

BELLABEAT SMART DEVICE CASE STUDY

Business Analytics Report

1. Background

Bellabeat is a high-tech company that manufactures health-focused smart products for women. Their products collect data on physical activity, sleep, and overall wellness. Bellabeat wants to analyze smart device usage data to discover trends that can help guide marketing strategy and product improvement.

2. Business Objective

The objective of this analysis is to:

- Identify daily activity patterns among smart device users
 - Understand relationships between physical activity and calorie expenditure
 - Provide actionable insights to improve Bellabeat's marketing strategy and user engagement
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3. Data Source

The dataset represents daily activity data collected from Bellabeat smart devices. It includes step count, activity minutes, sedentary time, and calorie expenditure for individual users.

Only **cleaned and valid records** were included in the analysis.

4. Data Cleaning Process

The following steps were performed:

- Removed duplicate records
 - Standardized date format
 - Ensured non-negative values for activity and calories
 - Selected relevant activity variables for analysis
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5. Analysis & Key Findings

Physical Activity

- Users with higher step counts also show higher very active minutes
- Consistent activity is associated with reduced sedentary time

Calories Burned

- Users exceeding 10,000 steps per day burn significantly more calories
- Low activity users show minimal calorie expenditure

User Behavior

- Many users remain sedentary for long periods despite moderate step counts
 - Activity levels vary significantly between users
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6. Business Recommendations

1. **Personalized Activity Reminders**
Encourage low-activity users with customized notifications.
 2. **Goal-Based Challenges**
Introduce step and activity challenges to motivate engagement.
 3. **Sedentary Time Alerts**
Notify users when sedentary time exceeds healthy limits.
 4. **Marketing Strategy**
Promote Bellabeat as a wellness companion focusing on daily habit improvement rather than only fitness.
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7. Conclusion

The analysis highlights clear relationships between activity levels and calorie expenditure. By leveraging these insights, Bellabeat can enhance user engagement, promote healthier habits, and strengthen its position in the women's wellness technology market.

Author

Ramprasad M

Data Analytics Portfolio Project