Bellabeat Case Study

Capstone Project for

Google Data Analytics Professional Certificate

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Tool used: Power BI, R

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Project Overview

This project presents a detailed analysis of user data collected by Bellabeat, focusing on lifestyle and wellness patterns such as physical activity, sleep behavior, and overall health indicators.

Company Overview

Bellabeat is a high-tech company that manufactures health-focused products. It aims to develop beautifully designed technology that informs and inspires women around the world. By collecting data on activity, sleep, stress, and reproductive health, Bellabeat empowers women with knowledge about their own health and habits. This project analyzes available consumer data to uncover opportunities for growth.

Analysis Process (Based on the Data Analysis Lifecycle)

1. Ask

- Defined the business objective: What trends in user activity, sleep, and health can help Bellabeat improve its product strategy?
- Identified key questions:
  • What are the trends identified?
  • How could these trends apply to Bellabeat customers?
  • How could these trends help influence Bellabeat's marketing strategy?

Key Stakeholders:
• Urška Sršen: The Chief Creative Officer
• The Company's Mathematician and key member of the Bellabeat executive team
• Bellabeat marketing analytics team

2. Prepare

FitBit Fitness Tracker Data (CC0: Public Domain), sourced from a distributed survey conducted via Amazon Mechanical Turk between March 12th and May 12th, 2016. It includes data from 30 eligible Fitbit users, covering activity, calories, intensities, steps, sleep, and heart rate.

Data Quality Assessment – ROCCC Framework

1. Reliable – Partially Met
   Data from Fitbit devices is generally reliable but may have tracking biases.
2. Original – Mostly Met
   Based on wearable data but provided as a processed case study dataset.
3. Comprehensive – Partially Met

Missing features like height, some null values, and a small sample size.

4. Current – Not Met

Data is from 2016, making it outdated for a modern health tech analysis.

5. Cited – Partially Met

The source is named but lacks a direct citation link.

Conclusion: The dataset is suitable for exploratory analysis but has limitations that must be considered when interpreting results.

3. Process

- Performed data transformation in Power Query and Excel
- Calculated new columns such as sleep efficiency, BMI, and activity classifications
- Filtered out outliers and irrelevant data

4. Analyze

The analysis involved both descriptive and visual exploration of user behavior. Power BI was used to generate interactive dashboards illustrating daily activity (steps, calories, and intensity levels), sleep patterns (duration and efficiency), and user BMI. Users were segmented based on step count and BMI categories to reveal behavioral trends.

Additionally, R was used to analyze statistical correlations between key variables such as total steps, sleep efficiency, calories burned, and total minutes asleep. The results showed weak to moderate correlations, reinforcing the need to consider multiple health dimensions in Bellabeat's strategy.

5. Share

The results of the analysis were shared through a comprehensive Power BI dashboard, allowing stakeholders to explore trends interactively. Key findings and visual insights were also documented in a written report. To enhance the statistical depth, R visualizations and correlation values were included to validate observed trends. The combination of business-friendly visuals and data-driven insights supports better decision-making for product strategy and marketing.

6. Act

- Recommended the Leaf device as the most suitable product
- Provided actionable insights to help Bellabeat personalize wellness offerings for women

Recommendations

Product Recommendation: **Leaf**

Why Leaf is the Most Suitable Product to Market?

Based on the data analysis of activity, sleep, and user health patterns…

- Users show low activity levels and irregular sleep—two areas Leaf directly supports.
- Leaf tracks activity, sleep, breathing, and stress, making it ideal for comprehensive health tracking.
- It combines functionality with style, appealing to Bellabeat's female-focused audience.

Marketing Suggestions:

Marketing Strategy Suggestions for Leaf

1. Data-Driven Messaging

Emphasize insights from the analysis to connect with users on a personal level.

   Example message:

 "Over 50% of users are overweight and not physically active enough —

   Leaf empowers you to take back control of your health."

 2. Habit-Focused Campaigns

 Develop marketing that addresses specific habits like poor sleep or inactivity.

   Example message:

 "Struggling with inconsistent sleep? Leaf tracks your patterns and guides

   you to better rest."

 3. Style and Function in One Device

    Highlight that Leaf is both a wellness tracker and a stylish accessory,

    aligning with the preferences of Bellabeat's female audience.

 4. App Integration Highlight

    Showcase how Leaf connects with the Bellabeat app to deliver personalized

    insights and help users reach their daily health goals.

 5. Influencer and Community Marketing

    Partner with lifestyle influencers, fitness coaches, and wellness bloggers

    who resonate with the brand's audience to boost awareness and credibility.

6. Seasonal Promotions and Bundles Launch themed campaigns during high-engagement periods like New Year,

  Back to School, or summer—offering Leaf bundled with app subscriptions or discounts.

With its well-rounded features and alignment with user needs, Leaf stands out as the most impactful product for Bellabeat's current market.

Conclusion

This analysis provided Bellabeat with data-driven insights into users' activity levels, sleep behaviors, and wellness patterns. By identifying key trends and highlighting areas for improvement, the company can better tailor its products and campaigns to meet the real needs of its audience. The Leaf device stands out as the most suitable product to support user wellness, offering a perfect blend of function and style.