

Project: Exploratory Data Analysis (EDA) on Food Service Data

The objective of this Project is to analyze a food service dataset to gain insights into operational efficiency and food waste management. The dataset consists of variables such as the number of meals served, kitchen staff, environmental conditions (temperature and humidity), and food waste. Our goal is to explore this data, clean it, visualize key patterns, and derive actionable insights to optimize operations.

Data Analysis Key Findings:

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- Missing Values: 337 missing values were found in the 'staff_experience' column, and 32 missing values were found in the 'meals_served' column. These were imputed using the mode and mean.
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Question: Does temperature or humidity have a significant influence on food waste?

- Answer: Temperature or humidity have no significant impact on food waste.
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Question: Is there a correlation between the number of meals served and the amount of food waste?

- Answer: No, there is no significant correlation across variables. Food waste is not dependent on any environmental factor.
 - Number of staff also are not improving or declining the amount of meals served.
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Stang Optimization: If there is a significant relationship between staff numbers and food waste, suggest optimal stang levels to minimize waste.

- Answer: When you group staff level, you will find some relations between low medium and high level staff.
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Environmental Factors: If temperature or humidity affects food waste, recommend strategies to adjust food preparation based on weather conditions.

Answer: Adjust preparation and storage based on temperature and humidity to minimize food waste. In warmer, more humid conditions, prioritize shorter cooking times for perishable items, immediate refrigeration, and proper sealing of leftovers. During cooler, drier conditions, explore longer shelf life options and ensure adequate moisture for certain foods.

Event Management: If special events lead to higher food waste, suggest strategies to better manage food during these times (e.g., pre-planning portion sizes or reducing food waste through donation).

Answer:

- It's a great point that special events can sometimes lead to more food waste than usual. Here are some strategies to better manage food during these times, focusing on pre-planning and waste reduction:
 1. Pre-Event Planning & Preparation.
 2. Menu Optimization.
 3. Strategic Portion Sizing.