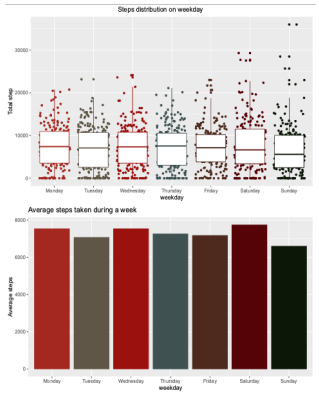
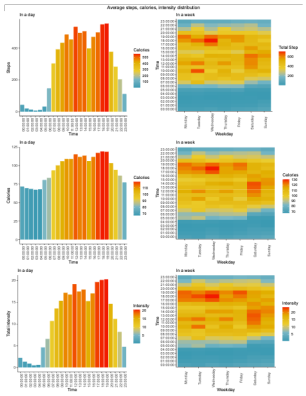
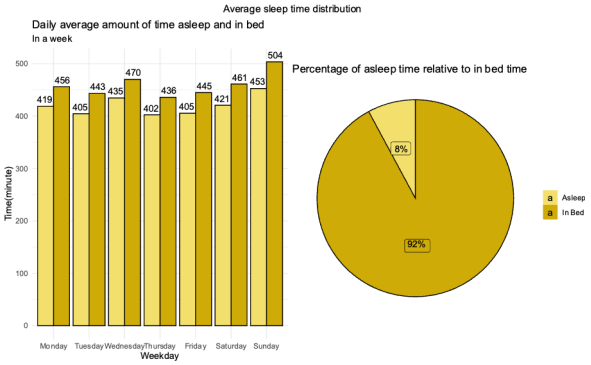
Bellabeat

Marketing data analytics case study

Google Data Analytics capstone project







Mason Phung – January 2023

Introduction

Bellabeat - Sweden high-tech company

- Founded by Urška Sršen and Sando Mur in 2013, Bellabeat is known not only as a rapid developing high-tech company that manufactures health-focused smart products, but also a tech-driven wellness company for women.
- By 2016, Bellabeat had launched multiple products along with opening many branches worldwide. Bellabeat products can be found on their own e-commerce channel as well as numerous online retailers.
- Realizing the huge opportunity to grow in the online market, Bellabeat has been focusing on analyzing consumer usage data in order to understand the habit and preferences of their potential customers.
- **Bellabeat current products:**
  - Bellabeat app
  - “Leaf” (tracker, can be worn as accessories)
  - “Time” (watch)
  - “Spring” (water bottle with smart tech)
  - Bellabeat membership (subscription based)

Case summary

Key focus & audience

- **The case study will focus on:**
  - The analysis of the smart device usage data (Provided by the company)
  - Suggestions for future marketing campaigns of Bellabeat's products based on the insights
- **Key questions:**
  - What are some trends in smart device usage?
  - How could these trends apply to Bellabeat campaign?
  - How could these trends help influence marketing strategy?
- **Stakeholders:**
  - Bellabeat executive team
  - Bellabeat Marketing team

Case summary

Work direction

1. Download data from source website & process usable data
2. Clean data (details in markdown and coding file)
3. Analyze datasets to find insights
4. Visualize & conduct report

Analytics

Data

- Basic information:
  - Fitbit Fitness Tracker data pack is generated by respondents to a distributed survey via Amazon Mechanical Turk between 2016/03/12 to 2016/05/12. The data is available on Kaggle and Mobius as open-source.
  - The data pack includes 18 Comma-separated values files (.csv) record the activities, calories, intensities, foot steps and weight loss of 35 users in 62 days.
- Only ***daily activity***, ***daily sleep*** and ***hourly activity*** datasets will be used for this case study

Comments

Data limitations

- **Small data size** with **only local population**, which may not represent the whole population
- **Lack of demographics** data
- Data’s short date length

-> Bias possibility

- Hourly and daily datasets are synced but still have some small errors

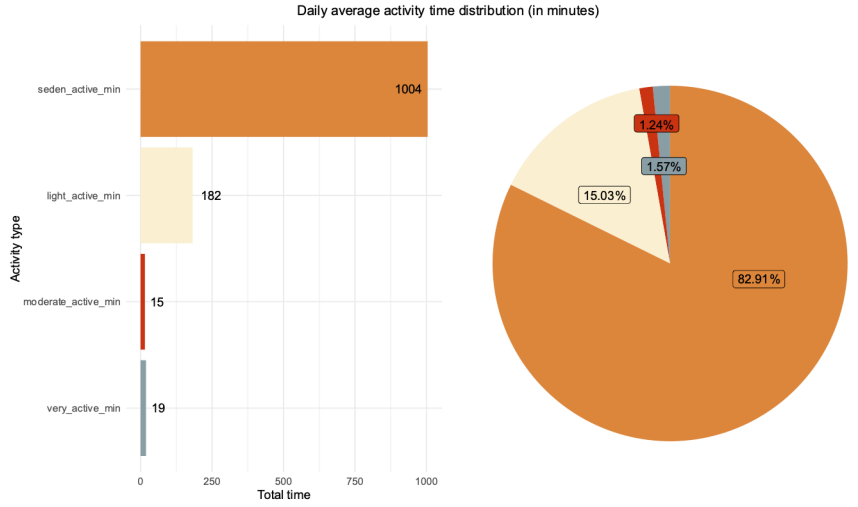
Analytics

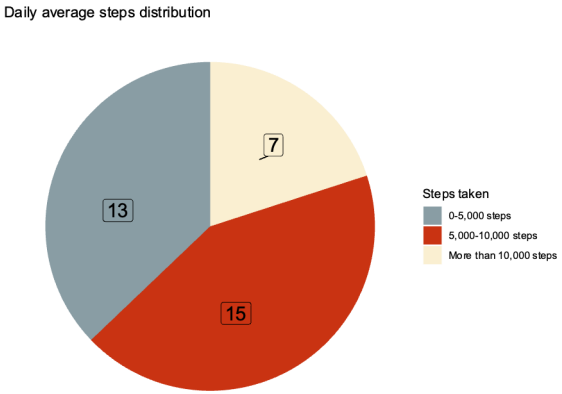
Daily activity

On daily average

82.9%	17.1%	7281
Sedentary time	Active time	Walking steps
16.6	3.6	5.2 km
Sedentary hours	Active hours	Walking distance

- People spend most of the time in the day sedentary (**82,9%**) and about **3.6 hours** a day for different types of activities.
- The amount of time recorded from the participants in the data suggests that **people wear the tracker most of the time in a day, even during normal activities or workout**.





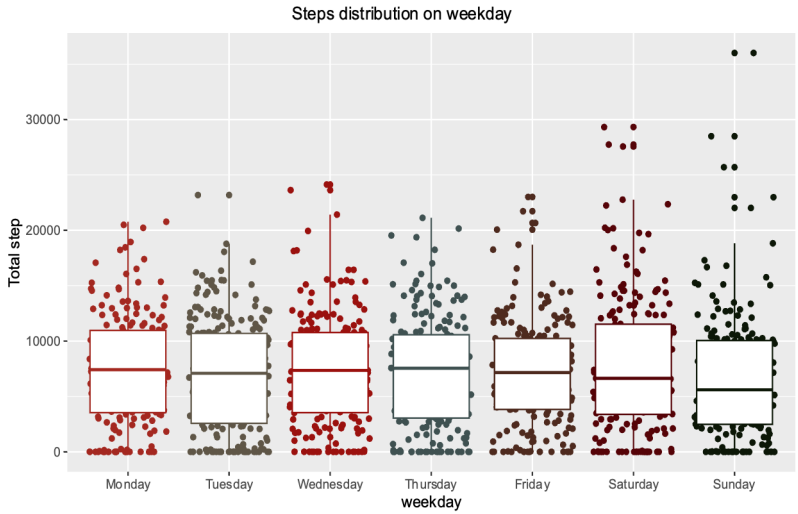
Majority (80% - 28/35) of the participants walk less than 10,000 steps a day*

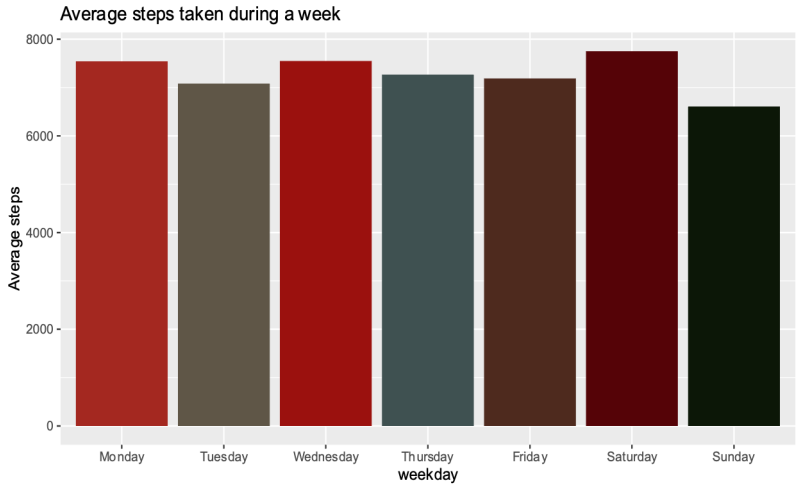
** According to researches, taking at least 10,000 steps a day is suggested for a strong health*

Analytics

Daily activity

- Most active days: **Saturday, Monday, Wednesday**
- During the week, people tend to walk less than 15,000 steps
- In the weekend, the boundary opens up to more than 30,000 and many more people take more than 15,000 steps a day.
- **Sunday is the least active day, with the least average steps taken**

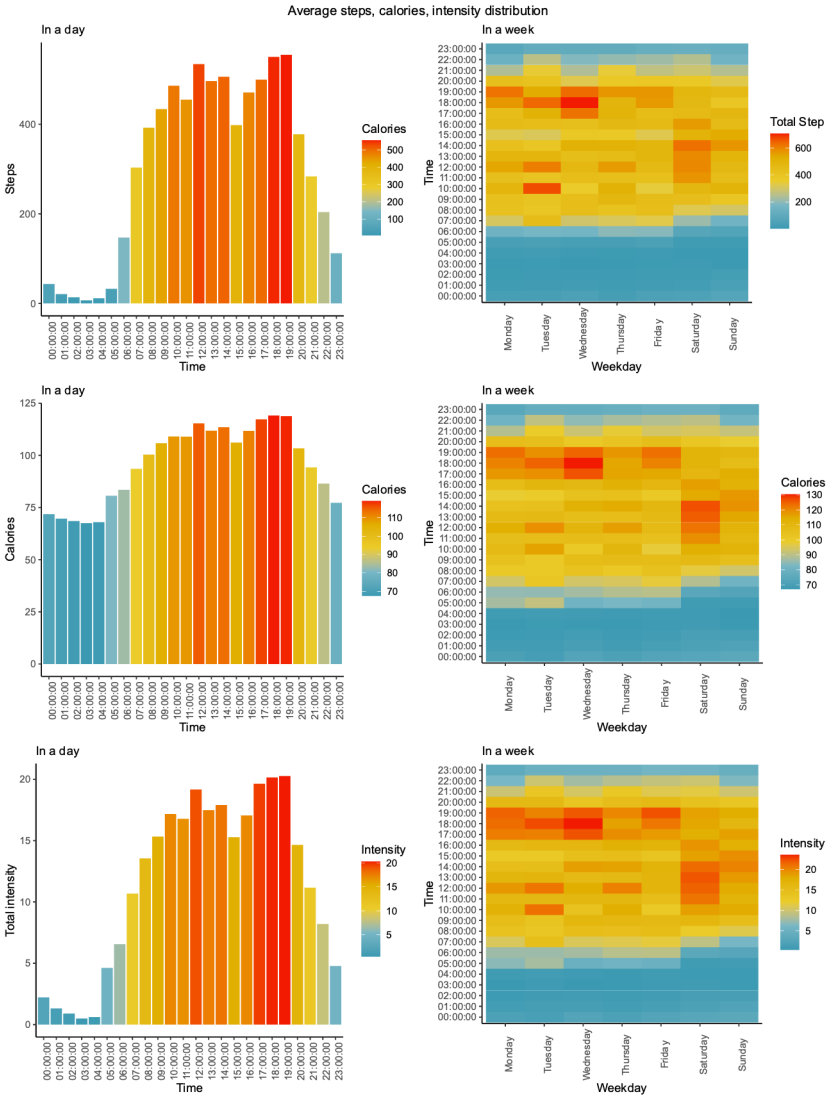




Analytics

Daily activity

- Common active time: from **7h to 21h**
- **12h-14h** and **17h-19h** are the two most active time with the highest amount of steps taken, calories burnt and total intensity
- These 2 time periods are all meal time (while the latter is the getting off work time, workouts and also people may move more to prepare for their dinner)
- At the weekend, people are usually **start their days later** but **move less in the evening** and still having the **same rest time at the end of the day**.
- **The heat maps suggest the active pattern of normal office workers**



Analytics

Daily sleep

Only

24

users

Possess sleep records out of 35 users

Sunday
Wednesday

Longest sleep

7

hours

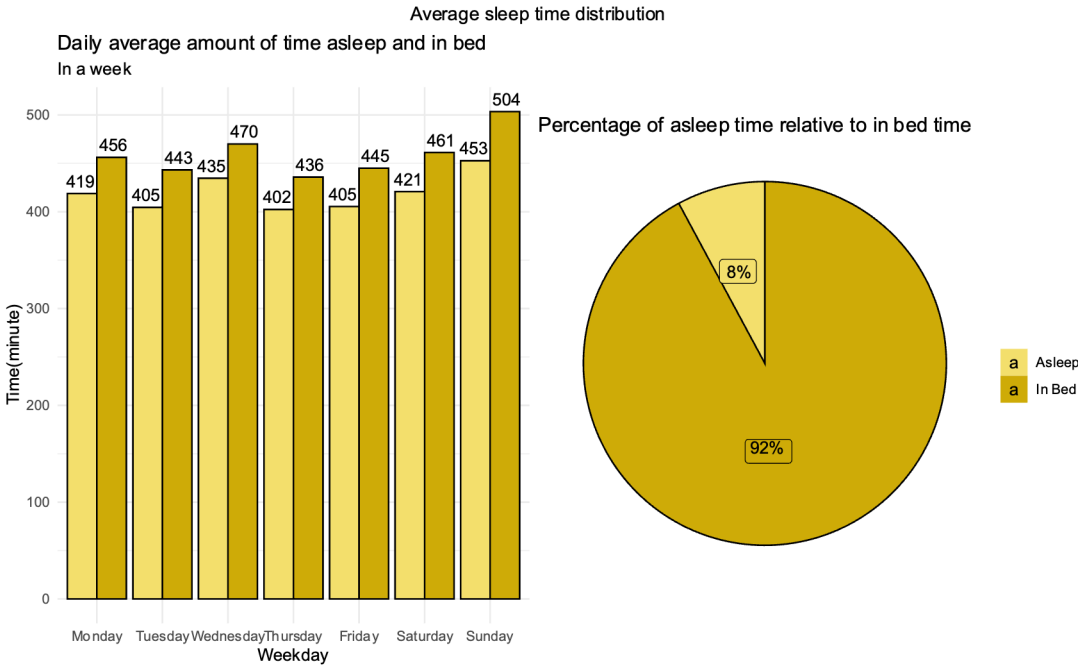
Average sleep time

Users spend on average

39

mins

In bed without sleeping



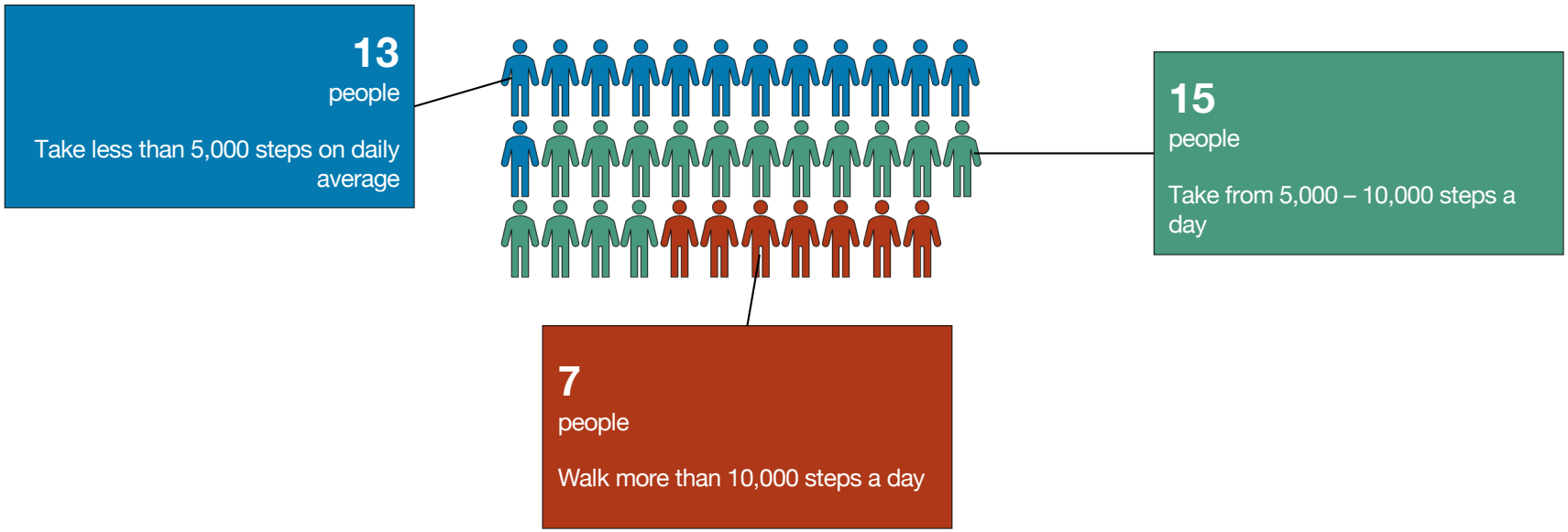
- **11 users** don't wear the tracker device during sleep, this can be due to **personal preference** or **the device's lack of convenience** issue (need more information).

Analytics

Users’ segmentation

By daily average steps

Users will be divided into groups based on their daily average steps



Analytics

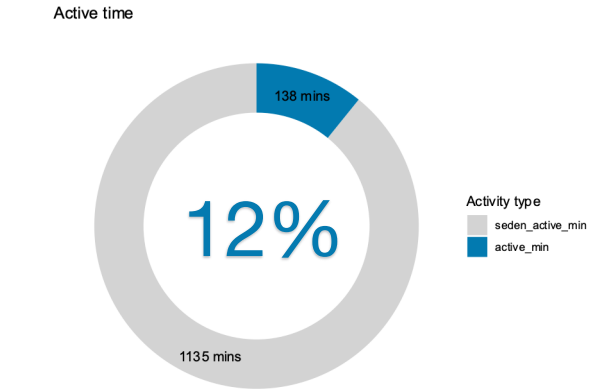
G1: Take less than 5,000 steps on daily average

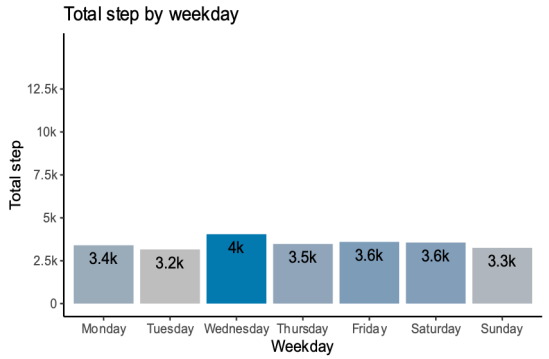
36
Average tracker using days

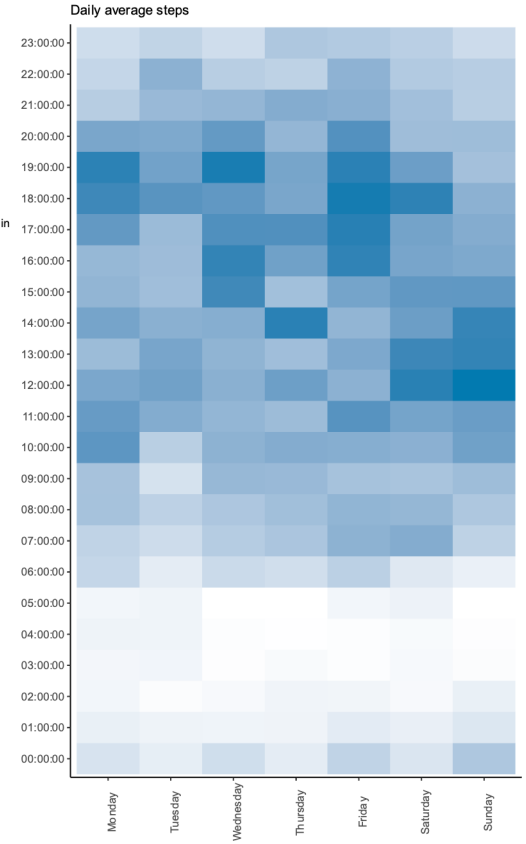
2.15 km
Average daily distance travelled

Wednesday
Most active day

- This group of users only spend **2 hours avg/day active**, including light & intensive activities
- Most active time in a day at **17-19pm**
- Heatmap shows evidence of **frequent late night activity**, at sleep hours
- Aside from Wednesday, others day's activities are **quite similar** with **not many differences in travelled steps**
- This group **often** wears the tracking device, with **4 days avg/week**
- The data suggests a pattern of office workers, **not active and walk in short distance**. Take not much exercise. There is a **disordered pattern** in activity.





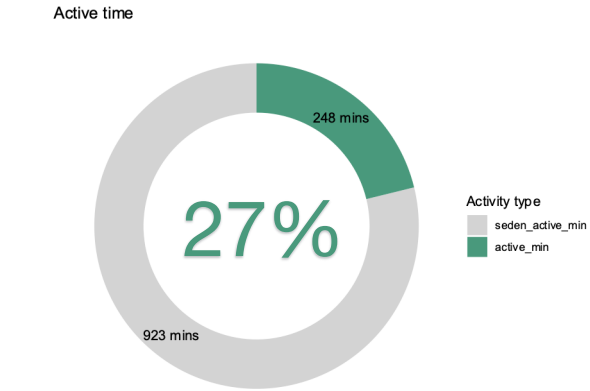


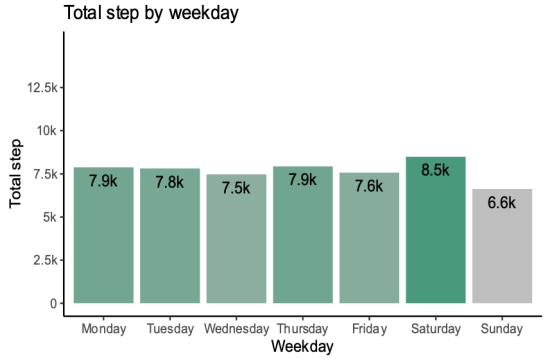
Analytics

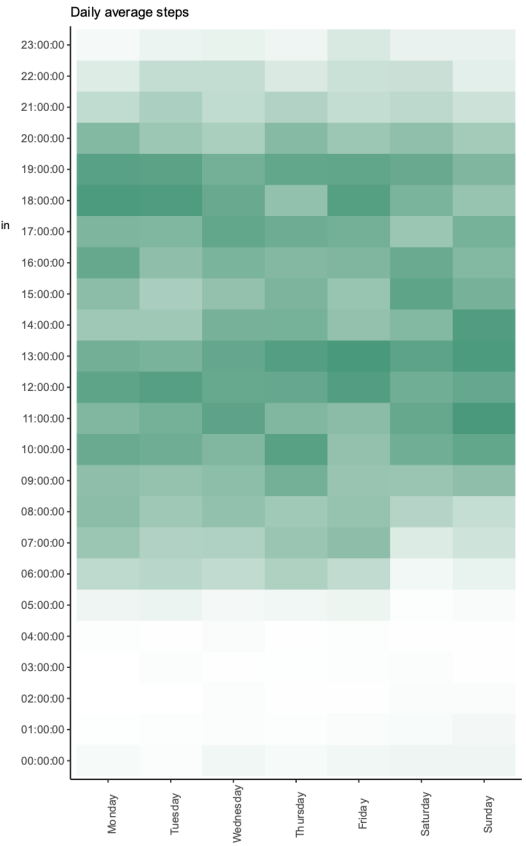
G2: Take from 5,000 - 10,000 steps a day

40	5.42 km	Saturday
Average tracker using days	Average daily distance travelled	Most active day

- This group of users spend **4 hours avg/day active**, including light & intensive activities
- Most active time in a day at **12-13pm** and **18-19pm**
- Heatmap shows evidence of **stricter weekly schedule compared to G1**
  - Day usually starts at 6pm in weekdays and later 7~8pm at weekends
  - Less late night activity, sleep earlier compared to G1
- Aside from the weekend, the **activity amount of weekdays are similar**
- This group **often** wears the tracking device, with **4.4 days avg/week**
- The data suggests that users are **fairly active** and **follow a similar activity habit constantly**





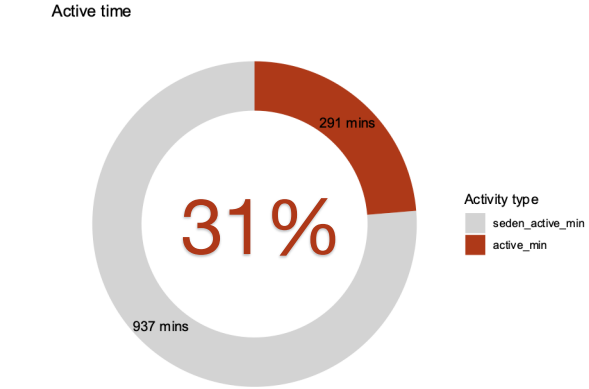


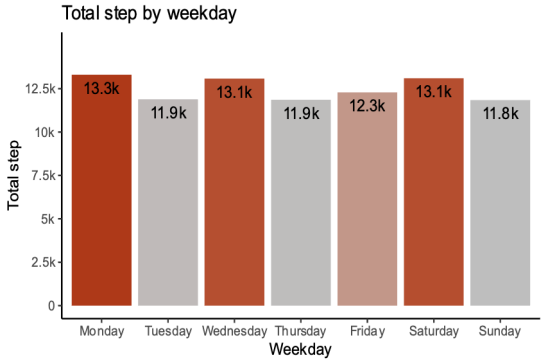
Analytics

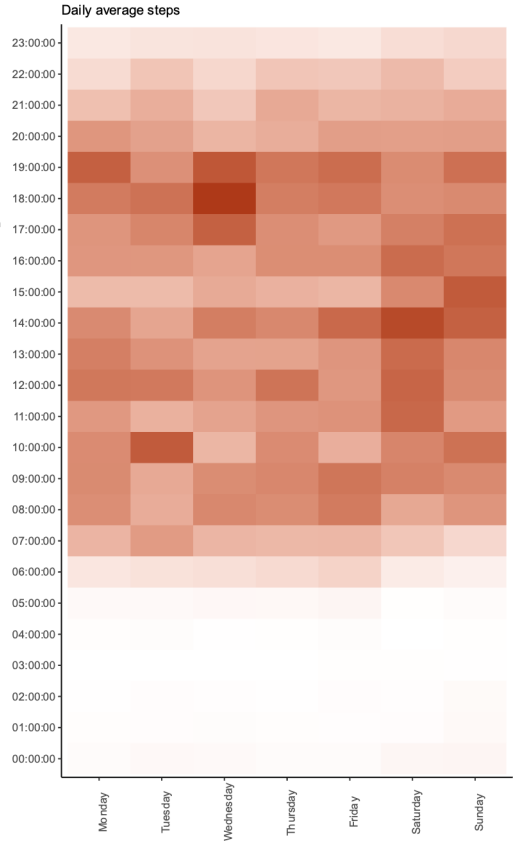
G3: Take more than 10,000 steps a day

42	9.06 km	Monday
Average tracker using days	Average daily distance travelled	Most active day

- This group of users spend **4.8 hours avg/day active**, including light & intensive activities
- Most active time in a day at **12-14pm** and **18-19pm**
- Heatmap shows evidence of **a very strict active schedule**
  - Day usually starts at 6pm in weekdays and later 7~8pm at weekends
  - Less late night activity, nearly no activity from 0 am
- Monday, Wednesday and Saturdays are considerably more active
- This group **often** wears the tracking device, with **4.6 days avg/week**
- The data suggests a group of users that are **very active** and **follow a similar activity habit constantly**. They with spikes at Mon, Wed and Sat, this suggests that they might having a special exercise/activity on these days.







Comments

Insights summary

- **Tracker**
  - Users wear the tracker most of the time in a day, through different types of activity
  - Active users are more likely to wear the tracker
  - **31%** of users doesn't wear the tracker during sleep
  - Users only wear the tracker **63%** of the time throughout the survey
- **Users' active habits**
  - Active users are more likely to follow a strict schedule
  - Users spend **83% of the time** in a day being sedentary, only be active at certain time periods
  - User spend **84% of their active time** doing light activities
  - Users are more active during meal time
  - Users rest more but travel more during the weekend
- **User's sleeping habits**
  - Users usually have a constant sleep time of **~ 7 hours** daily
  - Users spend a considerable amount of time **~ 0.65 hours** in bed without sleep

Comments

Suggestions

- Provide **new tracking modes** for different types of activities
- High amount of time not wearing the tracker shows that users may not feel comfortable with the design → consider **redesign the tracker to fit different situation, environment, temperature..**
- **Create different user profiles**, features for different user groups from less active to very active users.
- Aside from sedentary activities, **create new feature for light activities** as it takes 84% of all the average activities in a day
- Create a **guide** or an **auto-bot** to as an assistant to help reminding, scheduling and reporting
- Provide **health reports**
    - **Day-end report**: people usually spend some time to relax, restless before sleep, so we can provide a report of their health status during the day.
    - **Week-end report** on Sunday when people usually spend their time to rest, be less active and may want to take a look of what had happened through out the week
- **Encourage users** to be more active by adding:
    - Reward system: game or an experience count system with level-up mechanism
    - Notifications: regular reminds customers to encourage them to be more active