Bellabeat Case Study

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The Problem

Company

- Bellabeat, a high-tech company that manufactures health-focused smart products including:
  - Bellabeat app
  - Leaf
  - Time
  - Spring
  - Bellabeat membership

Context

- Since it was founded in 2013, Bellabeat has grown rapidly and quickly positioned itself as a tech-driven wellness company for women
- The company focuses on digital marketing extensively and wants to find more opportunities for growth

Problem Statement

- Identify trends in smart device usage and how the trends can be used to guide marketing strategies

Data

Datasets

- Dataset of Consumer-Based Activity Trackers

  - Collected activity from participants using a Fitbit or Garmin

- National Health and Nutrition Examination Survey

  - Includes answers to questions on sleep habits and disorders

- Fitbit Fitness Tracker Data

  - Collected Fitbit data from Amazon Mechanical Turk

Notebook

- Full analysis available on GitHub

- Click here

Cleaning

- Searching for high level trends, so focused on daily activity data

- Not enough data collected for sleep or weight data therefore excluded

- Only include data where users used the device for an adequate amount of time, at least 150 steps

- Removed duplicate data

- Reformatted data to same data types

- Merged Fitbit dataset and Dataset of Consumer-Based Activity Trackers

What was measured & analyzed

Variables

- Date
- Steps
- Calories
- Minutes of activity
- Watch provider
- Number of uses per participant

Analyzed

- Found the averages, minimums, maximums, etc. for the variables
- Analyzed the distributions of the variables
- Compared variables looking for correlations
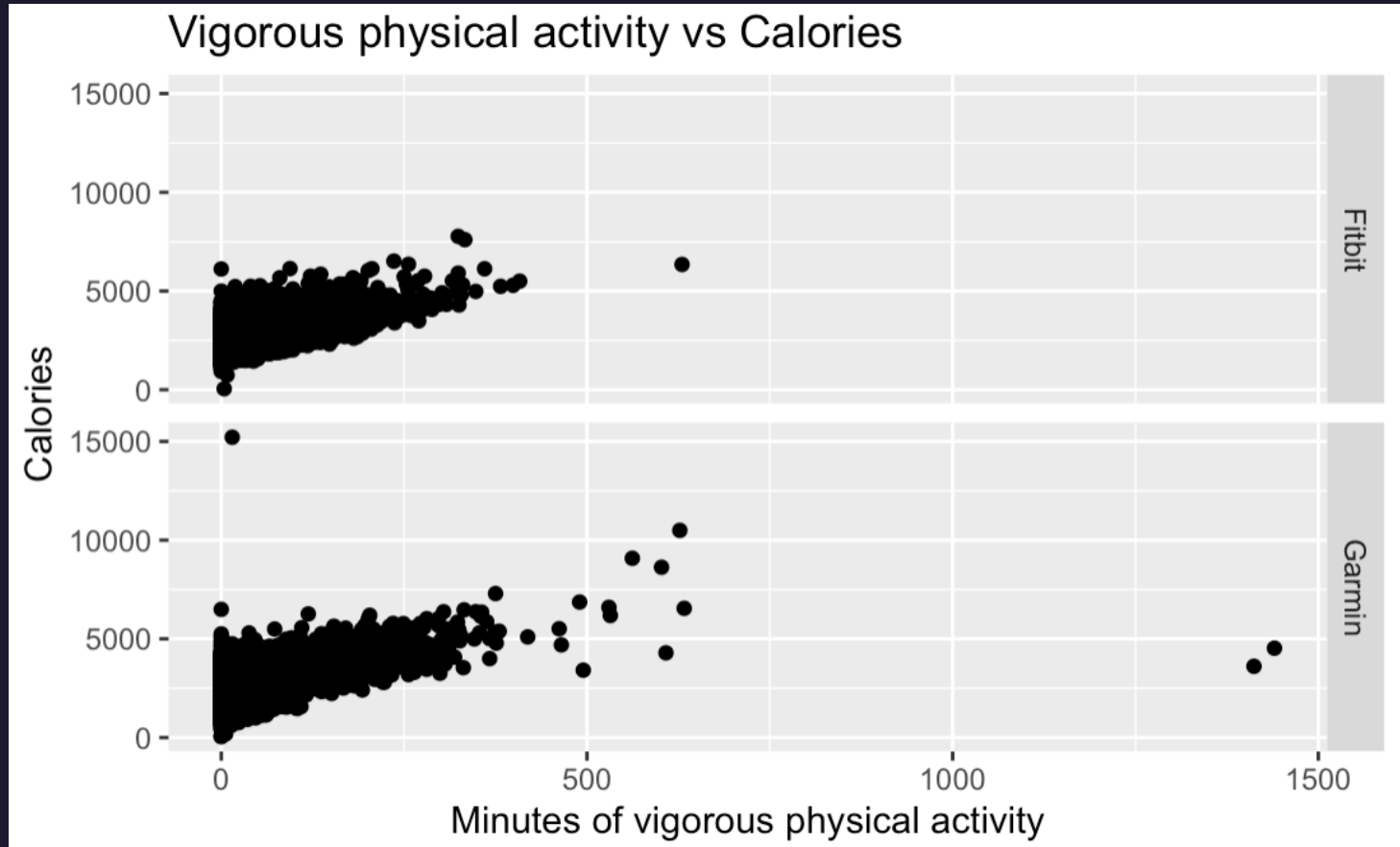- Analyzed the spread of the tracking data over time

Results

- Positive correlation

- Garmin

  - r(41768) = 0.544, p < 2.2e-16
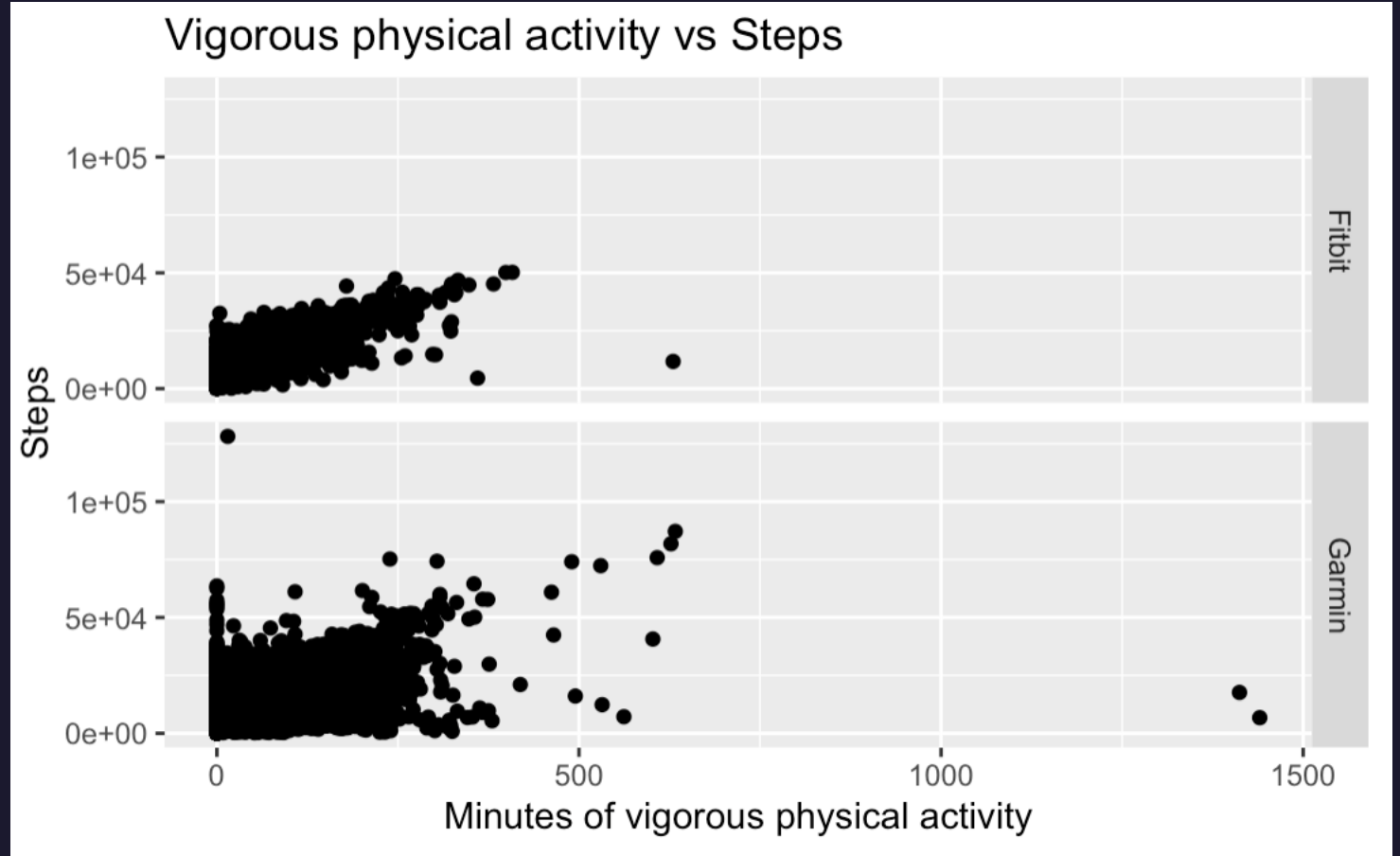
- Fitbit

  - r(25355) = 0.540, p < 2.2e-16

Steps vs Calories

Results

Vigorous physical activity vs Calories
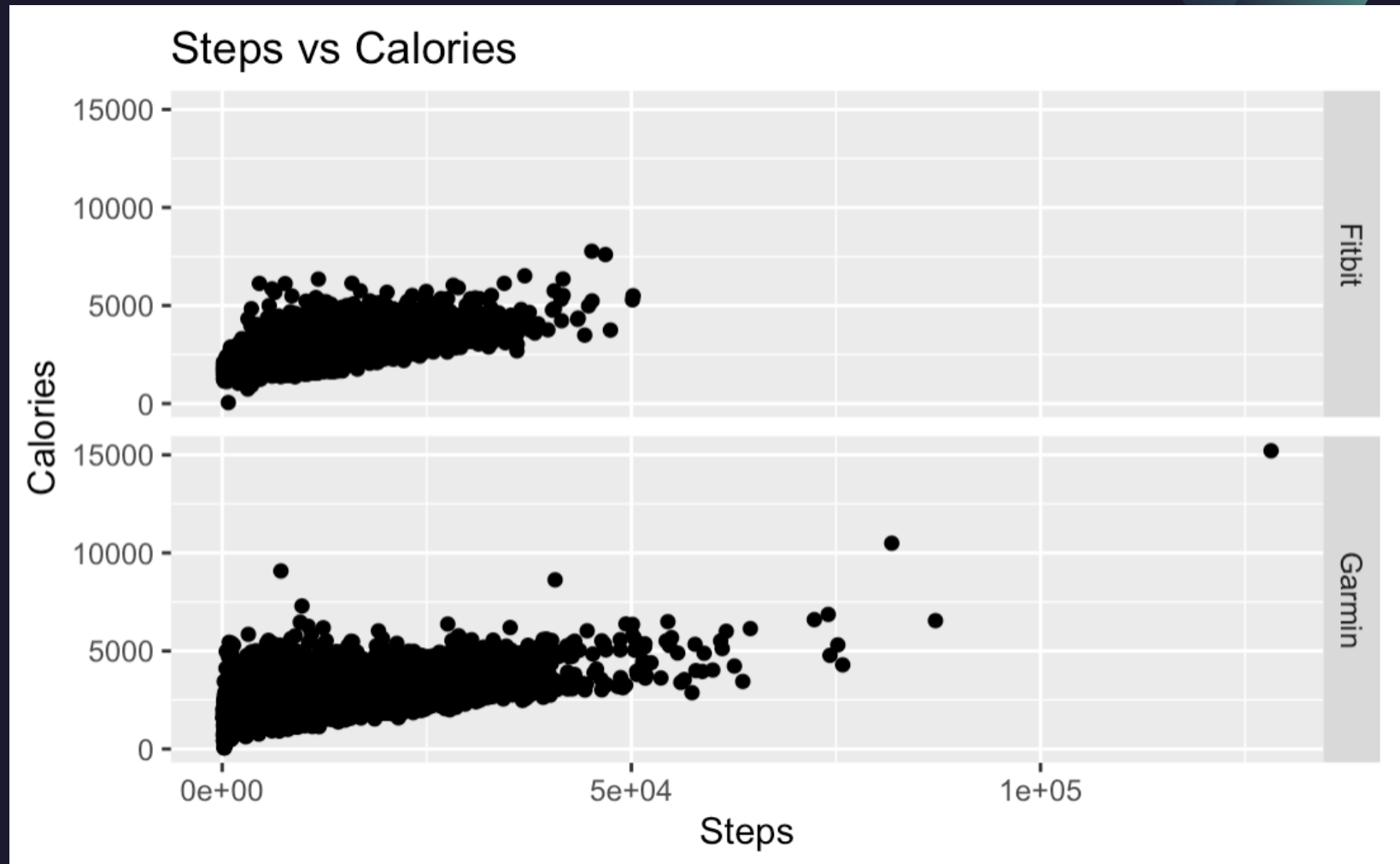
- Positive correlation

- Garmin
  - $r(41768) = 0.613$, $p < 2.2e\text{-}16$

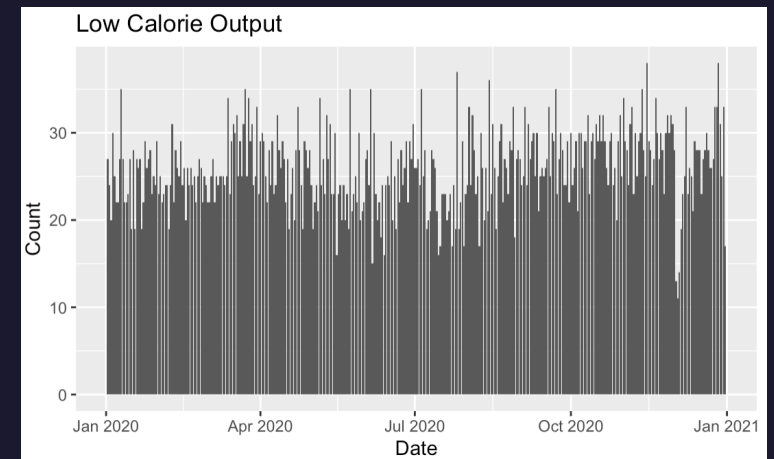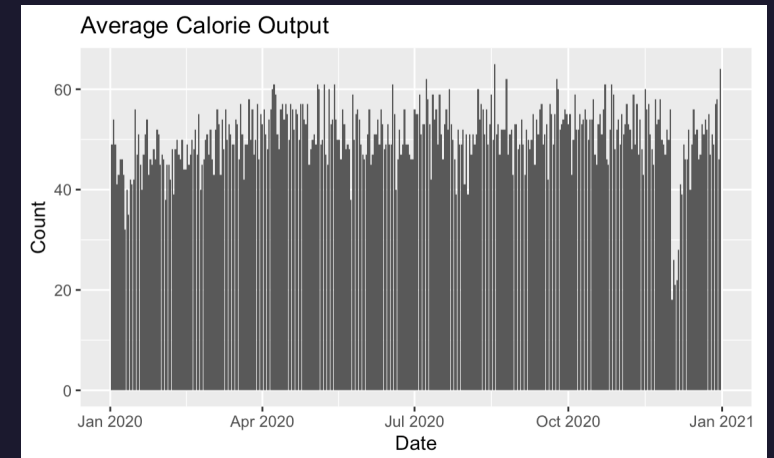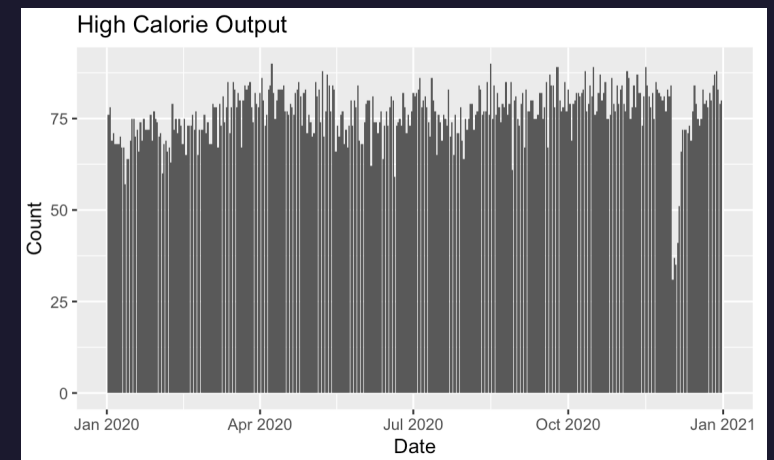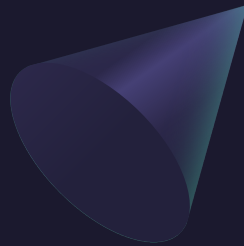- Fitbit
  - $r(25355) = 0.517$, $p < 2.2e\text{-}16$

Results

- Positive correlation

- Garmin

  - r(41768) = 0.568, p < 2.2e-16

- Fitbit

  - r(25355) = 0.779, p < 2.2e-16

Vigorous physical activity vs Steps

Results

- People with a lower calorie output have a lower consistency

- People with an average calorie output are more consistent in exercising

- People with a high calorie output have high consistency and frequency

Audience

- Bellabeat focuses on helping women take charge of their health and fitness

- From a survey, fitness bands are more popular than smartwatches among women

- The COVID-19 pandemic boosted the market as consumers were forced to spend more time at home, find new ways of exercising due to limited gym access, and sometimes monitor their medical health

- Moreover, women are the main target for Bellabeat, and fitness bands are more popular among them so there should be an increase of focus on their Leaf product

Strategy

- Based on data from tracking devices, digital marketing should be focused on how women can increase their health by consistently working out using the Leaf product

- The more people tracked their fitness the more consistent and frequently they exercised

- Higher level activity leads to more calories burned so marketing should portray how the Leaf encourages high level activity with daily goals