

PROJECT REPORT

Team ID: LTVIP2025TMID51206

1. INTRODUCTION

1.1 Project Overview

This project involved a college food choices case study, utilizing Tableau for data visualization and analysis.

The core objective was to transform raw data about student food habits, lifestyle, and demographics into insightful visual representations. Through various Tableau charts, the project aimed to reveal patterns, distributions, and relationships within the data, ultimately contributing to a structured overview of data analysis and visualization.

1.2 Purpose

The purpose of this project was to analyze and visualize a dataset focused on college food choices and related lifestyle attributes using Tableau.

The core aim was to transform raw data into meaningful and insightful visual representations to understand patterns, distributions, and relationships within the data, thereby contributing to a comprehensive case study and structured reporting.

2. IDEATION PHASE

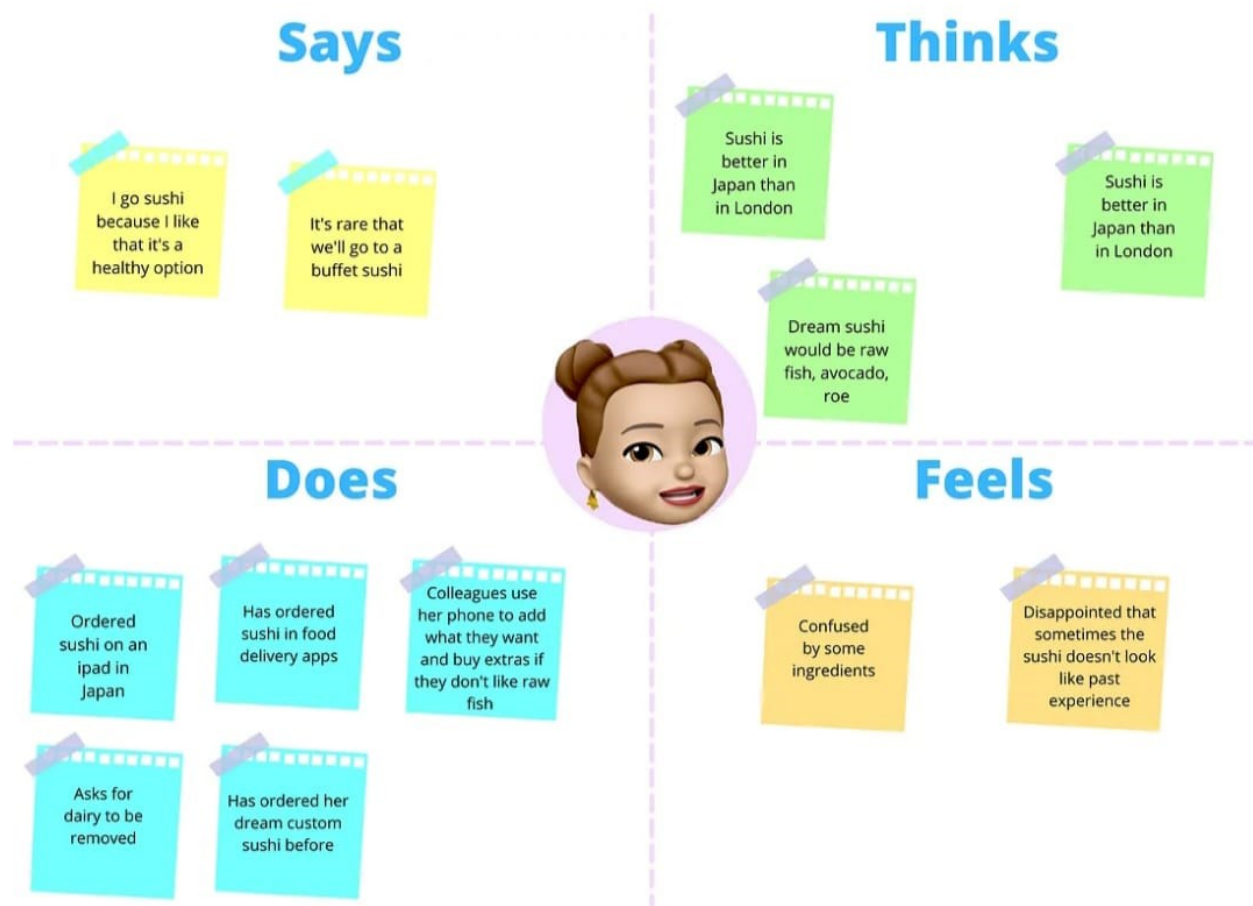
2.1 Problem Statement

Food Choice motives "It is Important to Me that the Food I Eat on a Typical Day..."		
Health -Contains a lot of vitamins and minerals -Keeps me healthy -Is nutritious -Is high in protein -Is good for my skin/ teeth/ hair/ nails etc. -Is high in fiber and roughage	Sensory appeal -Smells nice -Looks nice -Has a pleasant texture -Tastes good	Weight control -Is low in calories -Helps me control my weight -Is low in fat
Mood -Helps me cope with stress -Helps me to cope with life -Helps me relax -Keeps me awake/alert -Cheers me up -Makes me feel good	Natural Content -Contains no additives -Contains natural ingredients -Contains no artificial ingredients	Familiarity -Is what I normally eat -Is well-known -Is like the food I ate when I was a child
Convenience -Is easy to prepare -Can be cooked very simply -Takes no time to prepare -Can be bought in shops close to where I live or work -Is easily available in shops and supermarkets	Price -Is not expensive -Is cheap -Is good value for money	Ethical concern -Comes from countries I approve of politically -Has the country of origin clearly marked -Is packaged in an environmentally friendly way

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2.2 Empathy Map Canvas



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2.3 Brainstorming



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

⌚ 10 minutes to prepare
 ⌚ 1 hour to collaborate
 👤 2-8 people recommended

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

⌚ 10 minutes

- Team gathering**
Existing data on college dining, student survey results on food preferences, current dining hall menus, potential Tableau dashboards for inspiration
- Set the goal**
To distill key insights from college dining data to improve student satisfaction with food choices and optimize menu offerings using Tableau
- Learn how to use the facilitation tools**
agree on virtual whiteboard tool, how to use sticky notes, time boxing

[Open article](#) →

1 Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

⌚ 5 minutes

PROBLEM

How might we improve student satisfaction with college food choices?

Key rules of brainstorming

To run a smooth and productive session

- Stay in topic
- Encourage wild ideas
- Defer judgment
- Listen to others
- Go for volume
- If possible, be visual

3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

Stage	Need	Action	Touchpoint	Pain Point	Opportunity
Discover	Find out what food options exist	Attending orientation, Browse website	University website, orientation materials, peers	Information overload, unclear meal plan info	Clearer introductory materials resources
Explore	Get detailed info, compare options	Browse menus/app, reading reviews, trying different venues	Dining app/ website, student social media, physical dining halls	Outdated menus, long lines, inconsistent quality	Real-time menus, student review platform, feedback mechanisms
Engage	Consistently access preferred food, customize for needs	Regular dining, using mobile ordering, seeking support	POS systems, mobile ordering apps, dining staff	Repetitive menus, wait times, unclear dietary info	Rotating menus, optimized staffing, clear allergen labeling

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Decide	Finalize meal plan, establish dining routine	Selecting/renewing meal plan, consistent dining habits, providing feedback	University portal, consistent venue use, surveys	Meal plan confusion, monotony, feeling unheard	Flexible meal plan
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3.2 Solution Requirement

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Dashboard Overview	Display key summary statistics at glance.
FR-2	Time-Based Trend Analysis	Show trends in food choices over time
FR-3	Specific Filters	Provide specific filters for individual visualizations
FR-4	Data Export	Enable users to export underlying data from any visualizations
FR-5	Responsive Design	The dashboard should be viewable and functional on various screen sizes
FR-6	Performance	The Dashboard should load quickly and respond to user interactions without significant lag.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

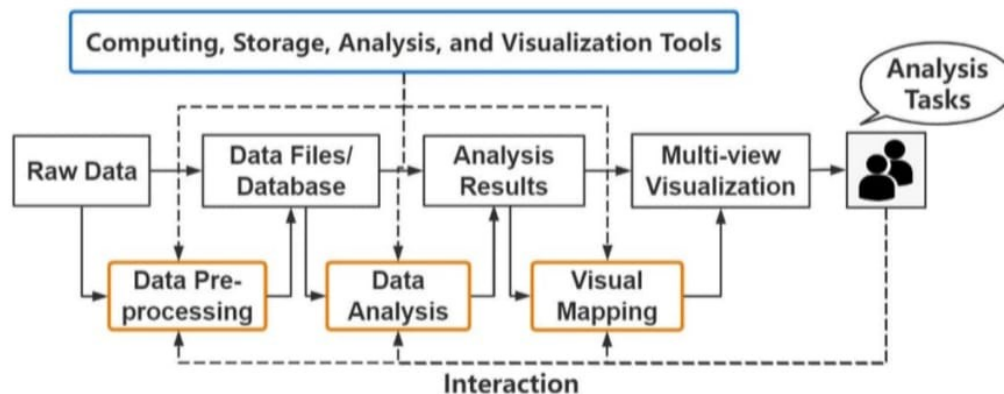
FR No.	Non-Functional Requirement	Description
NFR-1	Performance	Dashboards should load quickly, ideally within a few seconds, even with a large dataset of food choices.

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NFR-2	Scalability	The system must be capable of handling increasing volumes must be accessible to users whenever needed, ideally with 24/7 uptime, to support informed food choices and operational planning.
NFR-3	Availability	The Tableau dashboards and underlying data sources must be accessible to users whenever needed, ideally with 24/7 uptime, to support informed food choices and operational planning.
NFR-4	Security	If different user groups have varying levels of access to the data, the Tableau Server/Cloud permissions should be configured to enforce these rules.
NFR-5	Usability	Dashboards should be interactive, allowing users to drill down into data, filter results, and highlight specific trends with minimal effort.
NFR-6	Reliability	The system should gracefully handle potential data errors or missing values, preventing them from breaking the visualizations.

3.3 Data Flow Diagram



3.4 Technology Stack

Component	Tool/Technology	Purpose
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Data Source	CSV, JSON files	Raw food choices data
Visualization	Tableau Desktop	Creating interactive dashboards and stories
Storage	Google Drive / Local	Storing raw and processed datasets
Collaboration	Google Docs, Slack	Report writing
Deployment	Tableau Public / Server	Dashboard sharing and stakeholder access

4. PROJECT DESIGN

4.1 Problem Solution Fit

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Problem-Solution fit canvas 2.0		AMALTAMA	
Define CS, fit into CC	1. CUSTOMER SEGMENT(S) CS Who is your customer? i.e. working parents of 0-5 y.o. kids.	6. CUSTOMER CONSTRAINTS CC What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices.	5. AVAILABLE SOLUTIONS AS Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking.
	College students (especially those living on campus or frequently eating at college dining halls). University administration/food service management.	Budget limitations (for students). Time constraints (between classes). Lack of transparent information about food options. Dietary restrictions/allergies (need for clear labeling).	Existing options and limitations students face.
Focus on J&P, tap into BE, understand RC	2. JOBS-TO-BE-DONE / PROBLEMS J&P Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one: explore different sides.	9. PROBLEM ROOT CAUSE RC What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations.	7. BEHAVIOUR BE What does your customer do to address the problem and get the job done? i.e. directly related. Find the right solar panel installer, calculate usage and benefits, indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace).
	Students want healthy, affordable, diverse, and convenient food options. Students want to easily see what's available, dietary information, and pricing. Students struggle with limited choices, long queues, or unappealing food. Administration needs to understand student preferences and dining hall utilization to optimize offerings and reduce waste.	Lack of clear, real-time data on student food preferences and dining hall usage. Inefficient menu planning not aligned with demand. Poor communication of daily offerings, ingredients, and nutritional information. Limited feedback mechanisms for students.	Students often eat off-campus due to dissatisfaction. Students might skip meals or choose unhealthy options. Students complain verbally or via social media but without structured feedback. Dining hall staff operate based on assumptions rather than data.
Define CS, fit into CL	3. TRIGGERS TR What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.	10. YOUR SOLUTION SL What kind of solution suits Customer scenario the best? Adjust your solution to fit Customer behaviour, use Triggers, Channels & Emotions for marketing and communication.	8.1 ONLINE CHANNELS CH What kind of actions do customers take online? Extract online channels from box #7 Behaviour.
	Meal times, hunger. Unsatisfactory prior dining experiences. New academic year, new student intake.	A comprehensive Tableau dashboard visualizing: Daily menus with dietary filters. Nutritional information and allergens. Student feedback ratings/comments for specific dishes. Historical data on popular dishes and food waste. This solution provides data-driven insights for both students (informed choices) and administration (optimized operations). <small>If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fit in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.</small>	Tableau dashboard embedded on university portal/food service website. Mobile app integration (if applicable).
Explore AS, differentiate	4. EMOTIONS: BEFORE / AFTER EM How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure - confident, in control - use it in your communication strategy & design.		8.2 OFFLINE CHANNELS CH What kind of actions do customers take offline? Extract offline channels from box #7 Behaviour and use them for customer development.
	Before: Frustration, limited choice, boredom, unhealthy eating, confusion about options. After (with solution): Satisfaction, healthier eating, convenience, informed decisions, positive dining experience.		Digital screens in dining halls displaying real-time menu and wait times. Feedback kiosks/suggestion boxes.

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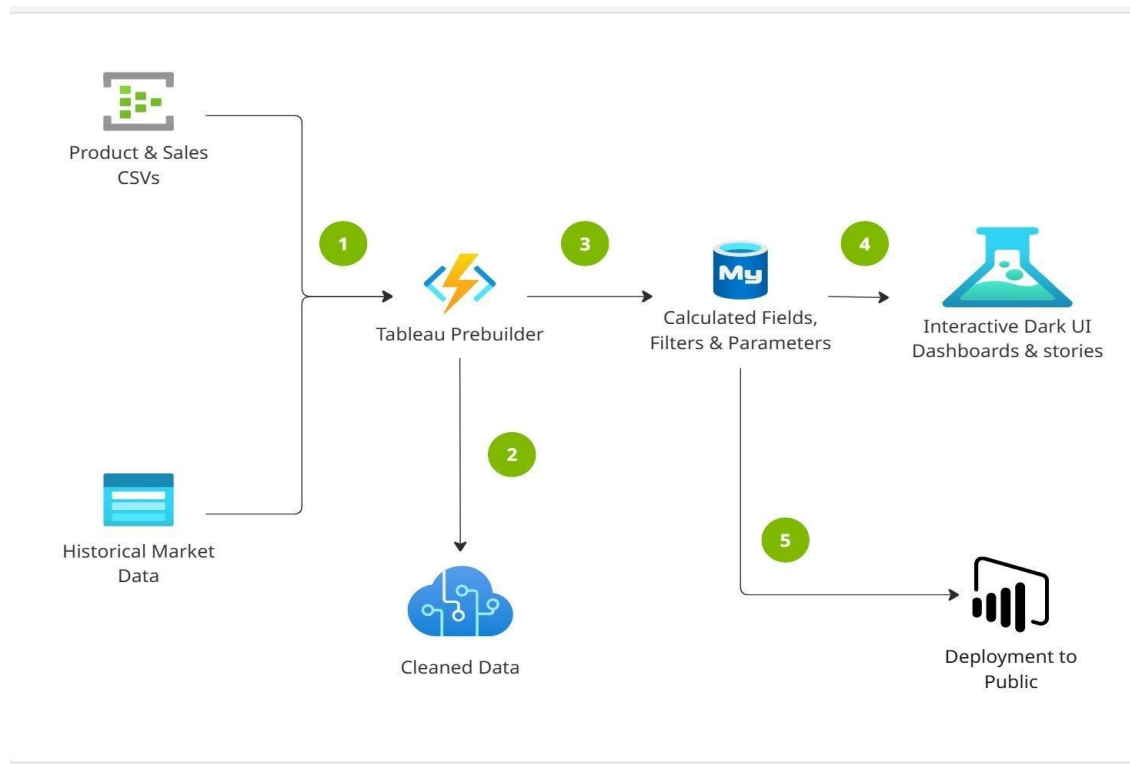
4.2 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	College dining lacks data-driven insights into student preferences and efficiency, leading to dissatisfaction and waste
2.	Idea / Solution description	Implement an interactive Tableau dashboard integrating POS, survey, and inventory data to provide real-time insights into student preferences, demand patterns, and waste, optimizing menu planning and operations
3.	Novelty / Uniqueness	The solution offers unique, integrated, real-time, and customizable data visualization and predictive analytics tailored specifically for college dining, combining qualitative and quantitative data for actionable insights
4.	Social Impact / Customer Satisfaction	Improves student satisfaction by aligning menus with preferences, reducing food waste, and fostering a positive campus dining experience
5.	Business Model (Revenue Model)	Primarily aims for cost savings through efficiency and increased dining hall usage; could be offered as a consulting service to other institutions
6.	Scalability of the Solution	Highly scalable for multiple campuses/ dining halls, adaptable for new data sources, and capable of integration with advanced analytics.

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4.3 Solution Architecture



5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint1	Data Collection	USN-2	As a user, I can load data into the processing environment	1	High	ALL
Sprint2		USN-3	As a user, I can handle missing values in the dataset	3	Medium	ALL

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Sprint2	Data Preprocessing	USN-4	As a user, I can encode or map categorical variables appropriately	2	Medium	ALL
Sprint-3	Data Preprocessing	USN-5	As a user, I can build the initial model based on processed data	5	High	ALL
SPRINT - 4	Making Graphs/Visualizations	USN - 6	Dark ui with eye feasted color palette	6	HIGH	ALL
Dashboard & STORIES						
SPRINT - 5	Report & documentation	USN - 7	The step-by-step guide documentation	7	MEDIUM	ALL

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	The analysis utilized a dataset containing various attributes related to individual's food habits, lifestyle and demographic information. The data was directly loaded and rendered with Tableau for visualization
0.	Data Preprocessing	For the purpose of generating these visualizations, the data was assumed to be in a cleaned and prepared state, suitable for direct use in tableau
3.	Utilization of Filters	While not Explicitly demonstrated in the provided chart creation steps, Tableau's filtering capabilities are implicitly available for all visualizations

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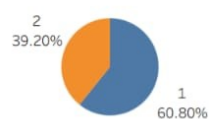
4.	Calculation fields Used	According to the data required for the Visualizations
5.	Dashboard design	No of Visualizations / Graphs - 4 Dashboards
6	Story Design	No of Visualizations / Graphs - 1 Stories with 6 story points

7. RESULTS

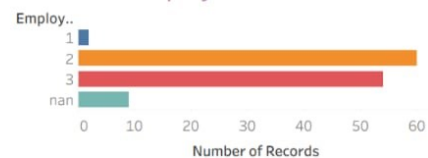
7.1 Output Screenshots DASHBOARDS:

Lifestyle Overview

Gender Distribution



Employee Status



Marital Status



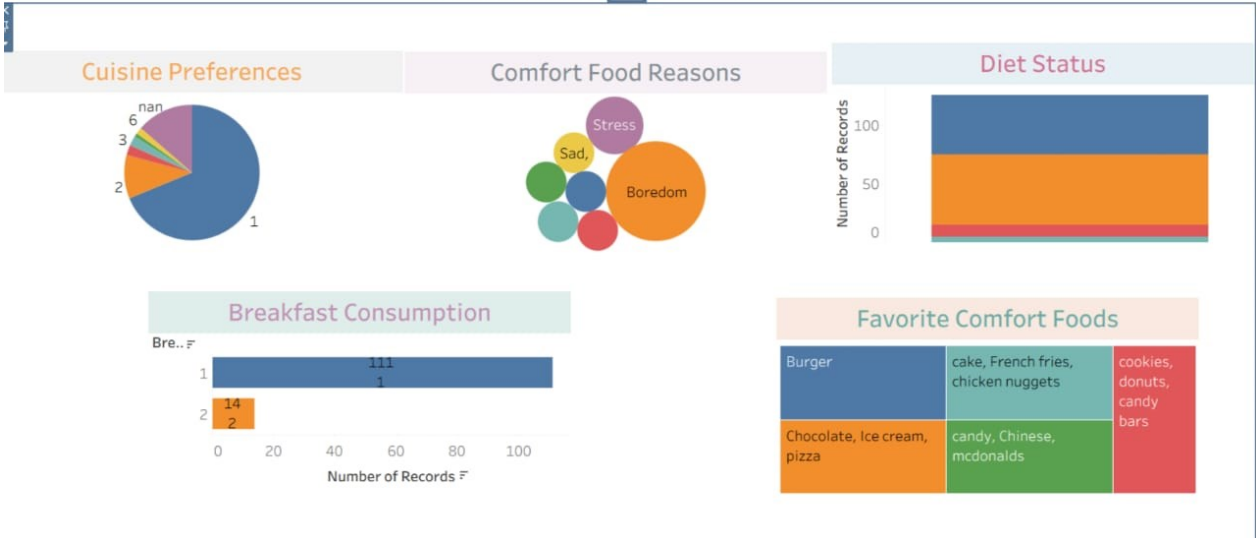
Life Rewarding



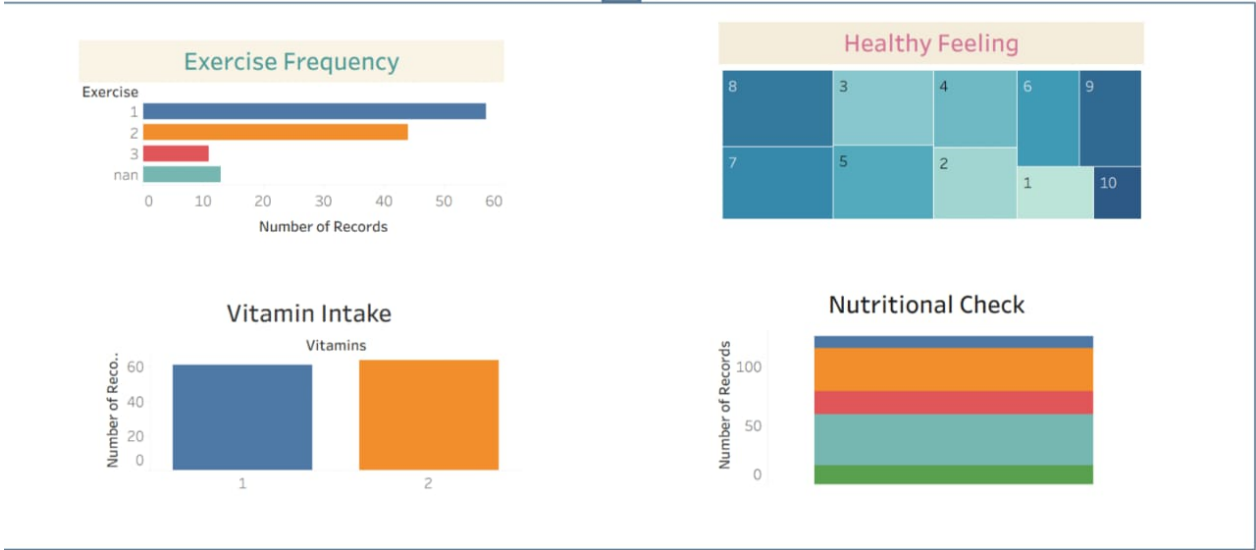
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Dietary Habits and Preferences



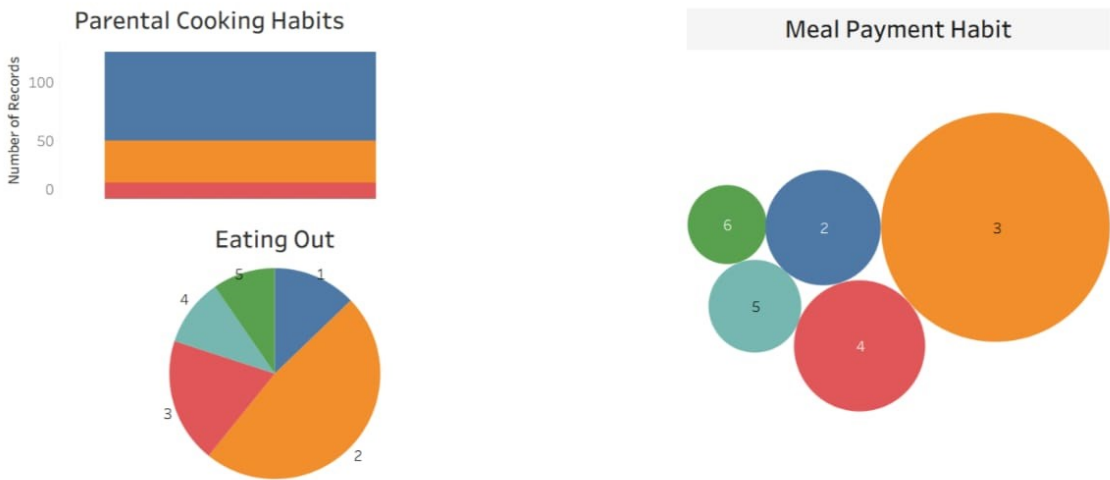
Health and Nutrition



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Parental Influence and Eating Out



STORY 1 OUTPUTS:

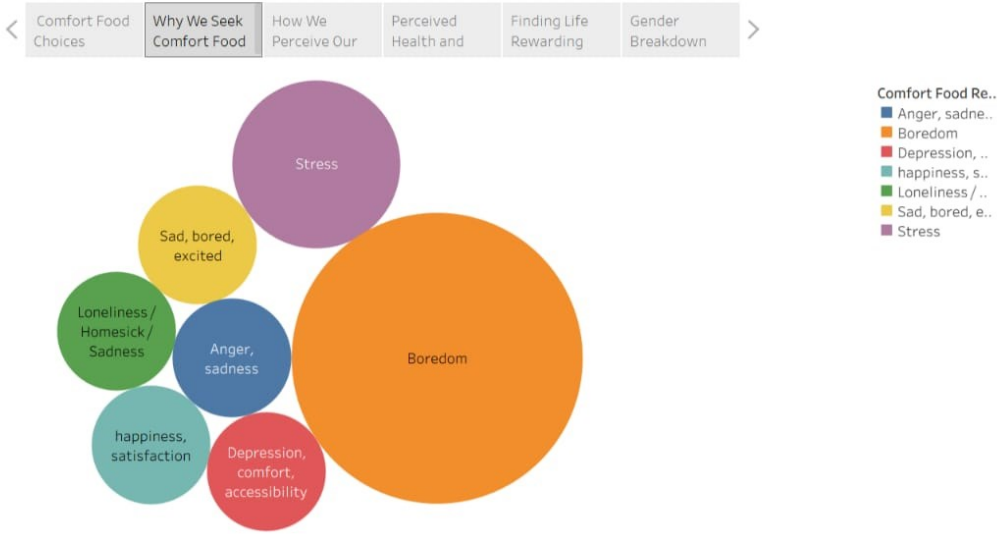
The Comfort Food Chronicles : Unpacking Emotional Eating



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The Comfort Food Chronicles : Unpacking Emotional Eating

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Comfort Food Choices

Why We Seek Comfort Food

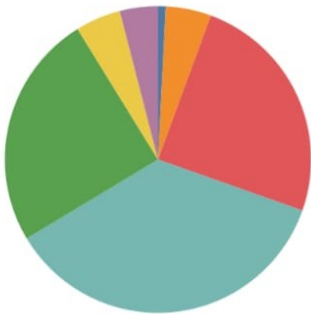
How We Perceive Our

Perceived Health and

Finding Life Rewarding

Gender Breakdown

>



Self Perception ..

- Null
- 1
- 2
- 3
- 4
- 5
- 6

The Comfort Food Chronicles : Unpacking Emotional Eating

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Comfort Food Choices

Why We Seek Comfort Food

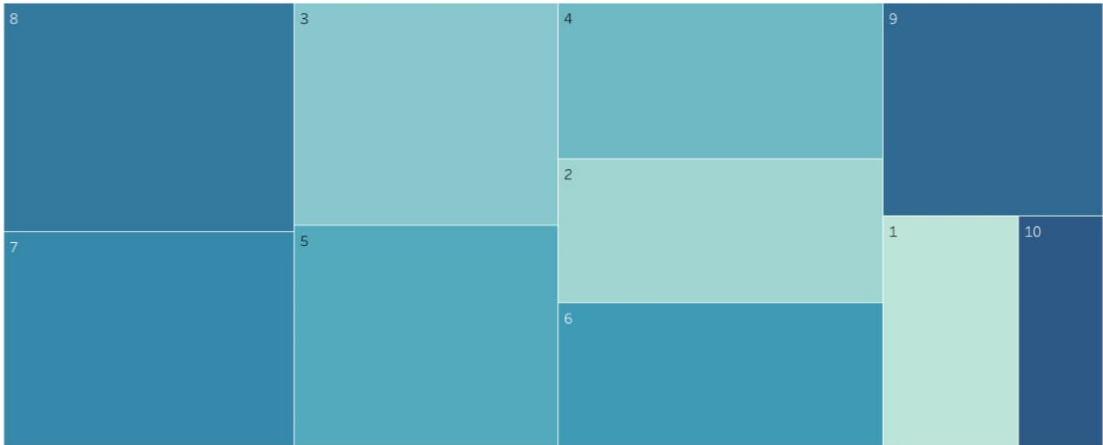
How We Perceive Our

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Gender Breakdown

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Avg. Healthy Fe..

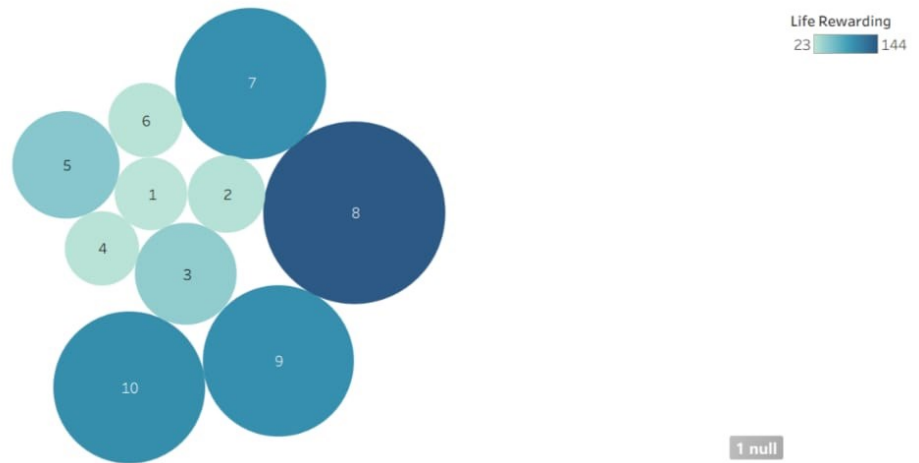
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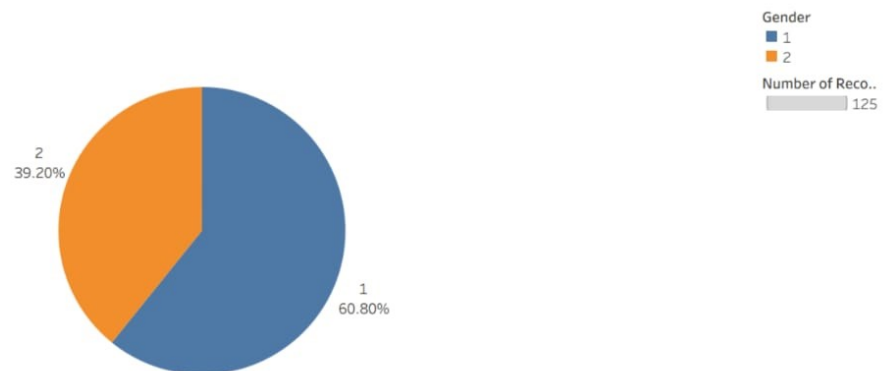
The Comfort Food Chronicles : Unpacking Emotional Eating

< Comfort Food Choices Why We Seek Comfort Food How We Perceive Our Perceived Health and Finding Life Rewarding Gender Breakdown >



The Comfort Food Chronicles : Unpacking Emotional Eating

< Comfort Food Choices Why We Seek Comfort Food How We Perceive Our Perceived Health and Finding Life Rewarding Gender Breakdown >



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8. ADVANTAGES & DISADVANTAGES

- **ADVANTAGES:**

- **User-Friendly Dashboards:** Intuitive interface with dark-themed visuals that reduce eye strain and enhance readability.
- **Interactive Insights:** Real-time filtering and data slicing allow users to extract exactly what they need without manual intervention.
- **Reusable Framework:** The dashboard model can be reused for other smartphone brands or markets by simply updating the dataset.
- **Data-Driven Decision Making:** Helps strategists, marketers, and executives make smarter, evidence-based decisions.
- **Time-Saving:** Reduces the manual workload for analysts by providing ready-to-explore visualizations.

- **DISADVANTAGES:**

- **Platform Limitation:** Tableau Public may limit some functionality such as real-time backend connection and publishing privacy.
- **Dependence on Data Accuracy:** Insights are only as good as the quality of input data; inaccurate or outdated datasets could mislead.
- **Static Structure in Story:** While dashboards are interactive, Tableau stories have limited flexibility in dynamic narration.

9. CONCLUSION

This project effectively demonstrated the use of Tableau for visualizing diverse data related to food habits, lifestyle, and demographics.

We explored creating various charts – bar, pie, line, histogram, treemap, packed bubble, and box plots - to reveal patterns, distributions, and trends in fields like weight, gender, etc.

The core strength of this approach lies in transforming complex data into clear, insightful, and communicable visuals, aiding in quick understanding and decision-making, despite being reliant on Tableau software and data quality.

10. FUTURE SCOPE

- Deeper analysis of data relationships.
- Predictive modeling to forecast outcomes.

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- User segmentation based on habits.
- Advanced dashboarding for interactive exploration and storytelling.
- Integrating external data for richer insights.
- Developing actionable recommendations from the findings.