Analysis of Food and Beverage Industry Survey Data

(using Power BI)

by Komal Nama
Batch Name: MIP-DA-13

Objective

The objective of this Power BI project is to analyze survey responses from the food and beverage industry to gain insights into consumer behavior, preferences, and perceptions. The analysis will help in identifying key trends, understand brand perception, and explore potential areas for improvement in product offerings and marketing strategies.
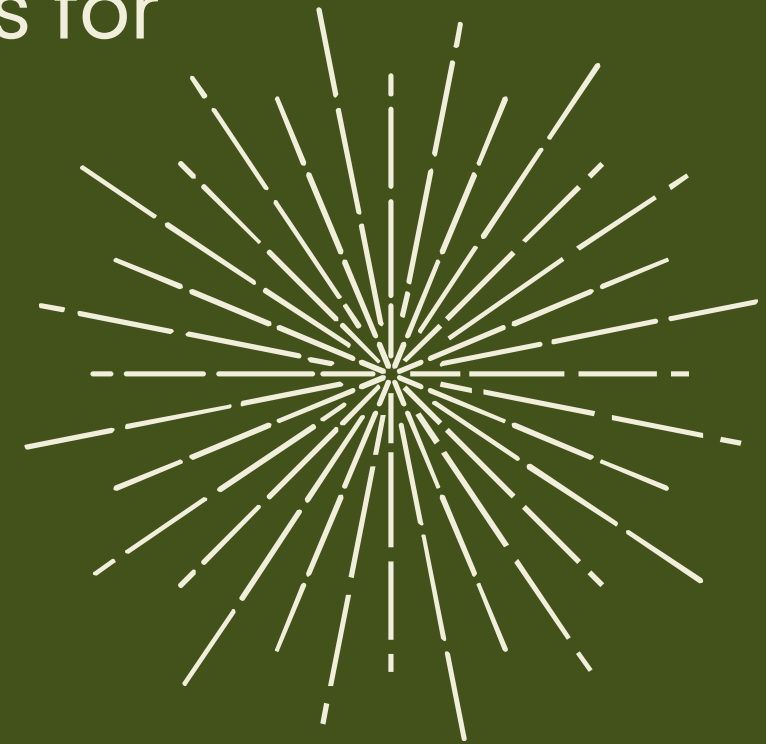
Dataset

- Response_ID: Unique identifier for each survey response.
- Respondent_ID: Unique identifier for each respondent.
- Consume_frequency: Frequency of consumption of food and beverage products.
- Consume_time: Typical time when the products are consumed.
- Consume_reason: Reasonsfor consuming the products.
- Heard_before: Whether the respondent has heard of the product before.
- Brand_perception: Respondent's perception of the brand.
- General_perception: Overall perception of the food and beverage industry.
- Tried_before: Whether the respondent has tried the product before.
- Taste_experience: Respondent's experience with the taste of the product.
- Reasons_preventing_trying: Reasons preventing respondentsfrom trying the product.
- Current_brands: Brands currently consumed by the respondent.
- Reasons_for_choosing_brands: Reasonsfor choosing specific brands.
- Improvements_desired: Improvements desired in products.
- Ingredients_expected: Expected ingredients in products.
- Health_concerns: Health concernsrelated to products.
- Interest_in_natural_or_organic: Interest in natural or organic products.
- Marketing_channels: Preferred marketing channels for product information.
- Packaging_preference: Preferencesfor product packaging.
- Limited_edition_packaging: Interest in limited edition packaging.
- Price_range: Preferred price range for products.
- Purchase_location: Typical locations where products are purchased.
- Typical_consumption_situations: Common situationsin which products are consumed

Fact Table:
fact_survey_responses

Dataset

- Respondent_ID: Unique identifier for each respondent.
- Name: Name of the respondent.
- Age: Age of the respondent.
- Gender: Gender of the respondent.
- City_ID: Identifier linking the respondent to a city

} Dimension Table: dim_respondent

- City_ID: Unique identifier for each city.
- City: Name of the city.
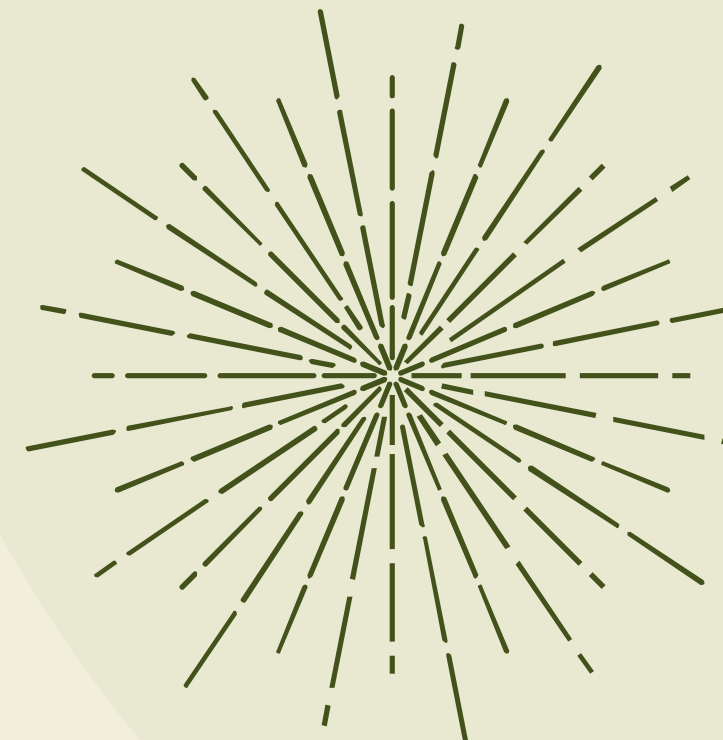- Tier: Tier classification of the city (e.g., Tier 1, Tier 2)

} Dimension Table: dim_cities
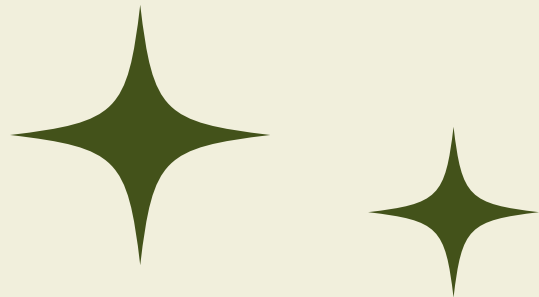
Data Cleaning

- **Missing Values:** Identified and addressed missing values and inconsistencies.

- **Outlier Detection:** Identified and treated outliers to ensure data accuracy.

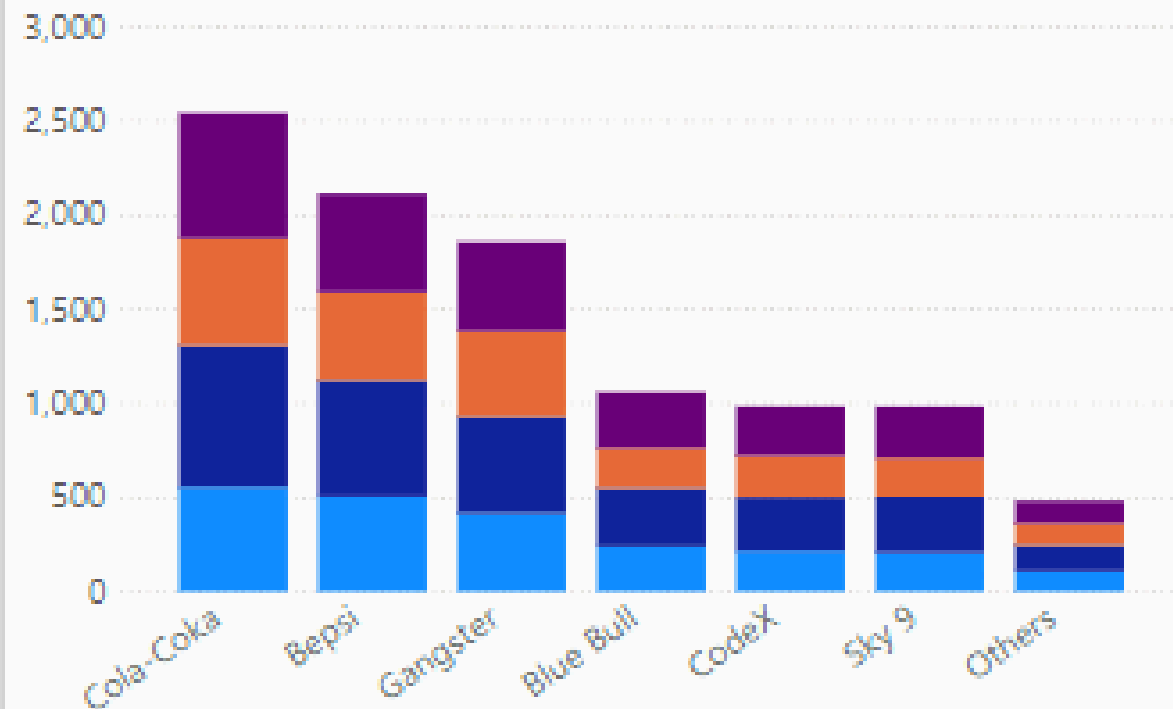- **Correcting Errors:** Fixed errors to ensure accuracy of dataset.

Dashboard

City — All
Gender — All
Age — All
Price_ra... — All

Brand Perceptions according to Respondents

- Dangerous
- Effective
- Healthy
- Not sure

Y-axis: 0, 500, 1,000, 1,500, 2,000, 2,500, 3,000

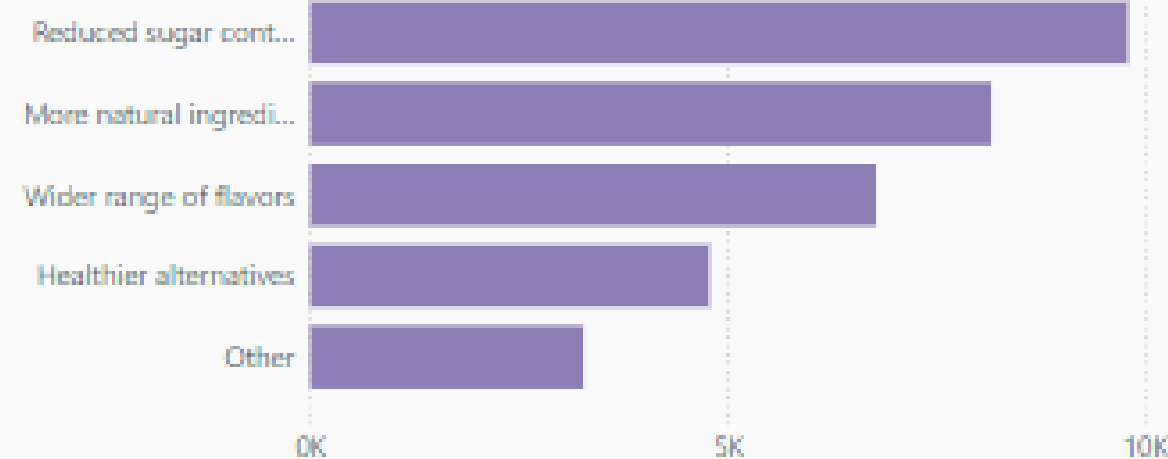X-axis: Cola-Coka, Bepsi, Gangster, Blue Bull, CodeX, Sky 9, Others
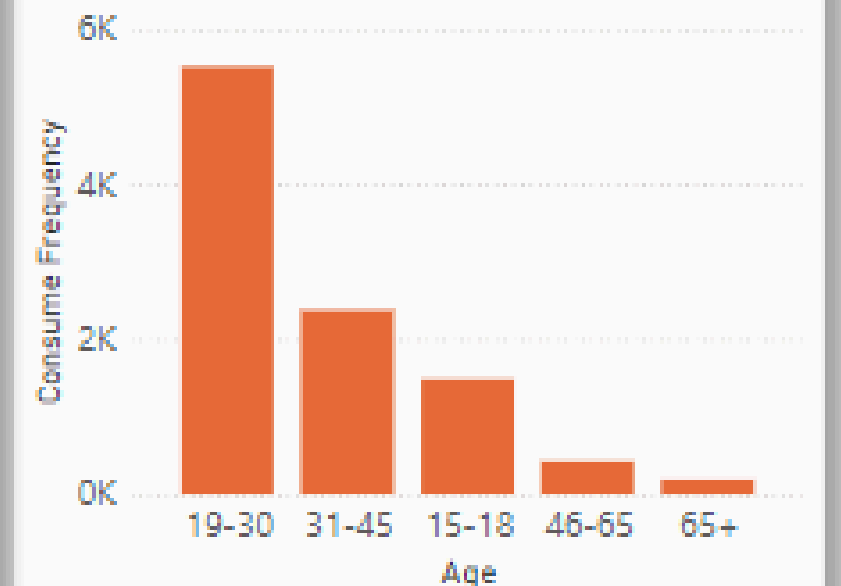
Total Responses
10K

Avg Taste Experience
3

Desired Improvements according to Taste Experience

- Reduced sugar cont...
- More natural ingredi...
- Wider range of flavors
- Healthier alternatives
- Other

X-axis: 0K, 5K, 10K

Consume Frequency by Age

Y-axis (Consume Frequency): 0K, 2K, 4K, 6K

X-axis (Age): 19-30, 31-45, 15-18, 46-65, 65+

Consumption Time of Brands

- Throughout the day 14%
- To stay awake during ... 34%
- For mental alert... 20%
- Before exercise 31%
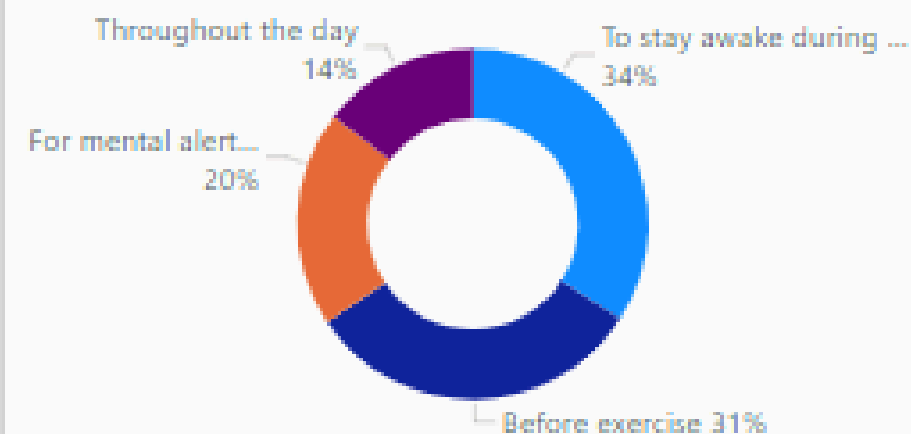
Frequency of Consuming Organic or Inorganic Food

- No
- Not Sure
- Yes

Y-axis: 0, 500, 1,000, 1,500, 2,000

X-axis: 2-3 times a week, Rarely, 2-3 times a month, Once a week, Daily
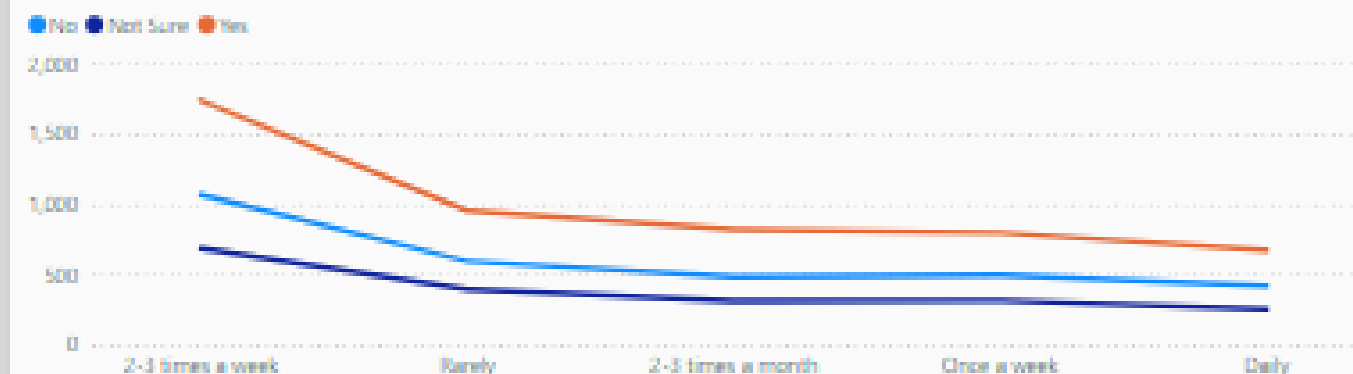
Consume Frequency by Gender

- Non-binary 5.07%
- Female 34.55%
- Male 60.38%
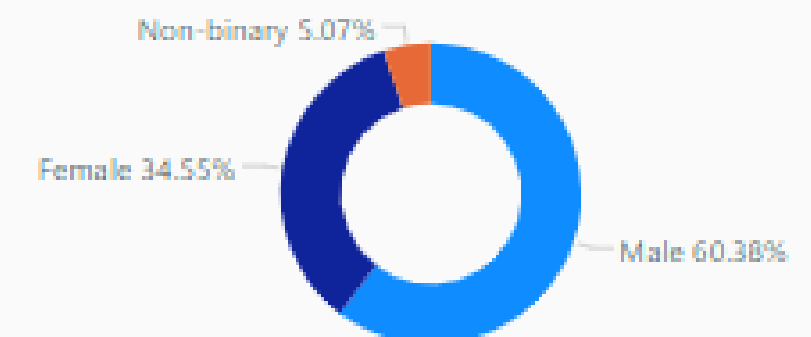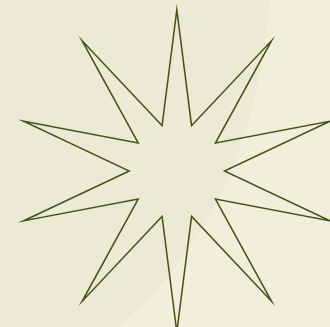
Dashboard Summary

- **Total Responses:** 10,000 respondents contributed to the data.

- **Avg. Taste Experience:** The average taste experience rated by consumers was 3 (on a scale of 1-5).

- **Brand Perceptions:** Key brands analyzed include Coca-Cola, Pepsi, and others, with perceptions categorized as "Dangerous," "Effective," "Healthy," and "Not sure."

- **Desired Improvements:** Consumers expressed a preference for reduced sugar content, more natural ingredients, and healthier alternatives.

- **Consumption Patterns:** The highest frequency of consumption is among the 19-30 age group, with notable differences observed across genders and age groups.

Key Insights

Brand Perception:

- Coca-Cola and Pepsi are perceived as the most "Effective" and "Healthy" brands, but also have significant "Dangerous" perceptions.

Desired Product Improvements:

- The majority of respondents seek healthier alternatives with less sugar and more natural ingredients.

Demographic Patterns:

- Younger age groups (19-30) exhibit the highest consumption frequency.
- Males consume these brands more frequently than females and non-binary individuals.
- Organic food consumption is less frequent compared to inorganic options, particularly in daily usage.

Conclusion

The analysis of consumer behavior in the food and beverage industry reveals a significant demand for healthier and more natural product options, with younger age groups (particularly 19-30 years old) being the most frequent consumers. Brands like Coca-Cola and Pepsi are widely perceived as effective but also face concerns about health and safety. The findings suggest that targeting these demographic segments with innovative, health-conscious product offerings and tailored marketing strategies could enhance brand perception and drive higher consumption, particularly among health-conscious consumers.