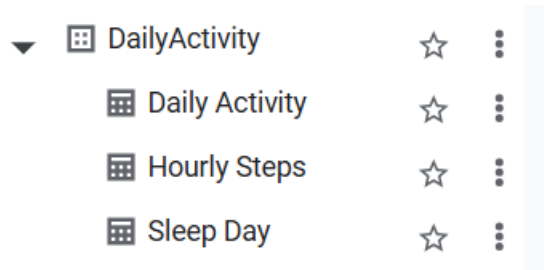
33 users recorded their daily activity

22 users recorded their sleep

8 users recorded their weight

## PROCESS

Daily activity, hourly steps and sleep day files were loaded in Bigquery.



### Average steps and distance

Row	avg_steps	avg_distance
1	7637.91	5.49

### Average steps per day

Row	day	avg_steps
1	Sunday	6933.23
2	Monday	7780.87
3	Tuesday	8125.01
4	Wednesday	7559.37
5	Thursday	7405.84
6	Friday	7448.23
7	Saturday	8152.98

### Average step per hour

Row	hour	avg_step
1	00:00	42.19
2	01:00	23.1
3	02:00	17.11
4	03:00	6.43
5	04:00	12.7
6	05:00	43.87
7	06:00	178.51
8	07:00	306.05
9	08:00	427.54
10	09:00	433.3
11	10:00	481.67
12	11:00	456.89
13	12:00	548.64
14	13:00	537.7
15	14:00	540.51
16	15:00	406.32
17	16:00	496.85
18	17:00	550.23
19	18:00	599.17
20	19:00	583.39
21	20:00	353.91
22	21:00	308.14
23	22:00	237.99

## Average active minutes

Row	Avg_Very_Active	Avg_Fairly_Active	Avg_Lightly_Active	Avg_Sedentary
1	21.16	13.56	192.81	991.21

## Average sleep per day

Row	day	avg_hour_of_sleep
1	Sunday	8.0
2	Monday	7.0
3	Tuesday	7.0
4	Wednesday	7.0
5	Thursday	7.0
6	Friday	7.0
7	Saturday	7.0

## Sleep Log

Row	day_number	num_of_users
1	31	3
2	28	3
3	27	1
4	26	2
5	25	1
6	24	1
7	23	1
8	18	1
9	15	2
10	8	1
11	5	2
12	4	1
13	3	3
14	2	1
15	1	1

## ANALYZE

### Average step and distance

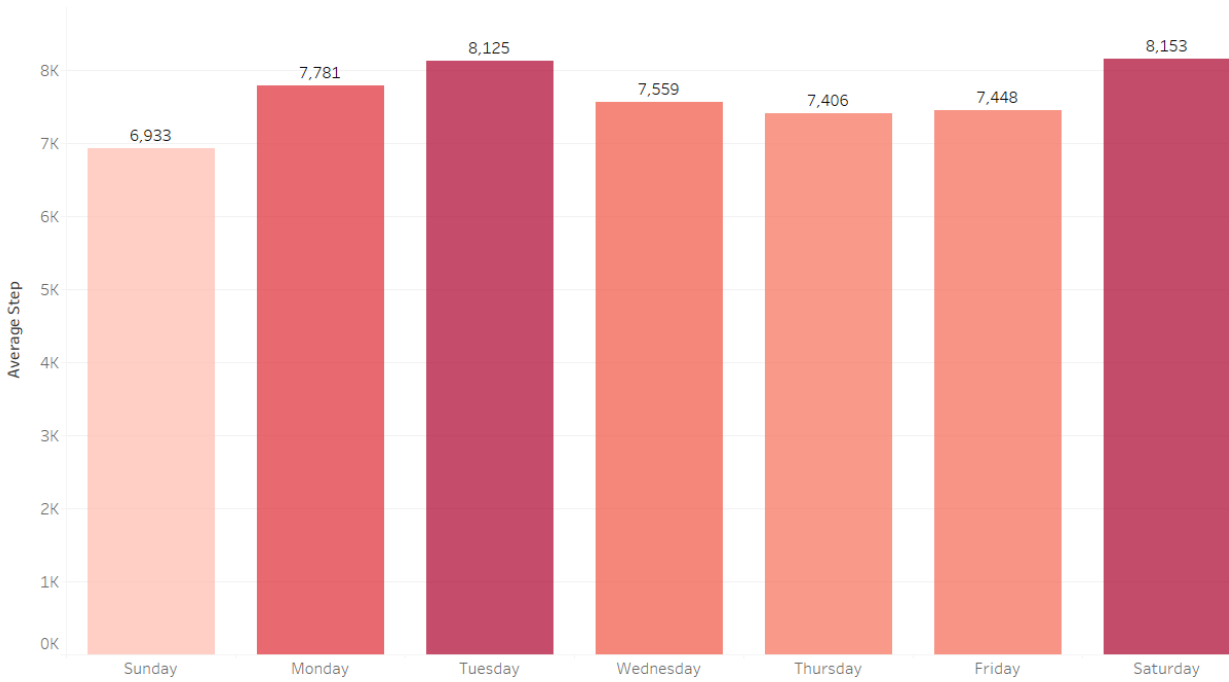
The average steps that users take is 7,638 steps with a distance of 5.49. CDC's or (Center for Disease Control and Prevention) recommended steps per day is 10,000 which is about 8 km or 5 miles to stay active and healthy.

Row	avg_steps	avg_distance
1	7637.91	5.49

### Average step per day

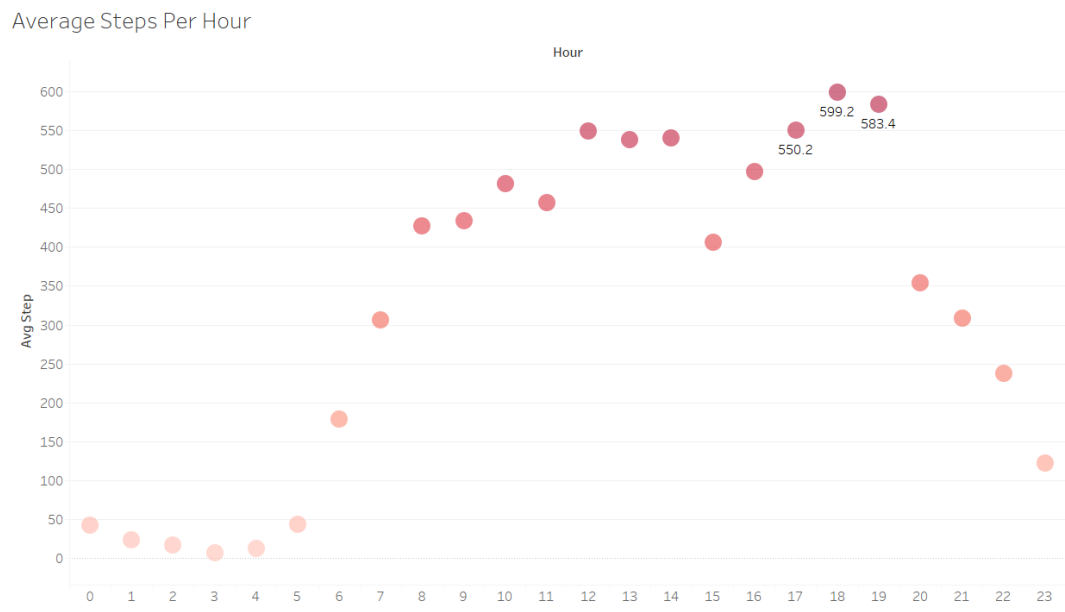
Users are mostly taking their steps on Saturday and least on Sunday. Other days are relatively high as well which means that users consider walking as one of their activities to stay active.

## Average Step per Day



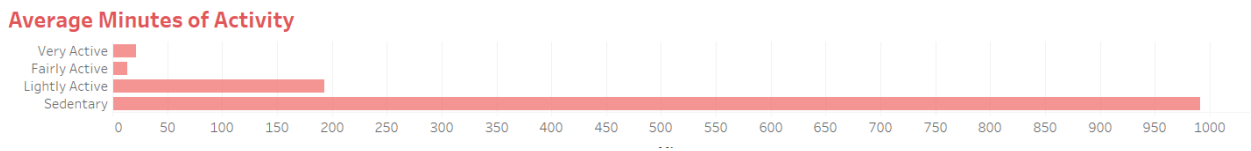
## Average Step per Hour

Most of the steps are being taken between 5PM to 7PM. This indicates that users are taking steps after their work or school.



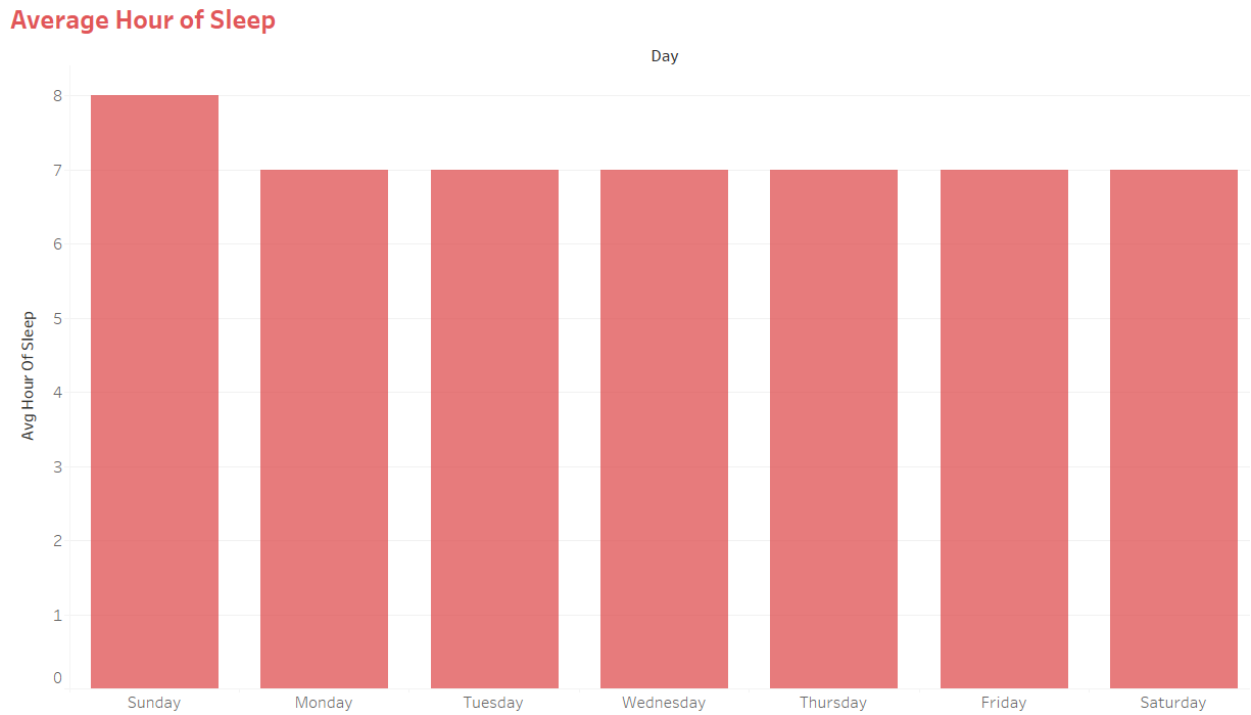
## Minutes of Activity

Users are only spending an average of 227.6 minutes or 3 hours (very active, fairly active, and lightly active) being active while they spend most of their time on sedentary at 991.2 minutes or 16 hours



Sleep Duration by Day

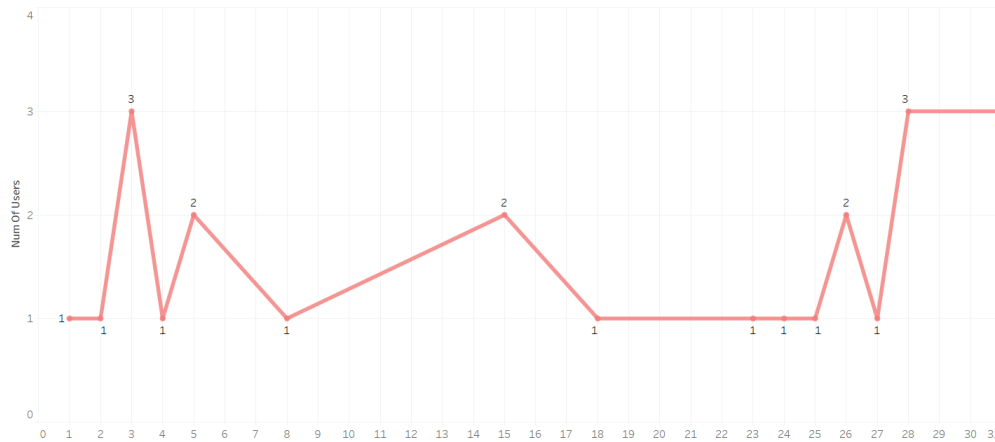
Users are mostly having a 7-hour sleep from Monday to Saturday and an hour more sleep on Sunday



Sleep Log

Only 3 of the users wore their smart device to sleep consistently throughout the 31-day period. This could indicate that users are not comfortable wearing the tracker in their sleep.

Tracker Usage at Night



## SHARE

Link for the Tableau Dashboard: [Bellabeat | Tableau Public](#)

## ACT

Recommendations:

For potential Customers:

- Advertisement on Events: Do advertisement on fun runs or walkathon events for people to be more familiar with Bellabeat's products.
- Timing of Advertisement: Bellabeat can time their advertisement during the morning when people are just starting the day and, on the afternoon, when people just finished work or school.
- Product Comfortability: Leaf can be advertised as a fashionable accessory during the day and an easy to wear item at night that users can wear comfortably even at sleep.

For existing users:

- Challenges and Rewards: Create challenges through the Bellabeat app to help users become more motivated in doing different activities. Through those challenges, users can earn points which they can use in purchasing other Bellabeat products.
- Streak: Bellabeat can introduce streak system where users can earn badge every week if they consistently walk 10,000 steps all throughout the week. There could be ranking per week where top 5 walkers will be awarded with points. This would encourage users to walk 10,000 steps daily.
- Personalized Notification: Provide a personal notification to every user when the app tracked a prolonged sedentary minute to encourage users to be more active.