



PROJECT Lio.

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OVERVIEW

This project explores sales performance across multiple outlets in a retail chain using the BigMart dataset. With over 8,500 rows of data across 12 variables, the dataset includes information on product types, outlet characteristics, pricing, and total sales. The goal was to build a business-focused dashboard in Power BI that could surface actionable insights for key stakeholders, including category managers and retail decision-makers.

By combining calculated fields (like estimated profit and outlet age) with visual storytelling tools such as bar charts, column charts, scatter plots, and matrix tables, the project highlights patterns in product demand, outlet success, and revenue distribution across the chain. The dashboard was designed with a clean layout and a professional visual theme to simulate a real-world business environment.

PROJECT OBJECTIVE

- To design an interactive and professional-grade Power BI dashboard.
- Understand outlet-wise sales variations.
- Help retail stakeholders identify high-performing products.
- Make data-driven decision to improve overall business performance.

TOOLS USED

1. Microsoft Excel – data cleaning, missing value handling, calculated fields
2. Power BI – dashboard design, data visualization, matrix table generation
3. Canva – for preparing the project report and polishing layout

STAKEHOLDERS

- Category Managers - Need insights on top-selling product categories
- Retail Operations Team - Want to compare outlet-wise performance
- Marketing managers - Interested in under-performing segments
- Leadership Team - Needs a summary view of revenue and profitability patterns

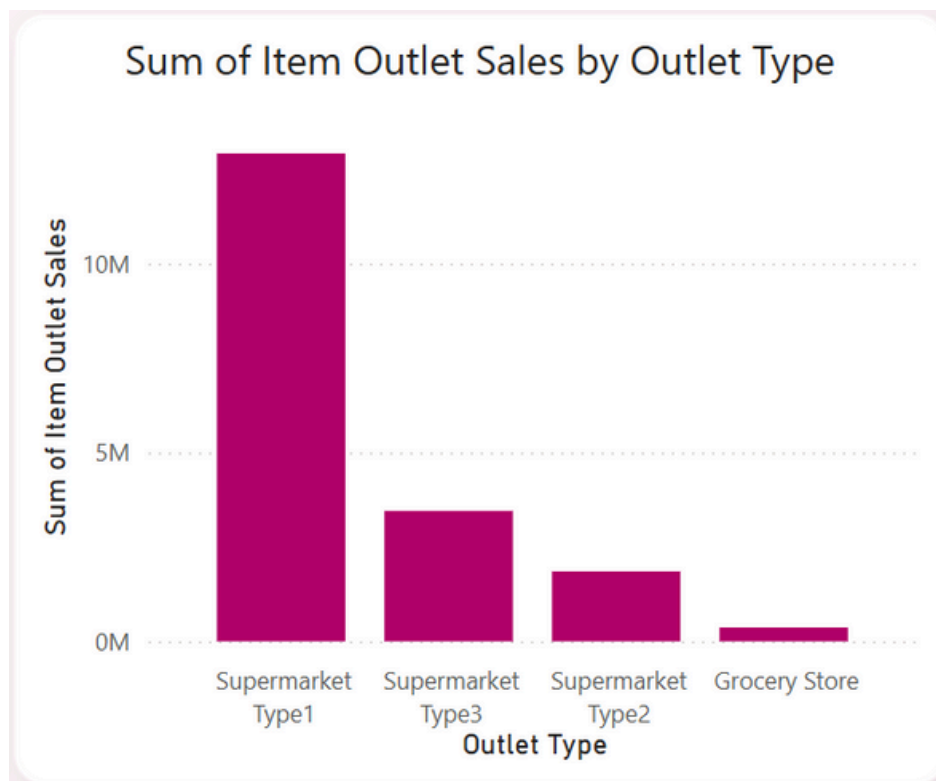
DATA PREPARATION

- Missing Values in 'Item Weight' were filled using category-wise average (e.g., Baking Goods = 12.28 kg)
- Added calculated fields:
 - a. Outlet Age = 2025 - Outlet Establishment Year
 - b. Profit = Item Outlet Sales * 0.15 (Assumed 15% margin)
- Cleaned inconsistent Item Fat Content labels
- Converted the dataset to Excel Table for structured referencing

KEY VISUALIZATIONS AND INSIGHTS - 1

Supermarket Type 1 generates the highest sales by far

- Tool: Power BI
- Type: Clustered Column Chart



Insight:

- Supermarket Type 1 generated 12.9 million sales in total, the highest sales by far.
- The Supermarket Type 3 was the 2nd highest with a total of 3.4 million sales and Supermarket Type 2 was the 3rd with a total of 1.8 million sales.
- The Grocery Store massively lagged behind generating only 0.3 million sales.

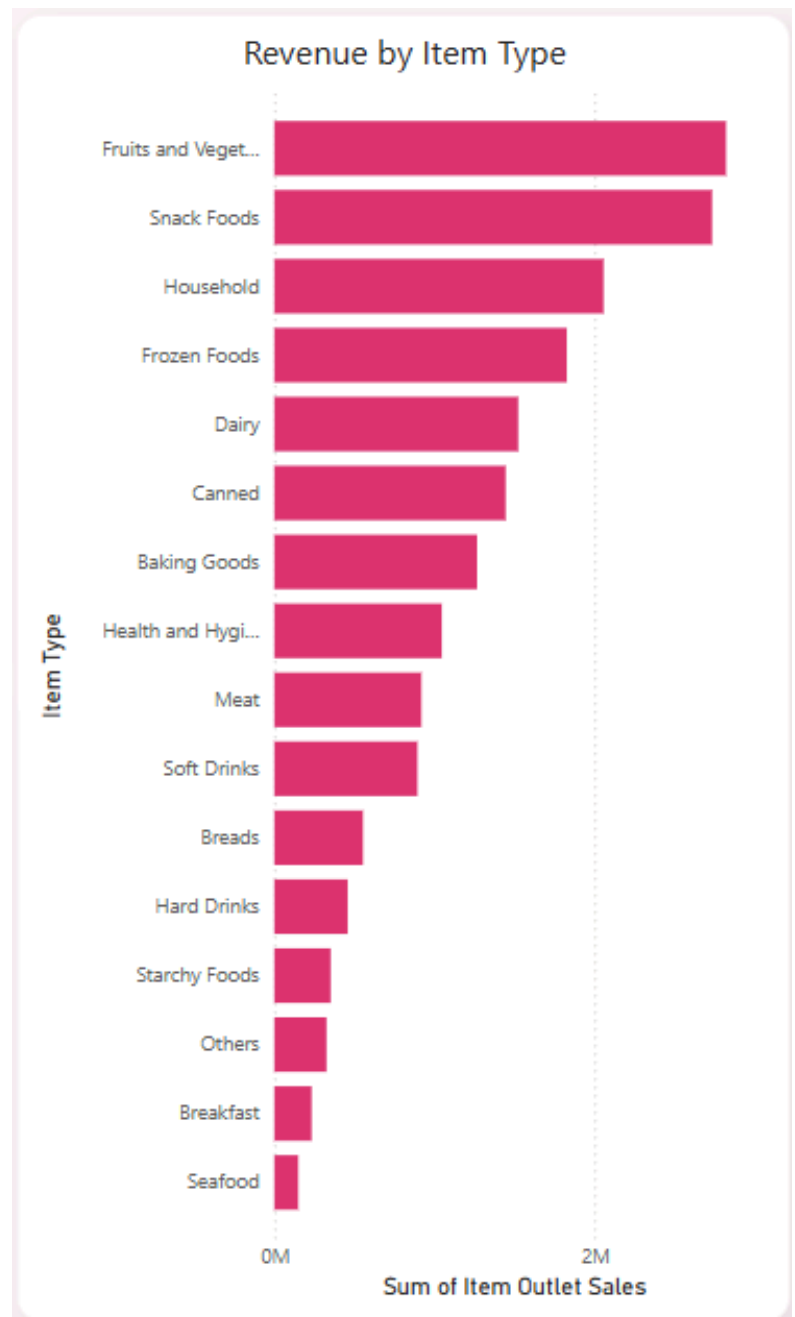
KEY VISUALIZATIONS AND INSIGHTS - 2

Fruits & Vegetables + Snack Foods dominate sales

- Tool: Power BI
- Type: Clustered Bar Chart

Insight:

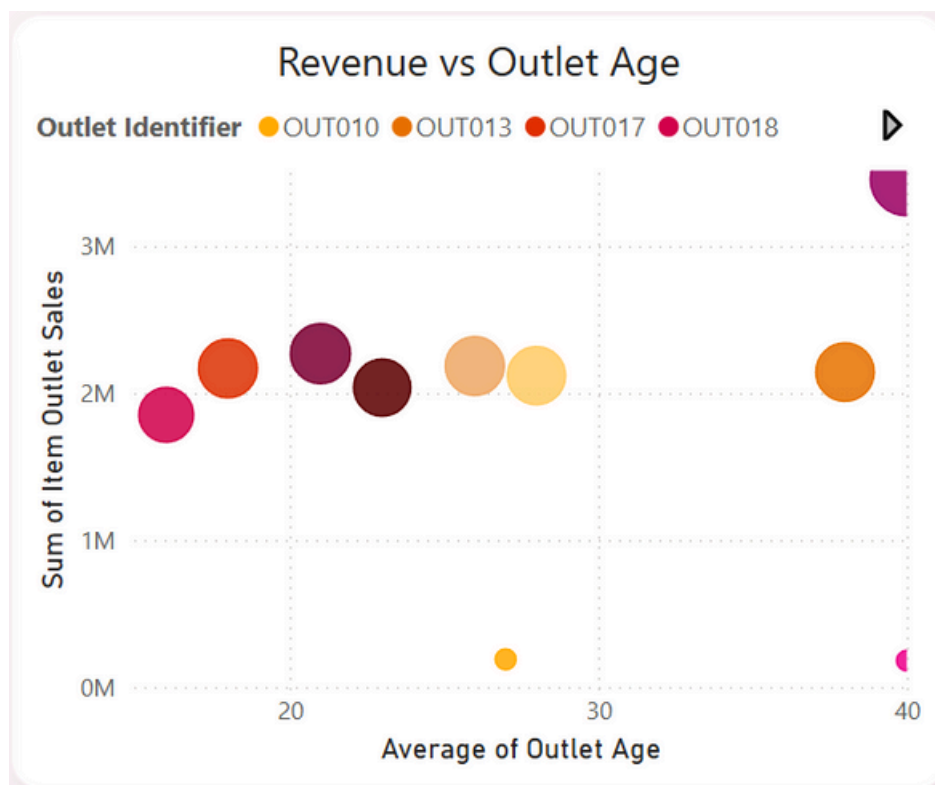
- Fruits & Vegetables had the highest Item Outlet Sales of 2.8 million followed by Snack Food having 2.7 million sales.
- Household, Frozen Foods, Dairy, Canned, Baking Goods and Health & Hygiene Items, all managed to get over a million Outlet Sales.
- Breakfast and Seafood generated the least revenue of 0.23 and 0.14 million respectively.



KEY VISUALIZATIONS AND INSIGHTS - 3

Revenue doesn't increase linearly with Outlet Age

- Tool: Power BI
- Type: Scatter Plot



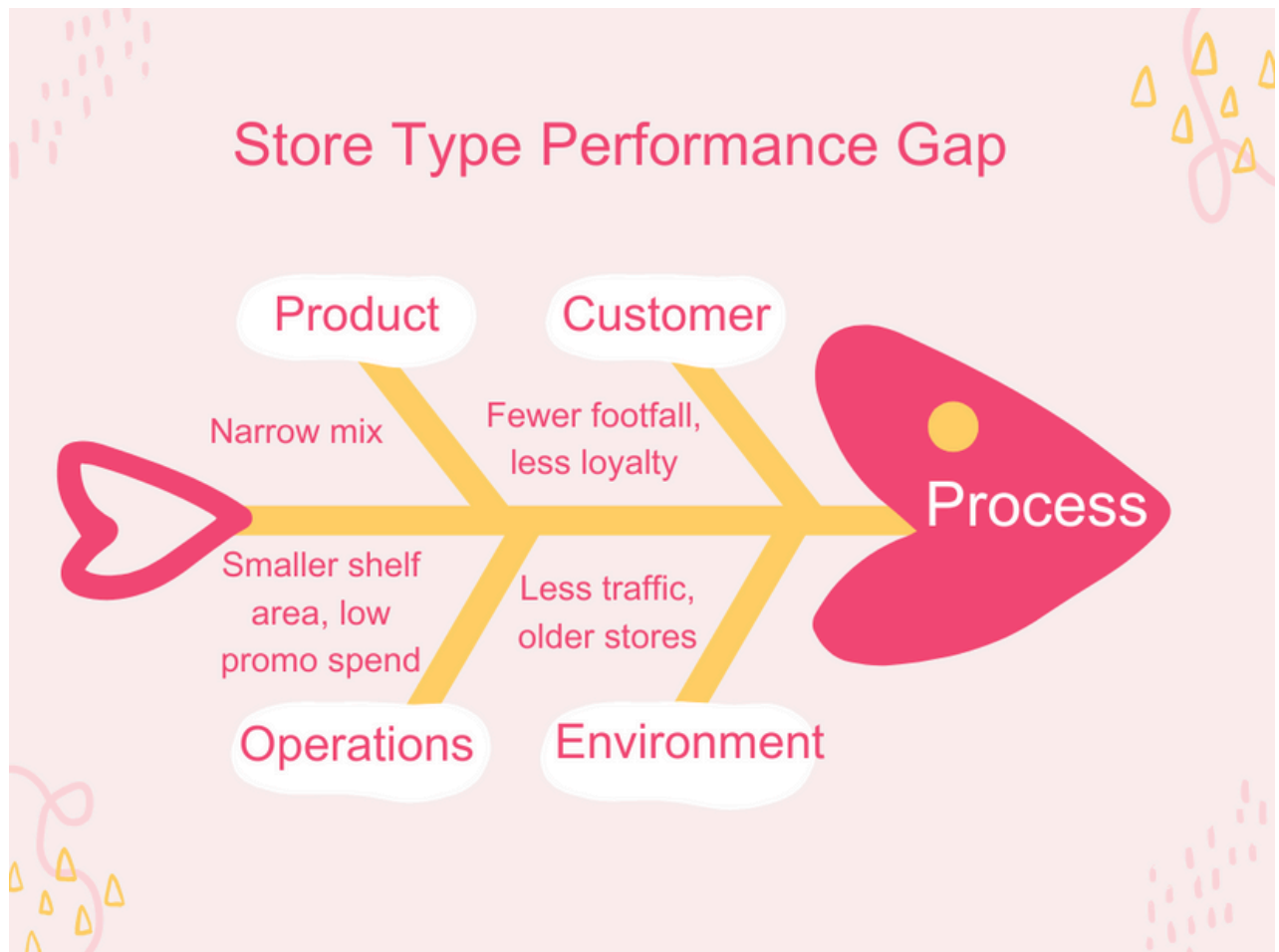
Insight:

- Outlet Age doesn't guarantee performance, as other factors like staffing, inventory and layout makes huge differences.
- The Outlets of Age 16-30 years generated nearly equal revenue of around 2 million.
- The Oldest Outlet of 40 years was able to generate the max revenue of 3.4 million.

ROOT CAUSE ANALYSIS

Insight 1: Supermarket Type 2 & 3 under-perform vs Type 1

- Tool: Canva



Actionable Fixes:

- Expand product variety and top-selling categories in Type 2 & 3 outlets to match Type 1 offerings.
- Introduce localized promotions and in-store visibility campaigns for under-performing formats.
- Upgrade store layout and customer experience in Type 2 & 3 outlets based on Type 1 benchmarks.

ROOT CAUSE ANALYSIS

Insight 2: Seafood & Breakfast have lowest sales

- Tool: Canva

“Breakfast and Seafood generated the least revenue of 0.23 and 0.14 million respectively”

5 WHYS ROOT CAUSE CHAIN

1. Why are sales low for these categories?
Because few people buy them regularly.
2. Why do few people buy them regularly?
Because they're niche or not top-of -mind.
3. Why are they not top-of-mind?
Because they lack visibility in stores.
4. Why do they lack visibility?
Because shelf space and promotions prioritize other items.
5. Why is that?
Because the business hasn't optimized category balance based on potential.

Root Cause: Lack of optimization in categories and low visibility in stores.

Solution:

- Bundle low-performing items with high-selling categories to boost visibility.
- Rotate in-store promotions toward neglected categories.
- Run micro-campaigns with discounts or sampling to test demand for under-performing product lines.

CONCLUSION

This analysis provided valuable insights in the performance of the BigMart retail chain. One of the clearest findings was the dominance of Supermarket Type 1 in terms of total sales. This outlet type significantly outperformed others, indicating that certain structural advantages—like location, size, footfall, or product variety—are playing a critical role. In contrast, Grocery Stores and smaller supermarket formats are under-performing, pointing to strategic gaps that may relate to customer experience, inventory limitations, or lack of promotions.

At the product level, Fruits & Vegetables and Snack Foods emerged as the primary revenue generators, confirming that high-demand, frequently purchased items are the engine of daily sales. Meanwhile, categories like Seafood, Breakfast, and Hard Drinks contribute very little, revealing potential areas of untapped opportunity or ineffective positioning.

Another important observation came from the scatter plot of revenue vs outlet age. Surprisingly, there was no clear upward or downward trend. This implies that outlet performance is not directly tied to how old or experienced a store is. Instead, more dynamic factors—such as regional demand, management efficiency, and product mix—are likely influencing results.

CLOSING STATEMENT

The project delivers a concise yet powerful visual story of sales dynamics across the BigMart retail chain, enabling smarter, data-backed decisions for stakeholders.

SELF-REFLECTION

This project truly felt like a milestone in my journey as an aspiring Business Analyst. I worked with a large, real-world dataset of over 8,500 rows, and I wasn't just cleaning or sorting data — I was trying to think like someone who makes sense of it in a business context. I had to ask myself: "What would a stakeholder want to see? What decisions could this data actually influence?"

Early on, I dealt with missing values and built calculated fields like estimated profit and outlet age. But instead of just googling formulas and copying them, I made a point to understand why each calculation mattered and how it would impact the rest of my dashboard. That process helped me build trust in my own logic.

While working on Power BI, I experimented with color themes and layout structures until I found a soft light theme with enough contrast to keep the visuals clear and engaging. I incorporated scatter plots, bar charts, column visuals, and matrix tables, and learned how to balance insight depth with simplicity.

Reaching this point — my 10th complete project — feels like crossing a line. I'm no longer just experimenting or exploring. I'm starting to build work that feels real, relevant, and impactful. Each project has taught me something new, but this one helped me bring it all together — analysis, design, interpretation, and decision-making.