

Case Study Report: Bellabeat Wellness Insights

Data Analytics with RStudio

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1 Introduction

This case study explores smart device usage data from Fitbit to uncover patterns in activity, sleep, and wellness behavior. The goal is to generate actionable insights that Bellabeat, a wellness technology company, can use to improve its marketing strategies and product offerings.

The analysis follows a structured approach:

Ask: Identify the main business questions.

Prepare: Clean and structure the dataset.

Process: Explore and visualize the data.

Analyze: Find correlations and behavioral patterns.

Share: Present findings clearly.

Act: Recommend strategies for Bellabeat.

2 Data Preparation

Source: Public Fitbit dataset (Kaggle) – 30 users

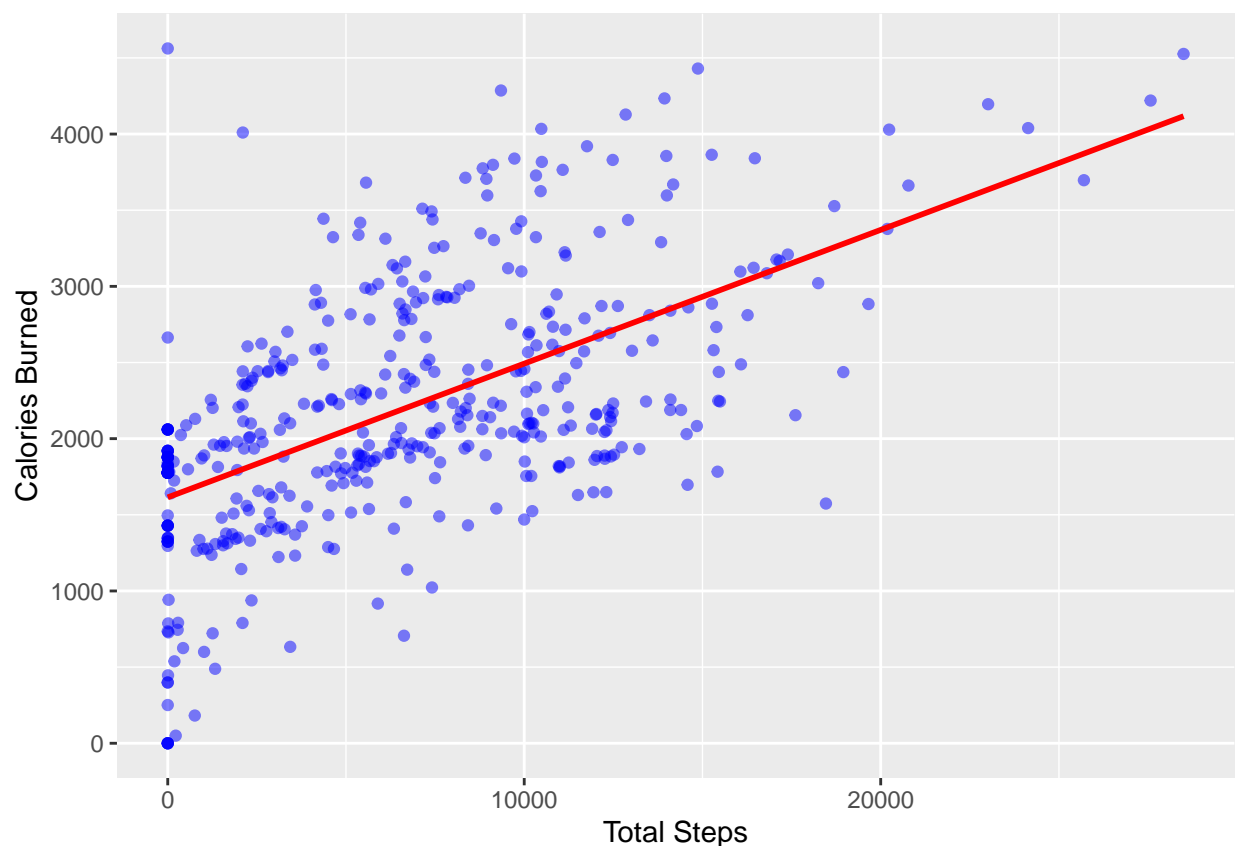
- Data types analyzed:
- Daily Activity (steps, distance, calories)
- Sleep Logs (minutes asleep, sleep quality)
- Weight Log information

The dataset contains daily activity, sleep, and calorie data from multiple Fitbit users. After cleaning and merging, the data is ready for analysis.

3 Analysis & Insights

1. Steps vs Calories

Question: Do more steps translate to more calories burned?

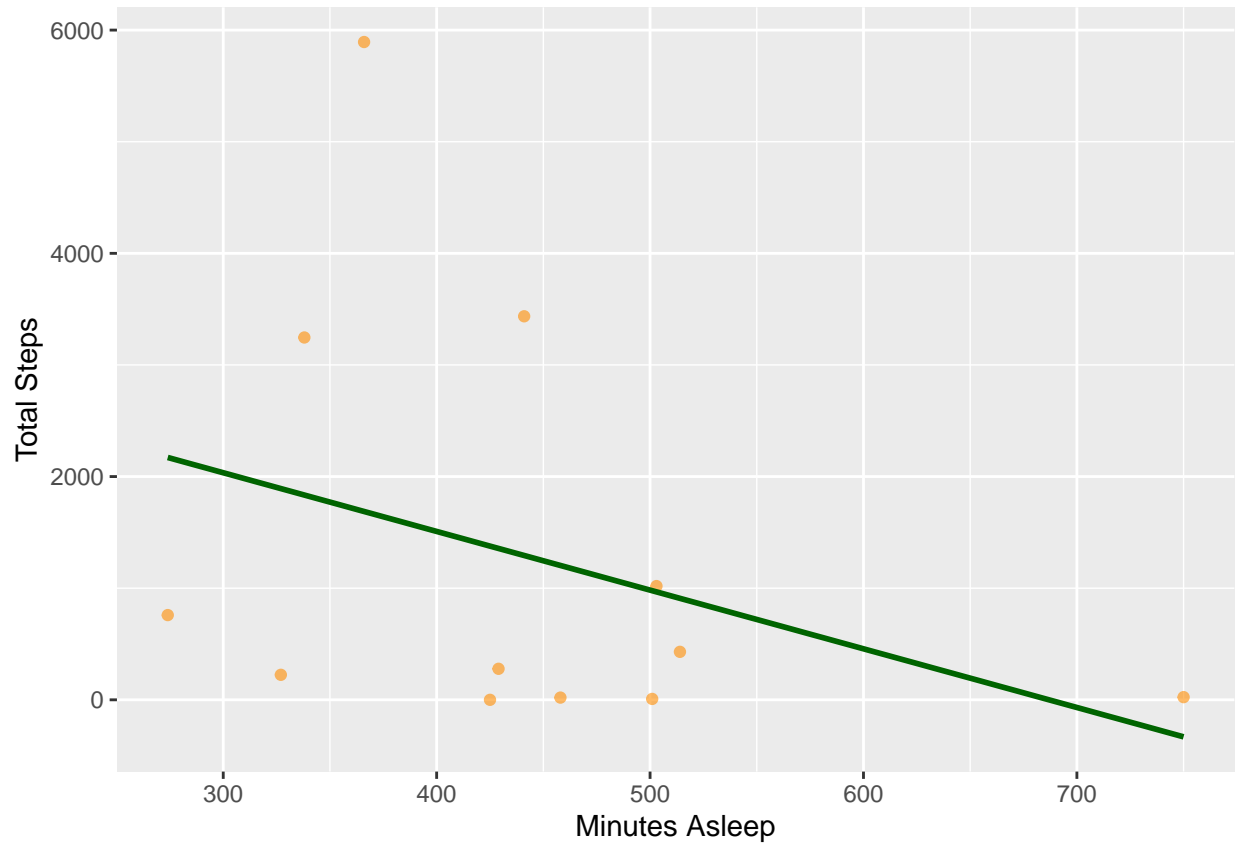


Insight:

Users who take more steps consistently burn more calories. This confirms that physical activity is directly linked to calorie expenditure.

2. Sleep vs Activity

Question: How does sleep duration affect activity?

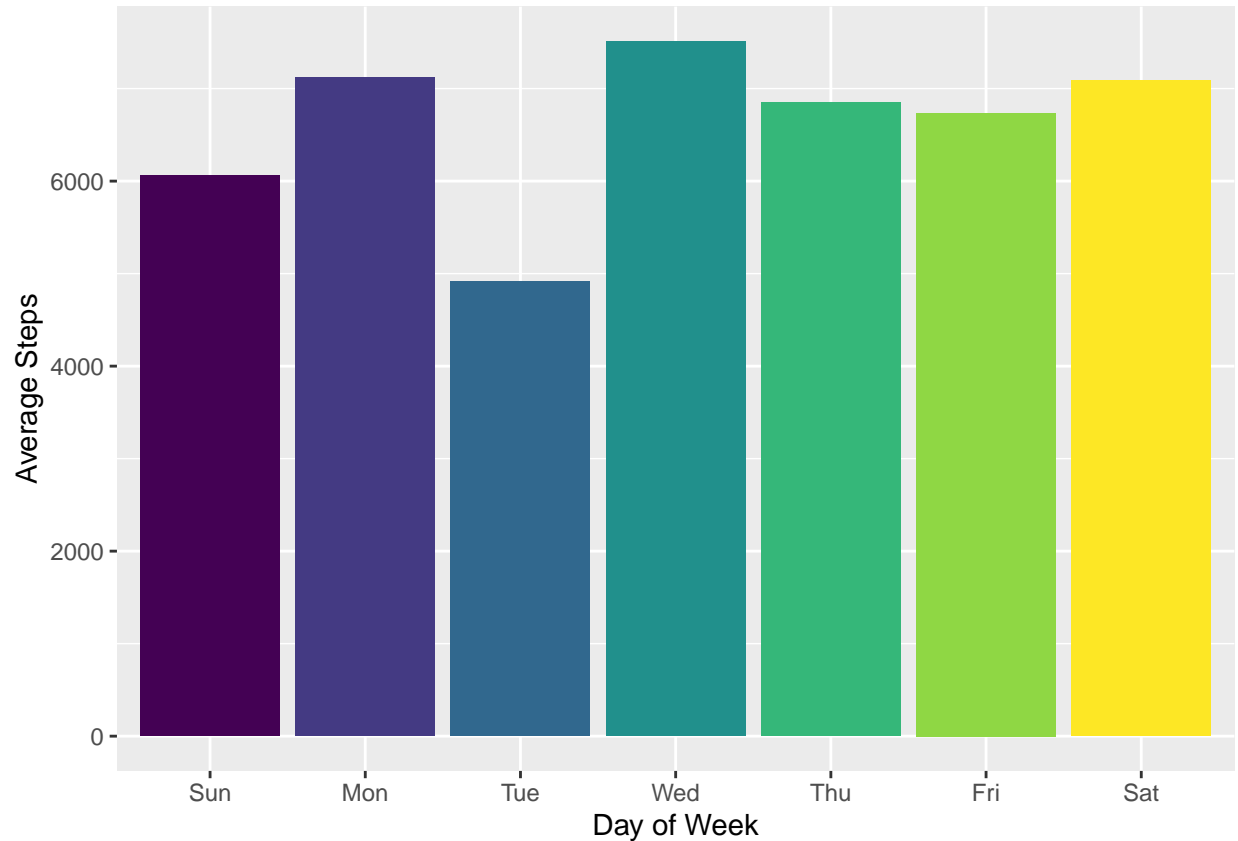


Insight:

Longer sleep often correlates with fewer daily steps, showing a rest–activity tradeoff.

3. Weekly Activity Patterns

Question: Do activity levels vary by weekday?



Insight:

Users are more active on weekdays compared to weekends. Activity levels drop notably on Saturdays and Sundays.

4 Conclusions & Recommendations

This analysis highlights opportunities for Bellabeat to improve user engagement:

Encourage weekend challenges to balance weekday vs weekend activity.

Promote sleep consistency with personalized reminders.

Highlight calorie-step link in marketing campaigns.

Promote balanced routines by educating users about activity-rest tradeoffs.

By leveraging these insights, Bellabeat can enhance user wellness outcomes and strengthen its brand as a holistic smart health companion.

5 Thank You

Thank you for reviewing this case study. I appreciate your time and interest in my analysis.

For further discussion or collaboration, please connect with me on kmrtech99@gmail.com.