Product: Time
Description: Wellness watch that connects to Bellabeat app that provides the user with insights about their daily wellness.
Data: Activity, Sleep, Stress

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

Deliverables:

1. A clear summary of the business task
2. A description of all data sources used
3. Documentation of any cleaning or manipulation of data
4. A summary of your analysis
5. Supporting visualizations and key findings 6. Your top high-level content recommendations based on your analysis

Ask

Business task: To analyze the data of "Fitbit" fitness tracker and provide recommendations based on trends for marketing strategy of "Time" product.

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?

My questions:
1. What activities are involved when the user uses the product?
2. Can the sleep data be used to provide insights to marketing?
3. Can the stress data be used to provide insights to marketing?

Stakeholders:
Urška Sršen - Cofounder and CCO

Sando Mur - Cofounder
Bellabeat company

Note: Identifying the trends could help me about this problem, once I see the data, I'll add more questions here.

Prepare

Data to be used:

- DailyActivity_merged
  - includes user id, date, time, total steps, total distance, activity intensity, and calories burned.

- dailyCalories_merged
  - user id, date, and calories burned per day

- dailySteps_merged
  - user id, date, and total steps per day

- sleepDay_merged
  - user id, date, total sleep record, total minutes asleep and total minutes in bed

Data format: Csv, wide format
License: Public Domain
No. of Respondents: 30
Date: March 12, 2016 - May 12, 2016
Source: https://zenodo.org/record/53894#.YInoHLUza01
Collection methodology: Preprocessed
Location: Google sheet in work account

Reliable: Y
Original: Y
Comprehensive: Y
Current: N
Cited: Y, one citation

The dataset collection process is written in its description, citing that this data is collected with the consent of the user through survey via Amazon Mechanical Turf

Process

Tool: Excel

Reason: Excel can handle this amount of data and has features such as: pivot table, charts, and data cleaning tools.

Cleaning Process Documentation:

1. Filtered the calories burned to “0” in DailyActivity_merged
2. Removed 4 rows that contain 0 values in the calories column “SedentaryMinutes” column.
3. Removed 13 rows starting from 354 to 366, that only contains data in SedentaryMinutes and Calories.
   Assumptions: Replicated data. Same datas in two columns.
4. Removed 60 rows that has “0” total steps.
5. Removed 4 rows that contains “0” Calories in dailyCalories_merged.
6. Removed 77 rows that contains “0” Total Steps in dailySteps_merged.
7. Changes the format of Sleepday column to “Date” in sleepDay_merged.
8. Changed the format to “numbers” of TotalSleepRecords, TotalMinutesAsleep, and TotalTimeInBed in sleepDay_merged.
9. Changed the format of ActivityDay and StepTotal to “Date” and “Numbers” in dailySteps_merged.
10. Changed the format of ActivityDay and Calories to “Date” and “Number” in dailyCalories_merged.
11. Change the format to numbers and most are rounded to 2 decimal places in dailyActivity_merged.
12. Sort sheet TotalSteps column in descending order in dailyActivity_merged

13. Apply “Trim whitespaces” tool to all tables

Upon checking the no. of users, the description of the data set stated that the survey was distributed to 30 participants. By counting the unique id no. in the data set, the total is 33. The data set has been checked for duplication or possible typographical error, but no error was found.

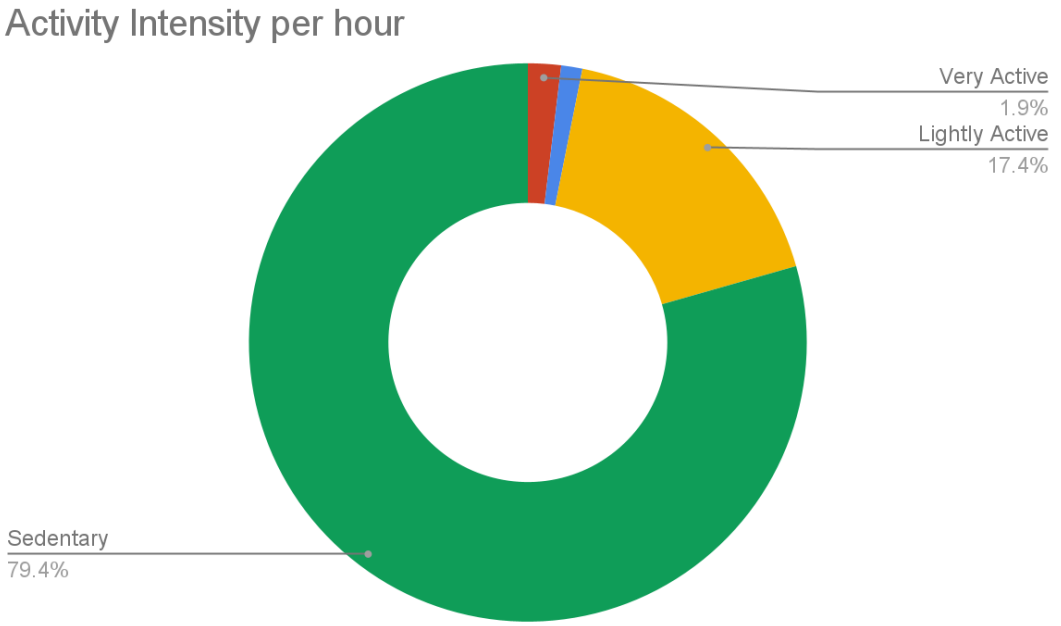
Assumption: The dataset may contain data of one user with two unique id. Based on the given information, there is no way to identify, thus it will be included in the analysis.

Analyze

The “Time” product features monitoring for Activity, Sleep, and stress. In order to create a market strategy for this product, a data analysis was performed on a similar product’s data fitbit and here is the analysis.

Activity

The highest number of users who recorded their activity was 33, and the average user per day is 28. The minimum number of users was 17.



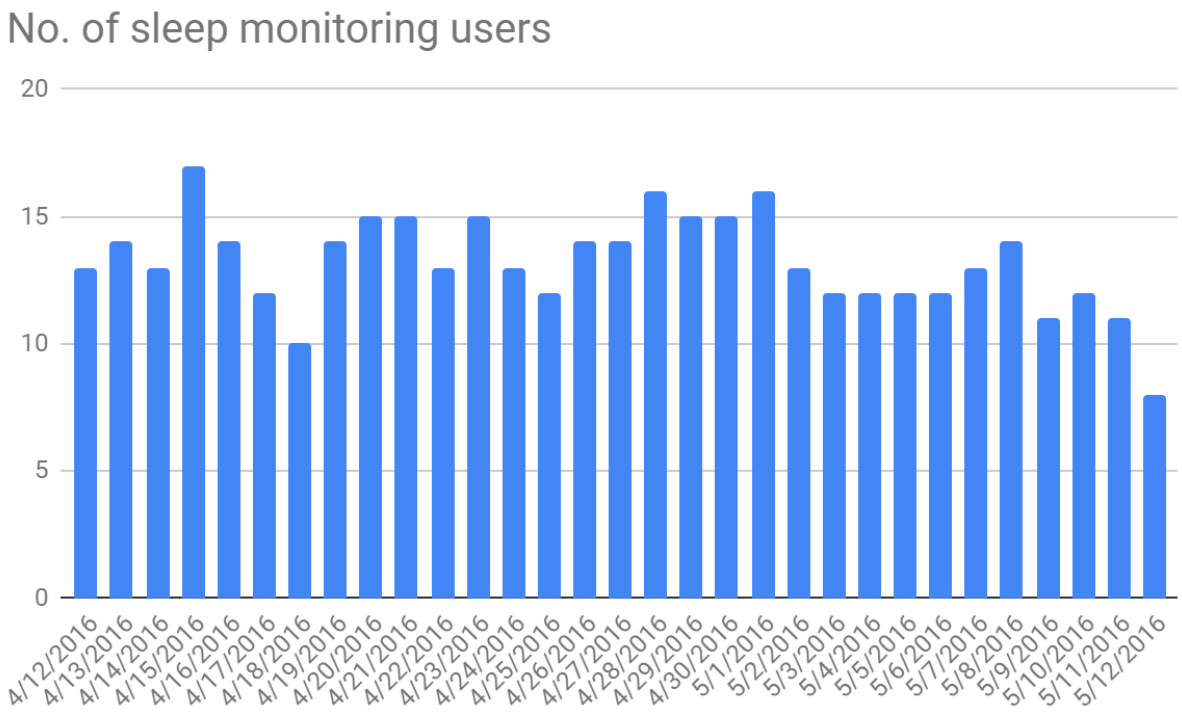
The graph shows that sedentary activities have the highest recorded hour.

So what are these activities:

- *Sedentary - less than 30 min a day of exercise, walking, sitting or lying down (Spend time sitting all day)*
- *Lightly Active - intentional exercise everyday for at least 30 min. Walking for 30 min at 4mph is also considered lightly active.*
- *Fairly Active - intentional exercise everyday, jogging, and jobs that require more physical activity.*
- *Very Active - intentional exercise everyday, vigorous exercises.*

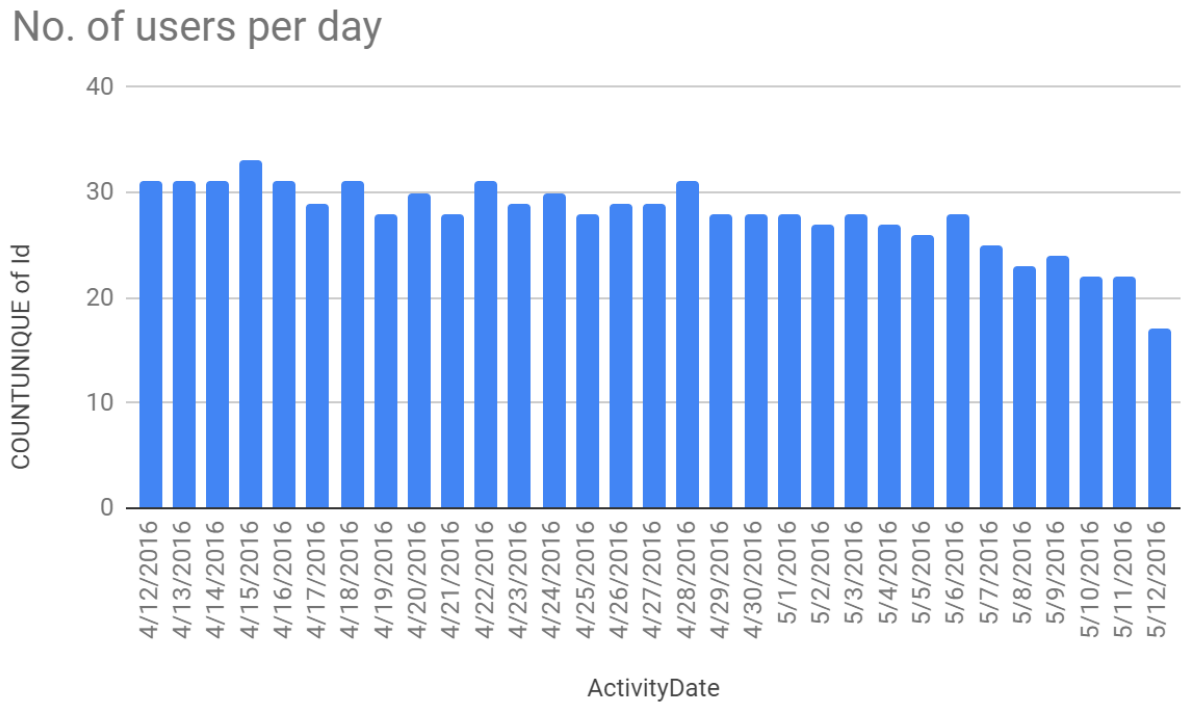
Source: https://funnmedia.zendesk.com/hc/en-us/articles/360040360231-What-Are-Activity-Levels-and-How-Do-They-Work-

Sleep



The maximum number of users who use this device for sleep monitoring in the span of 2 months is 17. That is 51.5% of users. While the minimum is 8, and the average is 13.2.

User



The graph shows the number of users using the device for 2 months. There is a small decline in the users towards the end of the experiment period. The reason for the decline cannot be determined with the limited data but it's important to take note that the last data point is also the least in activity, and sleep since there are less users who recorded their activity.

Share

Recommendations:

- Market the “Time” product to people who engage in sedentary lifestyle.
- Only a small number of users use the fitbit for sleep monitoring, the possible cause may be linked to having a watch while sleeping is uncomfortable. Designing the product that is comfortable when sleeping is recommended.
- The “ Time” product is perfect for casual lifestyle, conceptualizing the product ad that features a sedentary lifestyle is recommended.

Conclusion

Analyzing the data of fitbit leads to discovering that most people who use the device engage in sedentary lifestyle. With these insights, the marketing team can create marketing ads featuring the usefulness of the “Time” product for sedentary activities. In addition, only 51.5 % of the participants used the product for sleep monitoring activity. One possible reason for this is that wearing a watch during sleep is uncomfortable. These insights could help the designer to design a product that is comfortable to use when lying down or sleeping.