A
Report File on

Analysis of User Behaviour, Cooking Preferences, and Order Trends in Power BI

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1. Introduction

This report presents an analysis of user behavior, cooking preferences, and order trends based on the datasets provided. The analysis was conducted using Power BI, with the aim of understanding key patterns and providing insights to improve business decisions. The datasets used include:

- **UserDetails csv**: Contains demographic information about the users.

- **CookingSessions csv**: Details about the cooking sessions, including session timings and ratings.

- **OrderDetails csv**: Contains data about user orders, including meal types, dish names, and revenue.

2. Data Preparation

The data was imported into Power BI from CSV files. After importing, I performed the following cleaning tasks:

- **Ensured proper formatting** for date and time columns (Session Start and Session End).

- **Removed duplicates** and handled missing values by filtering or replacing missing data points.

- **Formatted numeric fields** such as Amount (USD) and Duration (mins) for accurate calculations and visualizations.

3. Relationships and Data Model

To analyze the data effectively, I established relationships between the tables in Power BI's Model View:

- **UserDetails csv[User ID] → CookingSessions csv[User ID]**

- **CookingSessions csv[Session ID] → OrderDetails csv[Session ID]**

These relationships were set to "One-to-Many" with the correct direction to ensure accurate data analysis.

4. DAX Measures and Calculations

I created several key DAX measures to calculate important metrics for the report:

- **Total Revenue:**
  Total Revenue = SUM(OrderDetails csv[Amount (USD)])

- **Average Session Rating:**
  Avg Session Rating = AVERAGE(CookingSessions csv[Session Rating])

- **Popular Dish by Count:**
  Popular Dish = MAXX(SUMMARIZE(OrderDetails csv, OrderDetails csv[Dish Name], "Count", COUNT(OrderDetails csv[Order ID])), [Dish Name])

- **Order Completion Rate:**
  Completion Rate = DIVIDE(COUNTROWS(FILTER(OrderDetails csv, OrderDetails csv[Order Status] = "Completed")), COUNTROWS(OrderDetails), 0)

These measures allow for a deeper understanding of the key performance indicators.

5. Visualizations

Click Here to see :: Dashboard

In Power BI, I used Card visuals to highlight and display the key insights from the data. Below are the key metrics showcased in the Card visuals:

Total Revenue:

The Total Revenue generated from all completed orders is $180.00. This provides an overview of the financial performance based on the data provided.

Completion Rate:

The Completion Rate of 88% indicates that most orders are successfully completed, contributing to overall customer satisfaction.

Session Ratings:

With an Average Session Rating of 4.52, the cooking sessions are generally well-received, showcasing high-quality user experiences.

Popular Dish:

The Popular Dish metric shows that dish number 4 is the most ordered, helping the business focus on the most in-demand meals.

Age Group Distribution:

The Age Group Distribution shows that there are 5 distinct age groups involved, providing valuable insights into the age diversity of users.

Total Orders per User:

The Total Orders per User stands at 16, indicating a significant level of user engagement and repeat business.

Popular Dishes:

A Bar Chart was used to display the count of orders for each dish. This chart helps us identify which dishes are ordered the most. The bar chart shows the frequency of orders for each dish, highlighting the most popular dishes in the dataset.

Revenue by Meal Type:

A Pie Chart was used to show the distribution of revenue across different meal types (Breakfast, Lunch, Dinner). This chart visually represents how the revenue is divided between each meal type. This is useful for identifying which meal type is generating the most revenue, such as Dinner contributing the largest portion of total revenue.

Order Completion Rate:

A Card Visual was used to display the overall Order Completion Rate of 88%. This metric is important for understanding how successful the orders are, as it shows the proportion of completed orders out of all orders.

Session Ratings vs. Revenue:

A Scatter Chart was created to compare session ratings (CookingSessions[Session Rating]) with revenue (OrderDetails[Amount (USD)]). This chart provides insight into how user satisfaction (ratings) correlates with the revenue generated, helping identify if higher session ratings are associated with higher revenues.

6. Slicers and Interactivity

To provide interactivity for better data exploration, I created the following slicers:

- **Day Name**: To filter orders by the day of the week.

- **Month Name**: To filter orders by the month.

- **Dish Type**: To view trends based on dish categories.

- **Meal Type**: To explore revenue by different meal types (Breakfast, Lunch, Dinner).

- **Age Range**: To analyze trends based on user demographics.

These slicers help in dynamically exploring the data based on different criteria.

7. Conclusion and Recommendations

Based on the insights gathered, I recommend the following:

- **Focus on Dinner Sales:** Given that dinner orders generate the most revenue, consider marketing promotions around dinner meals.

- **Target Urban Users Aged 25-35:** This group shows a higher order frequency and could be targeted for promotions and special offers.

- **Improve Cooking Sessions:** Higher ratings correlate with higher order value, so enhancing the user experience in cooking sessions can lead to increased sales.

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