Food Trends Understanding Customer Preferences in Food & Beverage

By

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INTRODUCTION

Understanding customer preferences and nutritional trends has become essential for developing effective meal plans, marketing strategies, and health-focused food products. This project, **"Food Trends: Understanding Customer Preferences,"** utilizes **Power BI** to visualize and analyze data related to consumer dietary habits, nutritional intake, and meal choices.

- The dashboard provides an interactive overview of how various demographic factors—such as **age, gender, and dietary preferences**—influence food choices and nutritional balance. It integrates key insights on **macronutrient distribution** (protein, fat, carbohydrates) and **micronutrient factors** (fiber, sugar, sodium), helping to identify popular meal combinations and preferred dietary patterns.
- Through this analysis, the project aims to:
- Explore **customer eating habits** and preferences for different meals (breakfast, lunch, etc.).
- Understand the **nutritional composition** that aligns with specific consumer groups.
- Provide **data-driven insights** to support healthier and more personalized food recommendations.

DASHBOARD OVERVIEW

Food Trends Understanding Customer Preferences

Ages
35 67

Gender
Female Male

Sum of Protein, Sum of Fat and Sum of Carbohydrates
70K (30.36%)
126K (54.61%)
35K (15.04%)
Sum of ...
Sum of ...
Sum of ...

Sum of Daily Calorie...
1M

Dietary Preference
All

Lunch Suggestion	Sum c
Veggie stir-fry	11
Vegetarian pasta with marinara sauce	
Vegetarian chili with a side of whole-wheat bread	
Vegetarian burrito bowl with brown rice	
Vegan lentil stew with brown rice	
Turkey sandwich with whole-wheat bread	
Turkey sandwich on whole-wheat bread with vegetables	
Turkey sandwich on whole-wheat bread with salad	
Turkey sandwich on whole-wheat bread	
Turkey sandwich on whole wheat bread with vegetables	
Turkey sandwich on whole grain bread	
Turkey sandwich	7
Total	**1,07**

Breakfast Suggestion	Sum of Rating
Yogurt with granola and fruit	6
Yogurt with fruit and granola	5
Whole-wheat toast with egg and avocado	3
Wholegrain toast with avocado	5
Vegan pancakes with syrup	99
Tofu scramble with whole-wheat toast	2
Tofu scramble with whole wheat toast and fruit	11
Tofu scramble with whole wheat toast	1
Tofu scramble with veggies and whole-wheat toast	6
Tofu scramble with veggies	134
Tofu scramble with vegetables and whole-wheat toast	9
Total	**1433**

Sum of Fiber, Sum of Sugar and Sum of Sodium
14K (15.21%)
15.15K (16.41%)
63K (68.38%)
Sum of Fi...
Sum of S...
Sum of S...

DESCRIPTION OF DASHBOARD

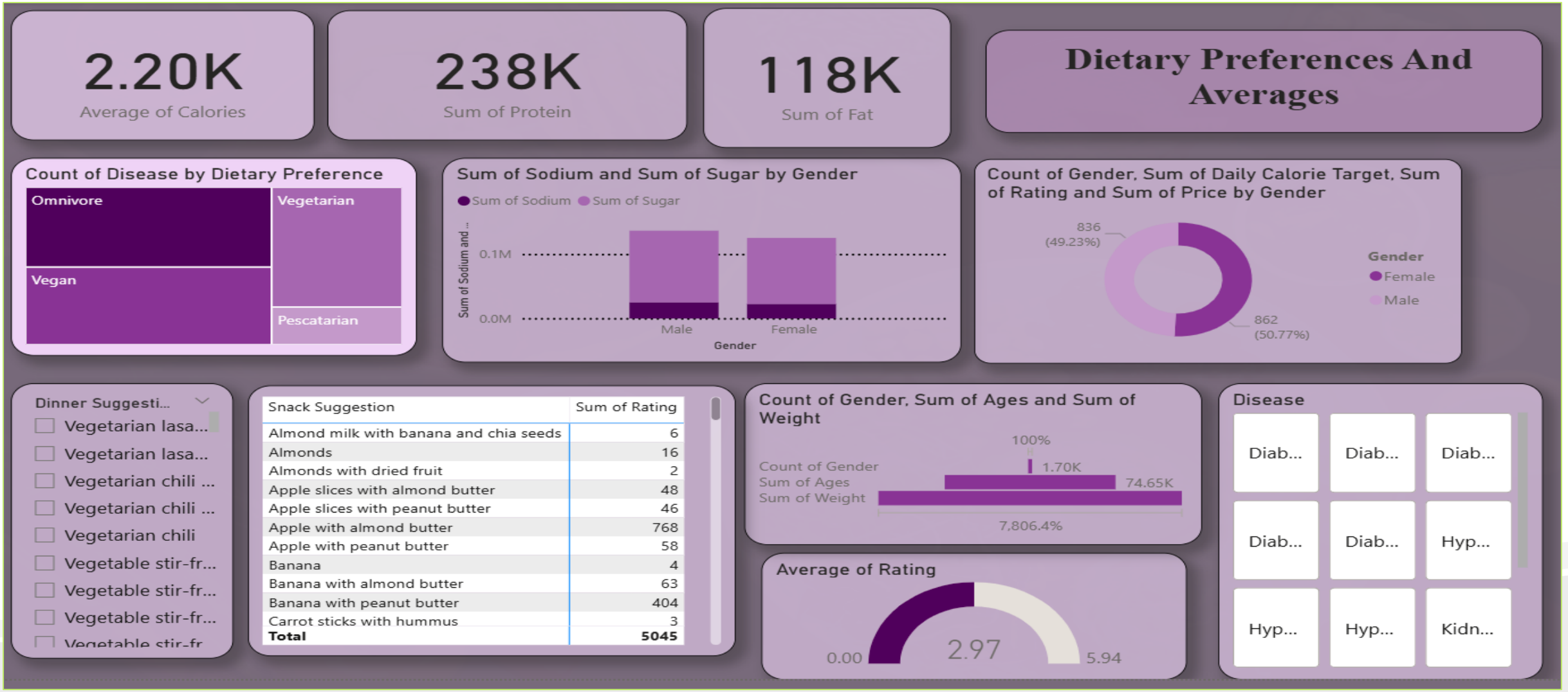
- The **“Food Trends: Understanding Customer Preferences”** dashboard provides an interactive overview of consumer food habits, nutritional intake, and dietary preferences. It serves as the foundation for analyzing how demographic factors influence eating patterns and nutritional balance.

- **Demographic Filters:**
  Users can filter data by **age range, gender,** and **dietary preference** to explore how different groups choose their meals.

- **Nutritional Insights:**
  Pie charts illustrate the **distribution of macronutrients** (Protein, Fat, Carbohydrates) and **micronutrients** (Fiber, Sugar, Sodium), giving a quick understanding of the overall nutritional composition across customer segments.

- **Meal Suggestions:**
  Tables display **popular breakfast and lunch options** along with their **ratings**, helping to identify the most preferred meal combinations among consumers.

DIETARY PRFERENCES AND AVERAGE

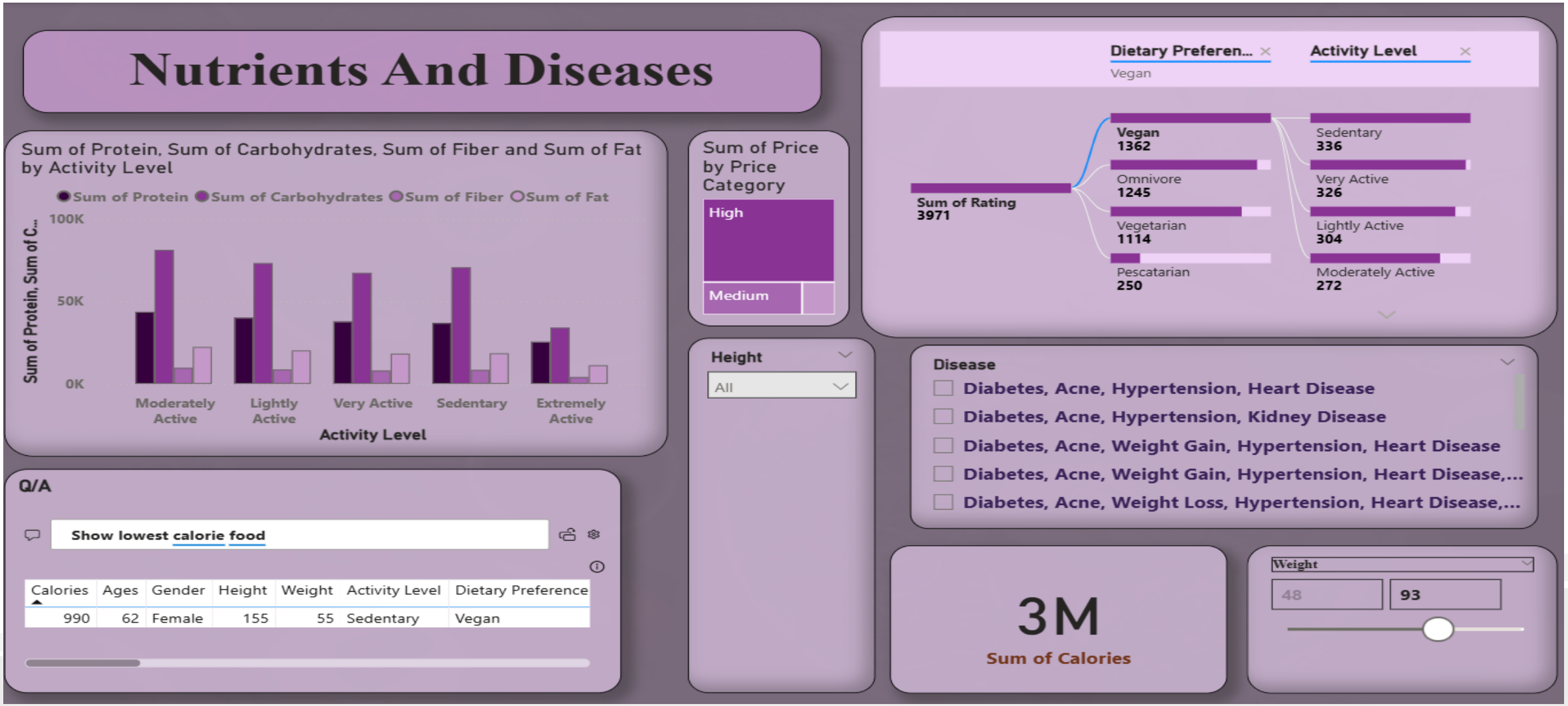


DESCRIPTION

- The **“Dietary Preferences and Averages”** dashboard provides a detailed analysis of how nutritional intake and health factors vary among consumers with different dietary choices such as **Omnivore, Vegetarian, Vegan,** and **Pescatarian**. It explores the relationship between diet, nutrition levels, and disease occurrence while also showcasing customer feedback through ratings.

  - Shows **average calories (2.20K)**, **protein (238K)**, and **fat (118K)** consumption.
  - Highlights **disease count by diet type**, linking eating patterns to health outcomes.
  - Compares **sodium and sugar intake by gender** for nutritional balance.
  - Displays **calorie targets, age, and weight distribution** across genders.
  - Lists **popular dinner and snack suggestions** with customer **ratings**.
  - Average rating of **2.97** reflects moderate satisfaction with food choices.

NUTRIENTS AND DISEASES



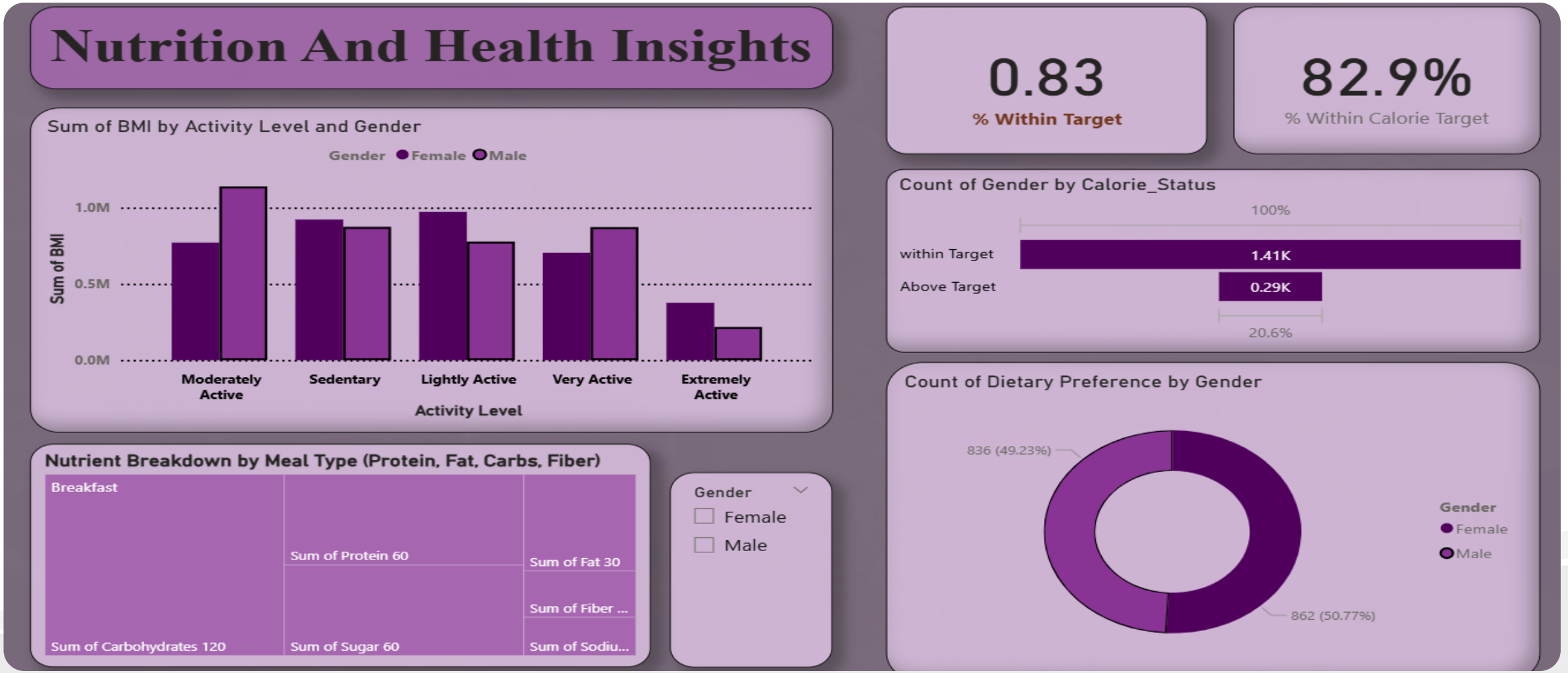
DESCRIPTION

- **Nutrients and Diseases – Overview**

This dashboard explores the connection between **nutrient intake, physical activity levels, and disease occurrence** across different dietary groups.

- **Nutrient Comparison:**
  A bar chart shows how **protein, carbohydrates, fiber, and fat** levels vary with **activity levels** (e.g., very active, sedentary).
- **Dietary Preference & Activity Link:**
  The Sankey chart visualizes the relationship between **diet types** (Vegan, Omnivore, Vegetarian, Pescatarian) and their **activity levels**, along with **ratings**.
- **Health Conditions:**
  Lists common diseases such as **diabetes, hypertension, heart disease, acne,** and **kidney issues**, helping identify potential health risks linked to diet and activity.
- **Nutritional Cost & Ratings:**
  Price categories (High/Medium) and total **ratings (3971)** indicate the balance between food cost, quality, and customer satisfaction.
- **Key Metrics:**
  Displays a total **3M calories consumed**, with filters for **height, weight,** and **activity level** to customize insights.

NUTRITION AND HEALTH INSIGHTS



DESCRIPTION

BMI Analysis:
The bar chart compares the **sum of BMI** by **activity level and gender**, showing that sedentary individuals tend to have higher BMI values compared to active ones.

•Calorie Management:
KPIs indicate **82.9% of users are within their calorie target**, reflecting good dietary control among participants.

•Gender-Based Insights:
The chart showing **count of gender by calorie status** reveals that most males and females maintain calorie goals effectively, with only a small percentage above target.

•Nutrient Breakdown:
The treemap visual illustrates the distribution of **protein, fat, carbohydrates, fiber, sugar, and sodium** across meal types, helping assess overall diet quality.

•Dietary Preference by Gender:
The donut chart shows nearly equal participation of **male (50.7%) and female (49.2%)** users across dietary preferences, suggesting balanced data representation.

FUTURE SCOPE

1. Personalized Nutrition Recommendations:
Future development can integrate **AI-driven suggestions** based on user profiles (age, gender, activity level, and health conditions) to recommend personalized meal plans.

2. Real-Time Data Integration:
Connecting the dashboard with **live health tracking apps or wearable devices** (like Fitbit or Apple Health) could provide continuous updates on calorie intake and activity levels.

3. Expanded Data Sources:
Incorporating data from **restaurants, diet surveys, and regional food trends** can enhance the accuracy and diversity of insights.

4. Predictive Health Analytics:
Using **machine learning models** to predict potential health risks (like diabetes or obesity) based on eating habits and nutrient patterns.

5. Mobile Dashboard Accessibility:
Developing a **mobile-friendly version** of the dashboard for quick access to food insights and daily nutrition summaries.

CONCLUSION

The **Food Trends and Customer Preferences** project successfully visualizes how **dietary habits, nutritional intake, and lifestyle factors** influence overall health and consumer behavior.
Through the five dashboards —
Overview, Dietary Preferences & Averages, Nutrients & Diseases, Averages by Breakfast, and Nutrition & Health Insights —
the project provides a clear understanding of:
Nutrient distribution across different diets.
The relationship between food choices and health outcomes.
Customer satisfaction and preferences across meals.