

Detailed Analysis and Business Recommendations Report

Introduction

This report provides a comprehensive analysis of customer behavior, cooking session insights, and order patterns using data from three datasets: UserDetails, CookingSessions, and OrderDetails. The analysis aims to uncover valuable insights that can guide strategic decisions to enhance customer satisfaction, operational efficiency, and revenue generation.

Data Overview

The datasets contain information on users, their cooking sessions, and order details. After cleaning and merging, the final dataset comprises the following key features:

- **User Information:** Age, location, favorite meal, total orders.
 - **Cooking Sessions:** Dish name, meal type, session duration, session rating.
 - **Order Details:** Order status, amount spent, order rating.
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Findings

1. Top 10 Popular Dishes

Analysis of dish popularity reveals:

- **Most Popular Dishes:** Spaghetti and Grilled Chicken are tied as the most ordered dishes, followed by Caesar Salad.
- **Insights:** Dinner dishes dominate the popularity chart, highlighting the importance of evening meal offerings.

Visualization: Bar chart showcasing the frequency of top dishes.

2. Relationship Between Cooking Sessions and User Orders

Users with higher session ratings tend to have higher order ratings and spending:

- **Alice Johnson:** High session and order ratings, contributing \$35 in revenue.
- **Grace King:** Achieved the highest average ratings (5.0) in both sessions and orders.

Business Recommendation:

- Focus on users with high session engagement for personalized offers.
 - Incentivize users with lower ratings through loyalty programs to increase retention.
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3. Revenue Contribution by Location

Revenue varies significantly by location:

- **Top Locations:** New York (\$35) leads, followed by Chicago and Los Angeles.
- **Insights:** Urban areas generate the most revenue, indicating higher customer engagement in metropolitan cities.

Visualization: Bar chart highlighting top revenue-generating locations.

Business Recommendation:

- Invest in targeted marketing campaigns in top-performing cities.
 - Conduct surveys in low-performing areas to identify barriers and potential enhancements.
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4. Session Duration by Meal Type

Analysis of session duration shows:

- **Longest Sessions:** Dinner sessions average 38.75 minutes.
- **Shortest Sessions:** Lunch sessions are the quickest, averaging 21 minutes.

Business Recommendation:

- Introduce faster meal prep options for dinner to cater to time-conscious users.
 - Promote lunch offerings with quick meal deals to attract working professionals.
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5. User Demographics and Orders

Age-related order patterns indicate:

- **Active Age Groups:** Users aged 28, 35, and 42 place the highest number of orders.
- **Insights:** Users in their late 20s to early 40s are the most engaged.

Visualization: Line chart depicting orders by age group.

Business Recommendation:

- Design age-specific promotions (e.g., health-conscious options for younger users, premium meals for older groups).
 - Leverage demographic insights for personalized email campaigns.
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Challenges and Limitations

1. **Missing Data:** Missing ratings in OrderDetails were filled with mean values, which might not accurately reflect user preferences.
 2. **Data Scope:** The datasets are limited to current users and sessions, which might not capture broader trends.
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Strategic Recommendations

1. **Personalized User Engagement:**
 - Leverage user data to offer personalized meal suggestions and discounts based on past preferences.
 - Use high session ratings as a predictor for recommending premium offerings.
 2. **Operational Improvements:**
 - Optimize dinner preparation processes to reduce session times.
 - Expand popular dish offerings (e.g., Spaghetti, Grilled Chicken) in new regions.
 3. **Marketing Strategies:**
 - Focus on urban regions like New York and Chicago for campaigns.
 - Target the most active age groups (28–42) with tailored advertisements.
 4. **Enhance User Experience:**
 - Introduce features like session tracking and gamification to increase session ratings.
 - Gather user feedback to improve meal options and service quality.
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Conclusion

The analysis highlights key areas of strength and opportunities for growth, from popular dishes and session engagement to location-specific revenue strategies. Implementing these recommendations can enhance customer satisfaction, boost operational efficiency, and drive revenue growth.