# Bellabeat

research by Tetiana Prokofieva
study based on Fitbit data

Average Step per day
12798
Average Calories per day
3860
MAX Steps per day
217565
MIN Steps per day
465

**Number of participants**

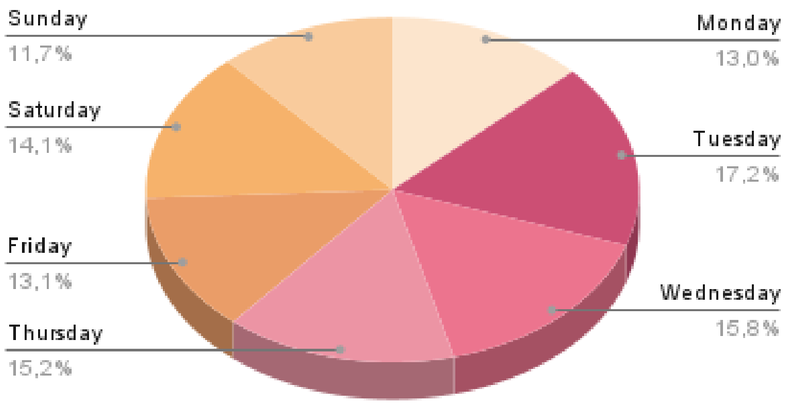
33

**Time period for conducting research**

31

## Average steps

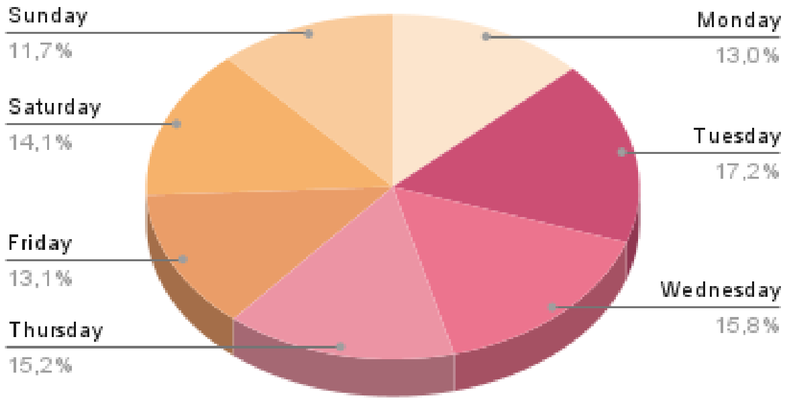
by day of the week




**Peak activity Tue–Thu**

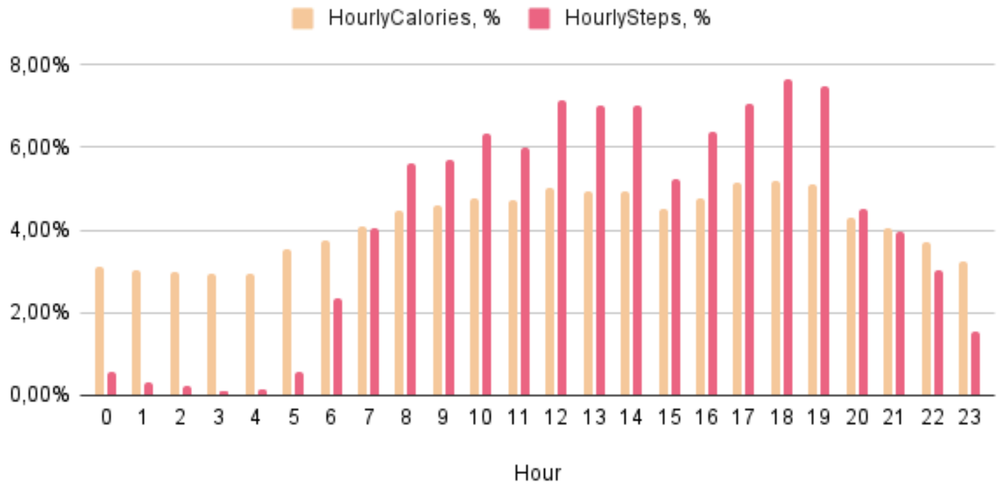
## Average steps

by day of the week




## Calories and Steps

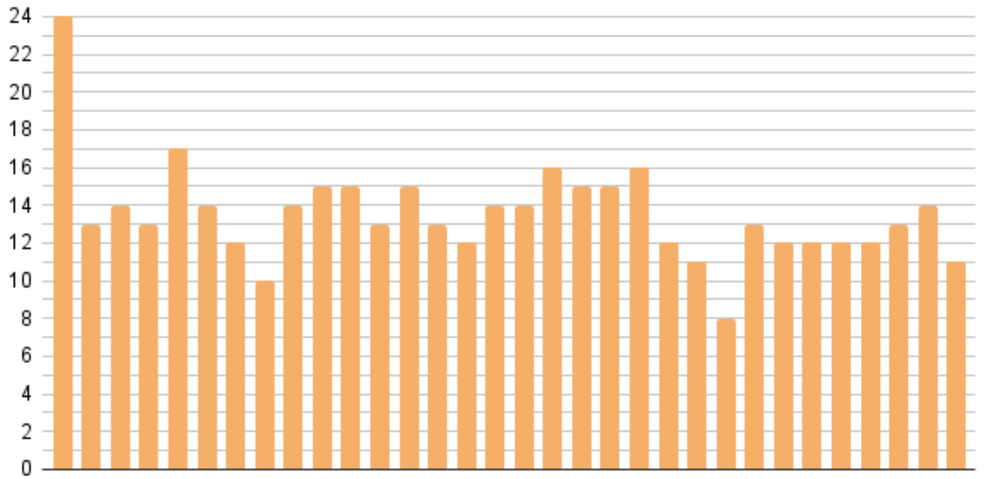
by hour of the day




**Daily activity has a noticeable dip around noon, likely related to lunch breaks.**

## Numbers of group members

per day who tracked sleep




**Sleep data inconsistent**

# Case Study 2 – Bellabeat (Leaf device)

research by Tetiana Prokofieva

## 1. Business Task

The purpose of this project is to analyze Fitbit data in order to identify trends in smart device usage and apply them to the Bellabeat Leaf product. The main goal is to generate insights about user activity and sleep patterns that can help guide Bellabeat’s marketing strategy.

## 2. Data Sources

- Fitbit Fitness Tracker Dataset (Kaggle, CC0 Public Domain).
  - Contains daily activity, steps, minutes of activity, sleep, and other metrics.
  - Tables used in the analysis: dailyActivity, sleepDay, hourlySteps.
- Number of participants: 33, but only 24 tracked sleep, and not all of them did it daily.

## 3. Data Cleaning & Processing

- Date and numeric formats were standardized for Google Spreadsheets (decimal separators adjusted, dates unified to yyyy-mm-dd).
- Tables were merged by two variables: ID and date.
- Pivot tables were created to analyze:
  - activity by day of the week,
  - activity by hour of the day,
  - sleep tracking frequency per participant.

## 4. Analysis & Visualizations

🔹 Activity by day of the week

- Highest activity levels were recorded on Tuesday, Wednesday, and Thursday.
- Weekends showed noticeably lower activity.

🔹 Activity during the day

- Morning activity increases until 12:00 PM, followed by a sharp drop.
- Around 1:00 PM, activity rises again, then gradually declines throughout the day.

🔹 Sleep

- Only 24 out of 33 participants tracked their sleep.
- Many did not track sleep daily, showing irregular monitoring habits.

(The dashboard includes charts: bar chart for weekdays, line chart for hourly activity, and a chart for sleep tracking consistency.)

## 5. Key Insights

1. Users are most active on weekdays, especially Tuesday–Thursday.
2. Daily activity has a noticeable dip around noon, likely related to lunch breaks.
3. Sleep tracking is irregular, with only part of the users monitoring it consistently.

# 6. High-Level Recommendations

1. **Target weekday engagement**
   - **Promote workouts or challenges specifically on Tuesday–Thursday, when users are more physically active.**

1. **Push reminders at midday**
   - **Send notifications after 12:00 PM to encourage activity (e.g., a short walk or stretch).**

1. **Encourage regular sleep tracking**
   - **Introduce gamification: badges or rewards for consistent sleep logging.**
   - **Educate users on the benefits of quality sleep via notifications or in-app tips.**

1. **Position Bellabeat Leaf as a “balance device”**
   - **Market Leaf as a product that helps women track both activity and sleep, promoting a balanced lifestyle.**