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bellabeat

BELLA BEAT CASE STUDY

LIFESTYLE PRODUCTS USER DATA

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1. Bella Beat

Bella Beat is a high-tech manufacturer of health-focused products for women and develops wearables and accompanying products that monitor biometric and lifestyle data to help women better understand how their bodies work and make healthier choices.

1.1. Product Offerings:

They offer the following products:

Bella beat app: The Bella beat app provides users with health data related to their activity, sleep, stress, menstrual cycle, and mindfulness habits.

Leaf: Bella beat's classic wellness tracker can be worn as a bracelet, necklace, or clip that connects to the Bella beat app to track activity, sleep, and stress.

Time: This wellness watch combines the timeless look of a classic timepiece with smart technology to track user activity.

Spring: This is a water bottle that tracks daily water intake using smart technology to ensure that you are appropriately hydrated throughout the day.

Bella beat membership: Bella beat also offers a subscription-based membership program for users. Membership gives users 24/7 access to fully personalized guidance on nutrition, activity, sleep, health and beauty, and mindfulness-based on their lifestyle and goals.

2. Ask

The purpose of this study is to analyze the trends and relations between different physical activities that are a part of users' lifestyles and draw conclusions from them. These results help the company to come up with more innovative ideas to help users.

2.1. Problem Objective

The company wanted to engage its users to use their smart products to maintain a healthy lifestyle. That's why the company wanted to improvise its products on customer-centric data to engage and retain its users.

2.2. Business Questions

What are some trends in smart device usage?

How could these trends apply to Bella beat customers?

How could these trends help influence Bella beat marketing strategy?

2.3. Stakeholders:

Urška Sršen: Bella beat's co-founder and Chief Creative Officer

Sando Mur: Mathematician and Bella beat's cofounder; a key member of the Bella beat executive team

Bella beat marketing analytics team: A team of data analysts responsible for collecting, analyzing, and reporting data that helps guide Bella beat's marketing strategy.

3. Prepare

3.1. Data Collection:

The data has been collected from Fit Bit fitness tracker data. (CC0: Public Domain, dataset made available through Mobius): This Kaggle data set contains a personal fitness tracker from 30 Fitbit users. Thirty eligible Fitbit users consented to the submission of personal tracker data, including minute-level output for physical activity, heart rate, and sleep monitoring. It includes information about daily activity, steps, and heart rate that can be used to explore users' habits.

1.1. Data Storage:

The data is stored in 18 long-format files. It is distributed based on different activities and stored on a minute, second and daily basis.

1.2. Credibility of data:

1.2.1. ROCCC:

- **Reliability:** Dataset was collected from 30 individuals and demographics are missing. Sample size is very low to make generalized statements.
- **Originality:** Third-party data was collected using Amazon Mechanical Turk.
- **Comprehensive:** Dataset contains multiple fields such as daily activity, calories, daily steps, sleep, distance, etc.
- **Current:** Data is recorded in 2016 which means it's not updated, and people's activities might change
- **Cited:** Data is well documented

1.1. Data Usage:

This data helps to get insights into users' activity and their lifestyles. It helps to improve features in Bella beat offerings to engage more users to maintain a healthy lifestyle.

1.2. Limitation of data:

The demographics are unknown. Most Bella beat consumers are women, so gender specification is an important element in data.

Most users haven't recorded their daily activities and missed the days

The number of users is low in some datasets

1.3. Description of data:

I have used the following data to analyze day-to-day activities. Some of the attributes related to these datasets are total steps, distance, active and inactive minutes, calories, sleep time vs time in bed, weight, etc.

- dailyActivity_merged.csv
- dailyCalories_merged.csv
- dailyIntensities_merged.csv
- dailySteps_merged.csv
- sleepDay_merged.csv

4. Prepare

4.1. Tools:

- Excel
- Python.Data cleaning, processing, analysis

4.2. Data Cleaning

4.2.1. Checking Duplicates

- Checking duplicate values in all the datasets
- 3 rows were duplicated in the “SleepDay_merged” which has been removed.

4.2.2. Removing whitespaces

Removing whitespaces in all the columns, if any are present

4.2.3. Check Null Values

There are no null values in all the datasets.

4.2.4. Check Data types

Check data types and convert the data type of:

- ID into object/string
- Activity data into date
- Date into DateTime

4.2.5. Check Consistency

Checked consistency of users that each user tracked their daily activity. Many users haven’t tracked their daily activity:

- There are a total of 33 users in daily activity data
- There are a total of 24 users in the sleep data

4.2.6. New Columns extraction

New Columns have been created from existing columns for analysis.

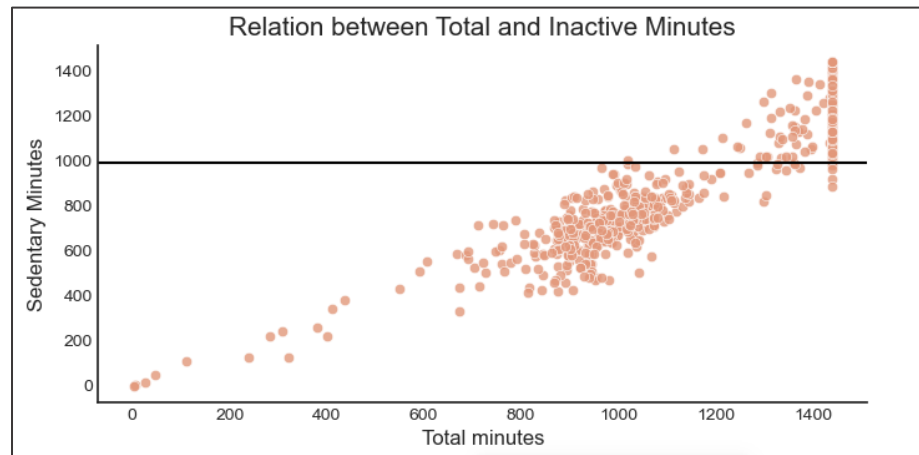
- Daily Activity data
- Sedentary Minutes Ratio (Sedentary minutes / Total minutes)
- Month Name, Day extraction from Activity date column

5. Analysis and Share

The following relations have been analyzed to derive insights into the users’ lifestyles.

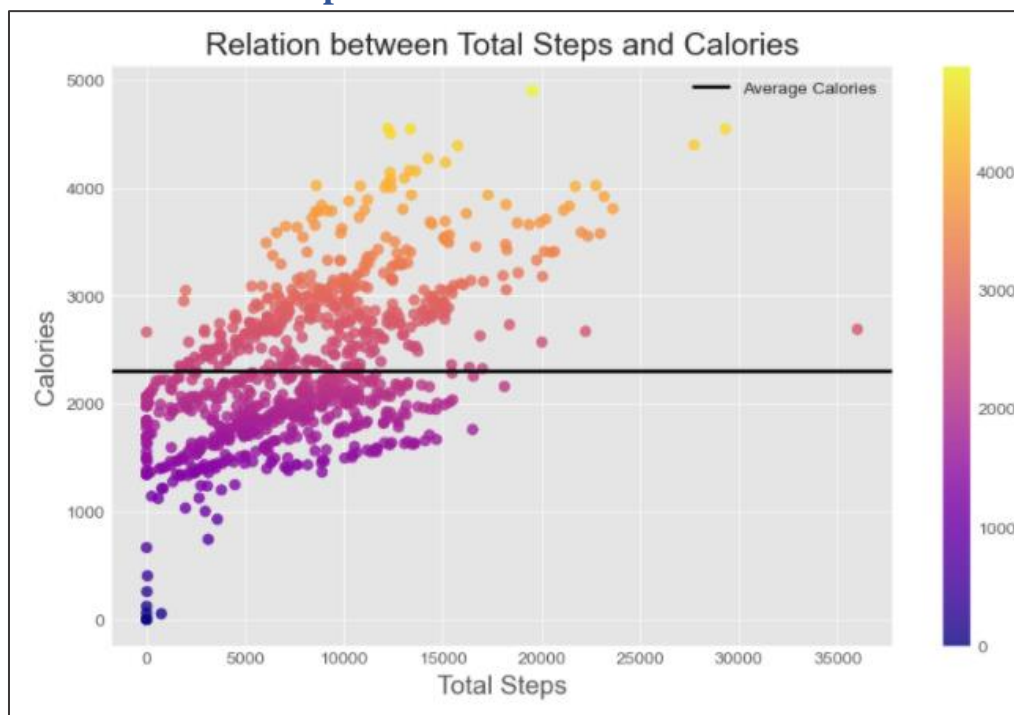
5.1. Distribution of Sedentary Minutes and total Minute

On average, 80% of the users spent their time inactive.



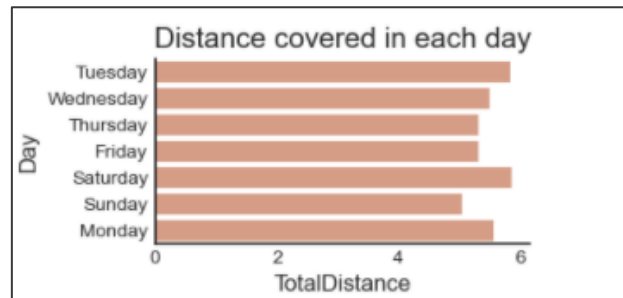
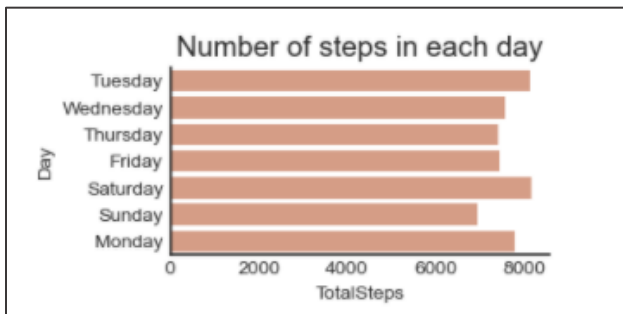
In 24 hours, we have 1440 minutes. This is a positive correlation. As the amount of total minutes increases, the inactive minutes increase too, most users spend their time remaining inactive and don't engage in physical activities. Users may involve in activities that do not physical movements.

5.2. Relation between Total Steps and Calories



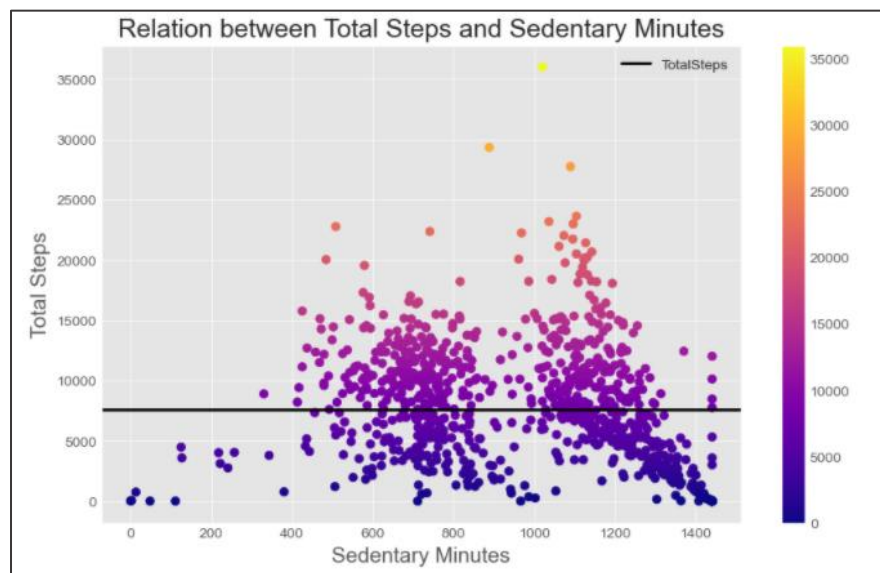
- The higher the total steps that users walk or run, the more calories user burn
- There is an outlier that shows a maximum of steps 35,000. It could be an error in recording steps.
- On average, the users are burning approx. 2,000 calories but the result varies. If we analyze 15,000 steps, the calories burning amount range from 2,000 to 4,000. This variety in burning calories occurs due to Very Active, Fairly Active, and Lightly Active Users.

5.3. Daily Activities



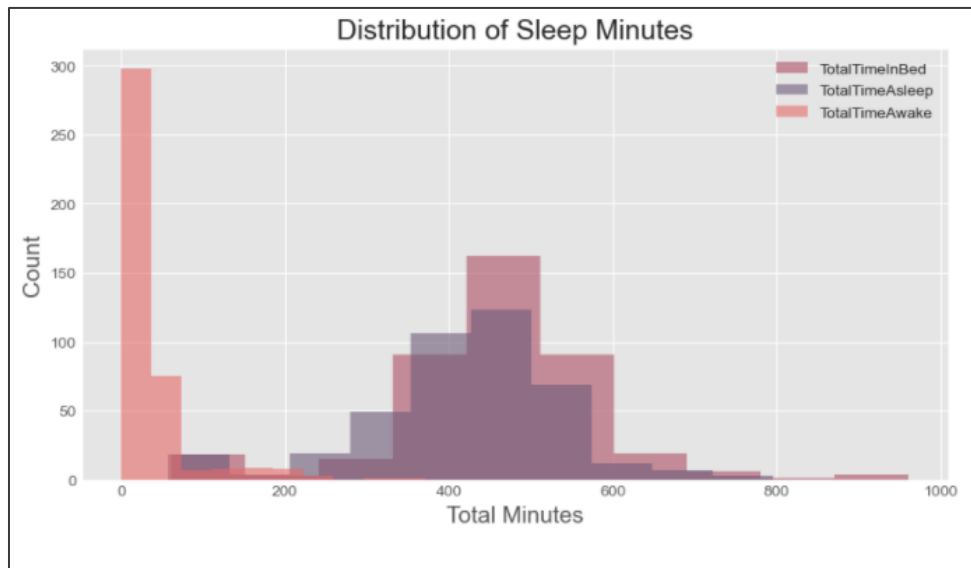
- This is the daily analysis of the user where we analyze total steps, total distance, and total burnt calories
- Most users are active on Saturday followed by Tuesday.

5.4. Does High Sedentary time lead to a low number of steps?



- Sedentary Minutes and Total Steps do not have a linear relationship.
- It can be observed that the number of steps will increase when sedentary minutes are from 0-500 mins, and the number of steps will reduce when sedentary minutes are from 1000-1500. This is interesting because we can recommend users who have a sedentary time of more than 1000 minutes should start exercising more.

5.5. Sleep Duration



- On average, users take 7.0 hours of sleep and spent approx. 39.0 minutes in bed before sleeping daily.
- On Sunday, people take 8 hours of sleep which is high as compared to other days
- Most users are active on Tuesday followed by Saturday and Monday

5.6. Insights:

1. What are some trends in smart device usage?

- Majority (80%) of users engage in sedentary activities like working in a sitting arrangement or doing nothing. While 20% of "active" users, the majority of users engage doing light activities.
- The extreme minority of users who are very active or are fairly active doing exercises 1000-2000 calories in the same amount of period.
- Most users are active on Saturday followed by Tuesday. These 2 days are also the days that users burnt the highest calories in the entire week.
- On average, users take 7.0 hours of sleep and spent approx. 39.0 minutes in bed before sleeping daily. On Sunday, people take 8 hours of sleep which is high as compared to other days.
- People are not using lifestyle products but are not consistent with following good healthy habits and making proper steps, sleeping, and spending their time more actively.

2. How could these trends apply to Bella beat customers?

We analyzed these trends to see how users are consistent in using these smart devices to make their lifestyles healthy. The insights can be applied to make this lifestyle product better for users to fully adapt these devices in their daily lives.

3. How could these trends help influence Bella beat marketing strategy?

These insights help to design Bella beat marketing strategy as per the consumers' mindset.

6. Act

Some of the recommendations are:

6.1. Social Media Campaigns

It is very important to spread awareness about healthy lifestyles and how users incorporate these lifestyle products to track their progress.

The company can create ad campaigns where they show the importance of a healthy lifestyle and how we can use Bella beat lifestyle products and app to make our health goals, track it and accomplish it. These types of the campaign make a good positioning of the brand and its concept. This helps increase the consistent use of lifestyle products.

We can also collect a good amount of data which helps the company to make more improvisations in the future.

6.2. User Experience Design

6.2.1. Blog Post

It has been observed that users have spent high time being inactive, having low sleep, and not doing enough steps. Bella beat can add blog post features in the app which include:

Daily short articles and blogs can be published on the app where harmful effects of an unhealthy lifestyle can be shared such as having effects of having highly Sedentary time, and lack of sleep can be shared. Also, recommendations should be given on how users can change their unhealthy habits with small steps and stay consistent in their journey. These kinds of things help their targeted audience adopt healthy habits.

6.2.2. Notification Alerts:

Notifications alerts should be displayed on the users' phones to remind them if they are inactive or sitting in an idle position for more than 2 hours to have a little or remind the recommended sleep time to the user. Such notifications will help the users to stay consistent and mindful about following healthy habits.

6.2.3. Goal Setting Calculator

Bella beat App can design such a matrix where user can add their current weight, height, and age, and the calculator can show the recommended number of steps, calorie consumption, active minutes of activity, and sleep time that the user should adopt. It will help the user to set their goals about the recommended insights