Research Plan for Restaurant Performance Analysis Dashboard

1. Research Questions:

- How does the cost of a restaurant influence its rating and order volume?
- What are the most popular cuisines based on restaurant ratings and order volumes?
- What is the correlation between restaurant location (city) and its performance (rating, order volume)?
- How does the number of ratings correlate with the average rating?
- What impact does a restaurant's menu variety have on its performance?

2. Hypotheses:

- Restaurants with higher costs tend to have higher ratings and order volumes.
- Certain cuisines are more popular and have higher order volumes.
- Restaurants in larger cities have higher ratings and order volumes. - A higher number of ratings correlate with a higher average rating.
- Restaurants with a greater variety of menu items perform better.

3. Visualizations:

- Cost vs. Rating and Order Volume (scatter plots).
- Popular Cuisines based on Rating and Order Volume (bar charts, pie charts).
- Restaurant Performance by Location (geographical maps, bar charts). - Number of Ratings vs. Average Rating (scatter plots, line charts).
- Menu Variety vs. Performance (bar charts, scatter plots).

4. Data Preparation:

Data Cleaning: Remove duplicates, handle missing values, standardize data formats.
Data Transformation: Normalize data, create new calculated fields.
Data Integration: Merge tables based on keys.

5. Steps of the Plan:

- Data Collection: Extract data from `restaurant`, `order`, `menu`.
- Data Cleaning: Use Python or SQL for data cleaning.
- Data Analysis: Perform statistical analysis to identify trends.
- Visualization: Use Tableau or Power BI for creating visualizations.

- Dashboard Assembly: Integrate all visualizations into a cohesive dashboard in Power BI.

6. Alignment with Research Area:

- Focus on restaurant performance analysis by analyzing relevant data and using appropriate analytical methods.

7. Dashboard and Report Presentation:

- Dashboard: Present key metrics and use interactive elements for data filtering.
- Report: Summarize key findings, trends, and actionable insights. Highlight deviations from hypotheses.