

# BlinkIT Grocery Sales Analysis - Project Report

## Project Overview

This capstone project analyzes BlinkIT's grocery sales data to uncover business insights using Power BI, SQL, Python, and Excel. The goal is to help the company optimize sales, understand outlet performance, and refine product offerings.

## Objectives

- Understand total sales performance
- Identify top-selling and low-selling product categories
- Evaluate outlet performance based on size and location
- Analyze customer preferences (e.g., fat content, product type)
- Provide actionable recommendations

## Tools Used

- Excel: Data cleaning and initial preprocessing
- Python: Data analysis, grouping, and aggregation
- SQL: Extracting and filtering relevant data
- Power BI: Interactive dashboard visualization

## Data Overview

From the file `BlinkIT Grocery Data`, the dataset includes:

- Sales figures across different item types
- Outlet sizes and locations (Tier 1, 2, 3)
- Fat content of items (Low Fat vs Regular)
- Outlet establishment years
- Ratings and number of items sold

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## Data Cleaning & Transformation

Steps taken:

- Removed duplicates
- Handled missing values in sales and ratings
- Converted numerical fields to appropriate data types
- Mapped categorical variables (e.g., item types, fat content)
- Aggregated sales by outlet, item type, and fat content

## Exploratory Data Analysis

- Total Sales: \$1.20M
- Number of Items: 8,523
- Average Sales per item: \$141
- Average Rating: 4.0

Top 5 Categories by Sales:

1. Fruits and Vegetables \$178.1K
2. Snack Foods \$175.4K
3. Household \$136.0K
4. Frozen Foods \$118.6K
5. Dairy \$101.3K

Fat Content Distribution:

- Regular: \$776.3K (65%)
- Low Fat: \$425.4K (35%)

Outlet Performance by Size:

- High: \$507.9K (42%)
- Medium: \$444.8K (37%)
- Small: \$249.0K (21%)

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## Power BI Dashboard Summary

The Power BI dashboard includes:

- Total Sales, Avg Sales, Avg Rating, No of Items
- Sales by Outlet Type (Supermarket, Grocery)
- Sales by Item Type
- Fat Content Analysis
- Sales by Outlet Size & Location
- Outlet Establishment Trend (2011-2022)

Tier-wise sales:

- Tier 3: \$472.1K
- Tier 2: \$393.2K
- Tier 1: \$336.4K

Outlet Type Sales:

- Supermarket Type1 is the top performer: \$787.5K

## Key Insights

- Regular items contribute more to sales than Low Fat
- High-sized outlets generate more revenue than small or medium
- Tier 3 locations outperform Tier 1 & 2 in sales
- Fruits and Vegetables are the most profitable category
- Supermarket Type 1 dominates total sales

## Conclusion & Recommendations

- Increase focus on high-performing outlet types and locations
- Boost inventory in high-sale categories like Fruits & Vegetables and Snack Foods
- Promote Regular fat content items more aggressively
- Expand successful outlet formats to Tier 1 and 2 regions

## **BlinkIT Grocery Sales Analysis - Project Report**

- Continue leveraging Power BI dashboards for real-time insights