GraceyBee's Restaurant -- Food Waste Analysis Report

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Tool Used: Microsoft Power BI

Objective: To analyze patterns of food waste and recommend strategies to reduce it through data-driven insights.

Executive Summary

GraceyBee's Restaurant aims to address the persistent issue of food waste, which affects profitability, sustainability, and operational efficiency. This report summarizes key patterns identified through visual analysis and offers evidence-based recommendations focused on optimizing portion sizes, menu design, inventory management, and event planning.

Data Analysis Overview

- The dataset comprises food waste metrics across multiple dimensions, including: Type of Food: Meat, Vegetables, Fruits, Dairy Products, Baked Goods
- Portion Size, Pricing, Preparation Method
- Guest Count, Event Type, Geographical Location
- Storage Conditions, Seasonality, Purchase Frequency

Key Insights by Dimension

1. Food Type and Waste Patterns

- Top Waste Contributors: Meat (0.16M units), Baked Goods (0.15M), Dairy Products (0.14M)
- Lowest Waste Contributor: Vegetables (0.08M)
- Waste Rate by Type: Fruits (7.08%) and Baked Goods (6.96%) are the least efficient.

Insight: Although vegetables have the lowest volume waste, fruits and baked goods are inefficient in terms of waste rate.

2. Portion Size and Guest Count

- Larger portion sizes are associated with higher waste volumes.
- Guest count averages are consistent across food types (~311–324 guests).

Insight: Reducing portion size for high-waste items can reduce waste without compromising guest satisfaction.

3. Preparation Method

- Sit-down Dinners produced the highest waste (24K), followed by Finger Food (15K) and Buffets (8K).
- Sit-down dinners also had the highest waste rate.

Insight: Sit-down service leads to overproduction and should be optimized.

4. Pricing and Waste

- High-priced menu items generated 24K waste compared to 13K (moderate) and 9K (low).

Insight: Expensive dishes may not align with consumption and should be reassessed.

5. Event Type & Geographical Distribution

- Corporate Events (13.2K), Weddings (11.9K), Social Gatherings (11.8K) had highest waste.
- Suburban and Urban locations produced more waste than rural.

Insight: Large events need better forecasting and portion planning.

6. Storage Conditions

- 63.7% of waste came from Room Temperature items; Refrigerated items 36.3%.

Insight: Better refrigeration can significantly reduce spoilage.

7. Seasonality

- Seasonal peaks: Fruits in summer, Baked goods in winter.

Insight: Menu adaptation can help manage seasonal spoilage.

8. Purchase Frequency

- Regularly purchased items (e.g., Baked Goods, Fruits) also show high waste.

Insight: Frequent items still need tight inventory controls.

Recommendations

The following strategies are proposed to reduce food waste:

A. Portion Control

- Reduce portion sizes for high-waste items. Offer half-plate or small plate options. Allow side dish customization.

B. Menu Optimization

- Reformat or downsize high-priced, high-waste dishes. Label low-waste options. Review dish performance regularly.

C. Event & Guest Forecasting

- Use planning tools for accurate guest estimates. Confirm attendee numbers close to event dates.

D. Inventory & Storage Management

- Invest in better refrigeration. Apply FIFO inventory methods. Monitor room-temp storage duration.

E. Leftover Utilization

- Use leftovers in daily specials, soups, or sauces. Set SOPs for safe reuse of food.

F. Monitoring & Staff Engagement

- Monitor trends monthly. Educate staff and reward efficiency. Use waste logs and checklists.

Conclusion

GraceyBee's Restaurant can reduce waste through portion control, smarter menu design, and improved planning. These actions will enhance sustainability, reduce costs, and improve operational efficiency.