

PROJECT REPORT FORMAT

1. INTRODUCTION

1.1 Project Overview

Provide an overview of the study, including the primary goal of analyzing global food trends and consumer behavior from 1961 to 2023. You could mention how Power BI is being used for data visualization and analysis, leveraging historical data to provide insights into food consumption patterns, trends, and changes in preferences over the decades.

1.2 Purpose

The purpose of the study, such as identifying shifts in food consumption, understanding global food security issues, tracking emerging food trends, and offering insights into consumer behavior and market opportunities.

2. IDEATION PHASE

2.1 Problem Statement

The global food industry has undergone significant changes over the past several decades, driven by factors such as technological advancements, changing consumer preferences, economic development, and geopolitical shifts. However, there is a lack of a unified, comprehensive analysis that tracks these changes over a long period (1961–2023). This gap makes it difficult for policymakers, businesses, and researchers to make informed decisions based on historical food consumption trends and predict future patterns effectively.

2.2 Empathy Map Canvas

An Empathy Map Canvas is a visual tool used to better understand the users' needs, feelings, and challenges. For this project on analyzing global food trends from 1961 to 2023, we can use the empathy map to explore the perspectives of various key stakeholders (such as policymakers, consumers, food manufacturers, and researchers) who would benefit from this analysis.

Policymakers: Government and international organizations working on food security, nutrition, and agriculture.

Food Manufacturers/Producers: Companies and industry leaders looking to understand changing consumer preferences.

Consumers: People who make personal decisions about food consumption, such as dietary preferences or concerns about sustainability.

SEE :- This section looks at what the stakeholders observe in their environment

SAY & DO:-This section explores what stakeholders say and do in response to their challenges.

2.3 Brainstorming

Key areas for the Power BI report could include:

- Analyzing changes in global crop production over time.
- Exploring regional trends (Africa, Asia, Europe, Americas).
- Examining food production in relation to population growth.
- Identifying regions most vulnerable to food insecurity.
- Analyzing food production efficiency, i.e., how much food is produced per unit of land or per capita.

3.REQUIREMENT ANALYSIS

3.1 customer journey map

1. Awareness Stage:

- **Customer Need:** Consumers and businesses seek information on food production, sustainability, and supply chain transparency.
- **Touchpoints:** Online research, social media, food documentaries, government reports, sustainability blogs.
- **Pain Points:** Lack of reliable data, misinformation, and difficulty in finding credible sources.

2. Consideration Stage:

- **Customer Need:** Understanding the impact of food production choices, comparing sourcing options, and evaluating sustainability practices.
- **Touchpoints:** Agricultural reports, supplier websites, industry conferences, expert opinions, product certifications.
- **Pain Points:** Conflicting information, complex certification processes, and limited accessibility to in-depth reports.

3. Decision Stage:

- **Customer Need:** Choosing food sources based on production methods, sustainability impact, and ethical considerations.
- **Touchpoints:** Supplier engagement, purchasing platforms, third-party certifications, consumer reviews.
- **Pain Points:** Higher costs of sustainable options, limited availability of ethically produced food, difficulty in verifying claims.

4. Purchase & Consumption Stage:

- **Customer Need:** Acquiring and consuming food products while ensuring quality and sustainability.
- **Touchpoints:** Supermarkets, online grocery stores, farmer's markets, direct farm purchases.
- **Pain Points:** Packaging waste, food miles, lack of transparency in supply chains.

3.2 Solution Requirement

- **Data Sources:** Global food production data, population data, economic indicators.
- **Key Metrics:** Total food production (cereals, fruits, vegetables), yield per hectare, food availability per capita, production per region, etc.
- **Interactivity:** Users should be able to filter data by region, time, or product.
- **Visualizations:** Line charts, bar graphs, geographic maps, and scatter plots for trend analysis and comparisons.

3.3 Data Flow Diagram

- **Inputs:** Raw data on food production, population, and regional statistics.
- **Processing:** Data cleaning, transformation, and aggregation for visualization.
- **Outputs:** Visual reports, interactive dashboards, and key insights for stakeholders.

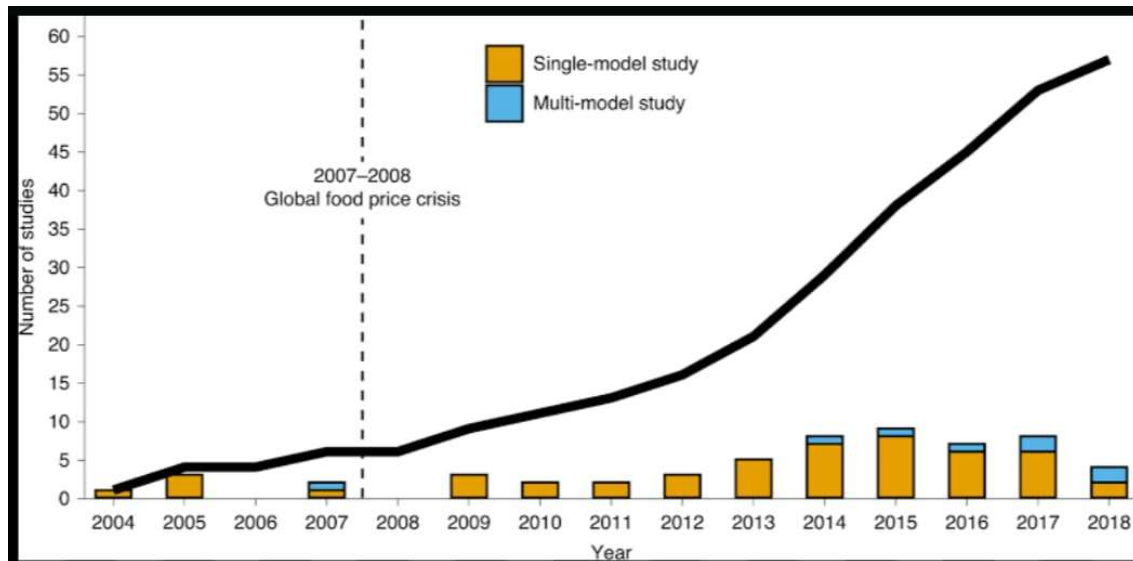
3.4 Technology Stack

- **Power BI** for reporting and data visualization.

3.4 Technology stack

1. Data Collection & Ingestion
2. Data Processing & Analysis
3. Data Storage & Management
4. Data Visualization & Reporting
5. Cloud & Infrastructure
6. Blockchain & Supply Chain (Optional, for Transparency & Traceability)

4.PROJECT DESIGN



4.2 Proposed Solution

1. Awareness Stage
2. Consideration Stage:

4.3 Solution Architecture

1. Awareness Stage:
2. Consideration Stage
3. Decision Stage:
4. Purchase & Consumption Stage:
5. Post-Purchase & Advocacy Stage:

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

A typical project plan could include:

- **Phase 1 (Data Collection and Preprocessing)** – 1-2 days to collect, clean, and prepare the data.
- **Phase 2 (Report Design and Prototyping)** – 8 days to design the Power BI report and develop visualizations.

- **Phase 3 (Testing and Finalization)** – 5 days to test the dashboard, finalize visualizations, and ensure data accuracy.
- **Phase 4 (Deployment and Review)** – 9 days for deployment and user feedback.

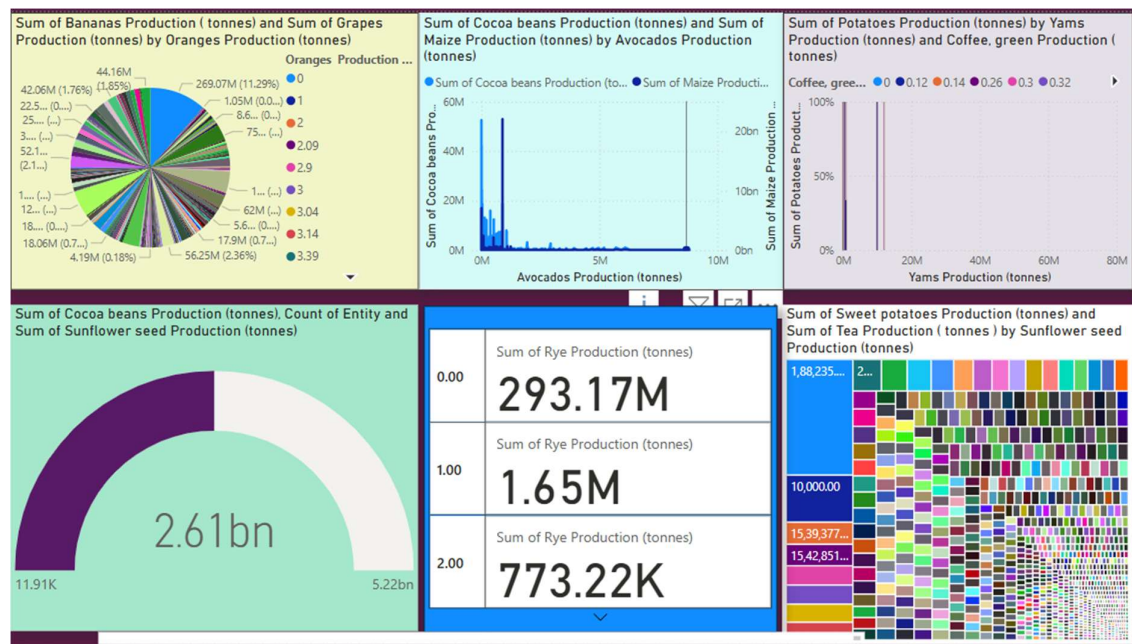
6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

Performance testing aims to evaluate how the system performs under various conditions and loads. The key aspects of performance testing include scalability, stress, load, endurance, and capacity testing.

7. RESULTS

7.1 Output Screenshots



8. ADVANTAGES & DISADVANTAGES

Advantages

1. Increased Efficiency and Productivity:
2. Sustainability and Environmental Benefits:

3. Diverse Food Sources:

Disadvantages

1. Inequality in Food Distribution:

2. Inequality in Food Distribution:

3. Health and Ethical Concerns

9.CONCLUSION

Global food production trends are shaping the future of agriculture and food security across the world. Technological advancements, such as precision farming and biotechnology, have led to increased efficiency and productivity, enabling farmers to meet the rising demand for food. Sustainable practices and alternative food sources, like plant-based proteins and vertical farming, are also gaining prominence as the industry seeks to reduce environmental impacts and cater to changing consumer preferences.

However, these trends also bring challenges. Environmental concerns, such as soil depletion and water pollution, continue to be significant, alongside issues of inequality in food distribution and the potential health risks associated with some technological advancements. Additionally, the growing reliance on technology raises questions about accessibility, particularly in developing countries, and the impact on traditional labor markets.

10.FUTURE SCOPE

The future of global food production is poised for significant transformation, driven by evolving technologies, changing consumer demands, and the urgent need for sustainability. The scope of global food production analysis will expand to address new challenges and opportunities as the global population continues to grow and environmental pressures intensify. Here are key areas where future food production analysis will likely focus:

1. Integration of Advanced Technologies
2. Climate-Smart Agriculture and Resilience
3. Sustainable Food Systems and Circular Economy

11.APPENDIX

Source Code(if any)

The source code for data extraction ,cleaning and transformation is maintained in the project repository on GitHub

Dataset Link:

Data has been sourced from the World Bank, IMF, and various government reports. Detailed links to these datasets are provided in the documentation.

GitHub & Project Demo Link:

GitHub Repository: Insert GitHub Link Here

Live Dashboard Demo: Insert Project Demo Link Here