STRATEGIC PRODUCT PLACEMENT ANALYSIS

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INTRODUCTION

Project objective

The objective of this project is to analyze how different product placement strategies (such as aisle, end-cap, and front display positions) influence sales performance and customer purchasing behavior. Using Tableau visualization, the project aims to identify high-performing placements, compare sales impact across regions, and provide data-driven insights to improve retail decision-making and revenue growth.

Purpose

The purpose of this project is to transform raw sales data into meaningful visual insights that help retailers understand the effectiveness of product positioning strategies. By leveraging Tableau dashboards, the project seeks to support strategic decisions regarding shelf space allocation, promotional planning, and product visibility, ultimately optimizing product placement and maximizing sales performance.

Ideation phase

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	A busy, goaloriented shopper who values time and easy navigation.	Find and purchase my daily essentials quickly and at a fair price.	I often spend too much time searching for items or settle for expensive ones at eye level.	Current product positioning doesn't always align with my logical shopping path.	Frustrated and overwhelmed by the effort required for a simple task.

PS-2	A cautious consumer who compares brands and looks for the best deals.	Distinguish between high-quality products and marketingdriven placements	it is difficult to find alternative brands that are often "hidden" on bottom shelves.	Shelf space is dominated by premium brands, obscuring more affordable options.	Mistrustful and annoyed that I have to work harder to find value. |

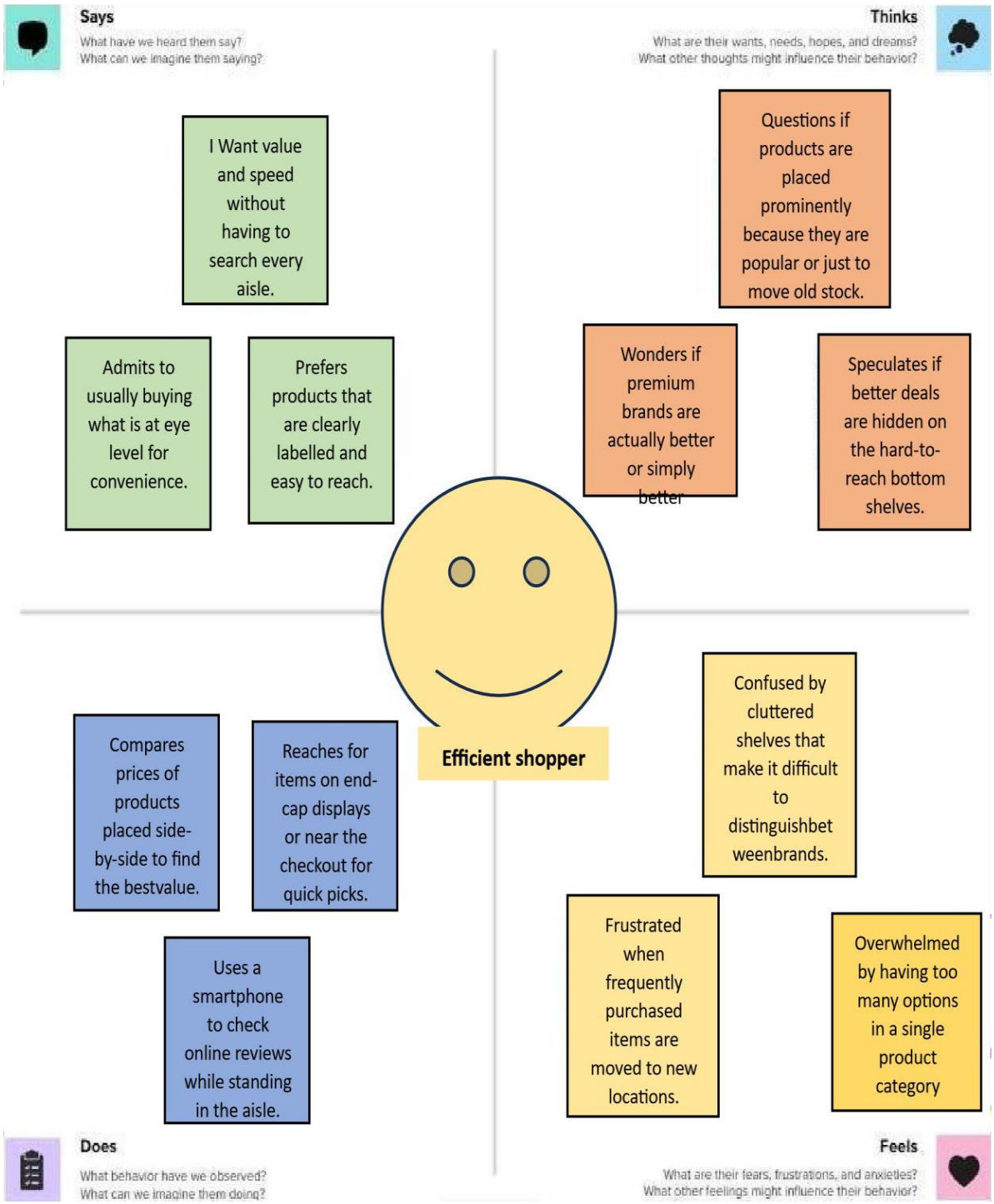
ProblemA busy goal oriented shopper

iam	im trying to	But	because	whichmakesme feel
Shoppergoal oriented	Buy essentials at fair price	spend too much time in searching	Improper alignment of produvts	Frustratedand overwellmed

ProblemA busy cautious shopper

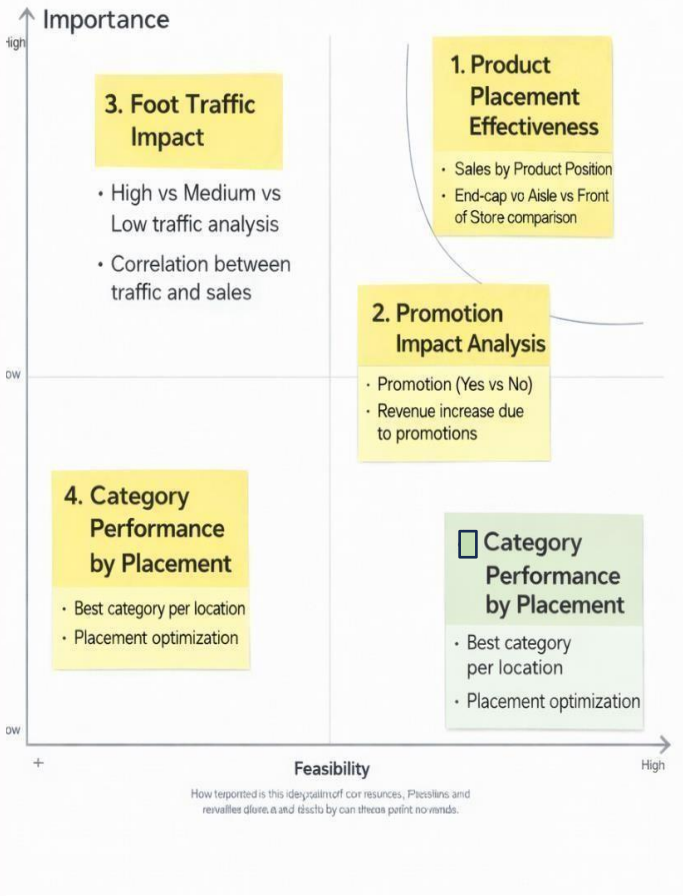
iam	im trying to	But	because	whichmakesme feel
Cautious customer	Distinguish between high-quality products	difficult to find alternative brands that are often "hidden" on bottom shelves.	Shelf space is dominated by premium brands, obscuring more	Mistrustful and annoyed that I have to work harder to find value. |

EMPATHY MAP


Says
What have we heard them say?
What can we imagine them saying?
I Want value and speed without having to search every aisle.
Admits to usually buying what is at eye level for convenience.
Prefers products that are clearly labelled and easy to reach.
Thinks
What are their wants, needs, hopes, and dreams?
What other thoughts might influence their behavior?
Questions if products are placed prominently because they are popular or just to move old stock.
Wonders if premium brands are actually better or simply better
Speculates if better deals are hidden on the hard-to-reach bottom shelves.
Efficient shopper
Compares prices of products placed side-by-side to find the bestvalue.
Reaches for items on end-cap displays or near the checkout for quick picks.
Uses a smartphone to check online reviews while standing in the aisle.
Confused by cluttered shelves that make it difficult to distinguishbet weenbrands.
Frustrated when frequently purchased items are moved to new locations.
Overwhelmed by having too many options in a single product category
Does
What behavior have we observed?
What can we imagine them doing?
Feels
What are their fears, frustrations, and anxieties?
What other feelings might influence their behavior?

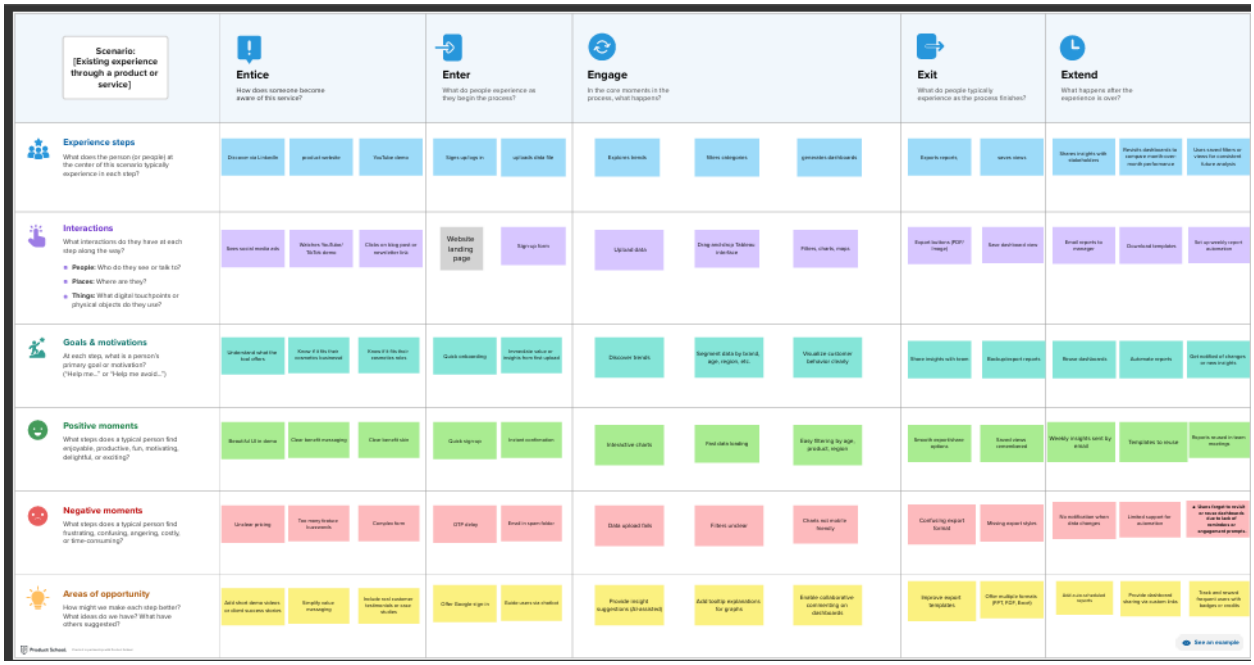
BRAIN STORMING

idea prioritization



Requirement analysis

Customer journey map



Solution requirement

FUNCTIONAL REQUIREMENTS

Following are the proposed solution

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Data Ingestion	Upload data files (CSV, Excel) Connect to live cosmetic sales databases Scheduled data sync
FR-4	Insights Dashboard	View trends by category (e.g., skincare, makeup) Filter by region, brand, gender, age group Time-based trend analysis
FR-5	Consumer Behavior Analysis	Product sentiment analysis Top-reviewed products Customer segmentation via demographics
FR-6	Export & Share	Export dashboards as PDF/Image Share dashboard link with filters applied

Non-functional Requirements:

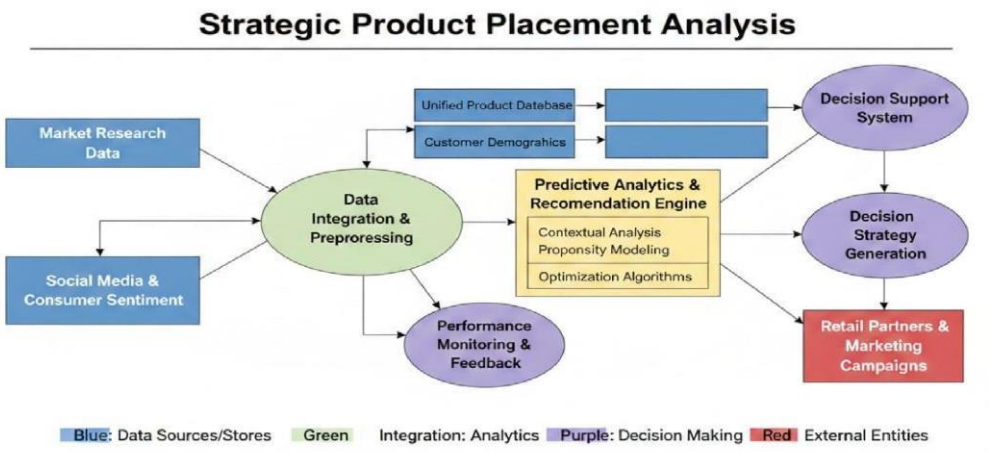
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Intuitive drag-and-drop interface in Tableau, accessible to business users
NFR-2	**Security**	User authentication, role-based access to dashboards and data
NFR-3	**Reliability**	Dashboards must be updated and accessible without interruption during working hours
NFR-4	**Performance**	Dashboards should load under 3 seconds for up to 1 million records
NFR-5	**Availability**	99.9% uptime of Tableau dashboards and data connectors
NFR-6	**Scalability**	Should support growing datasets and users without significant performance degradation

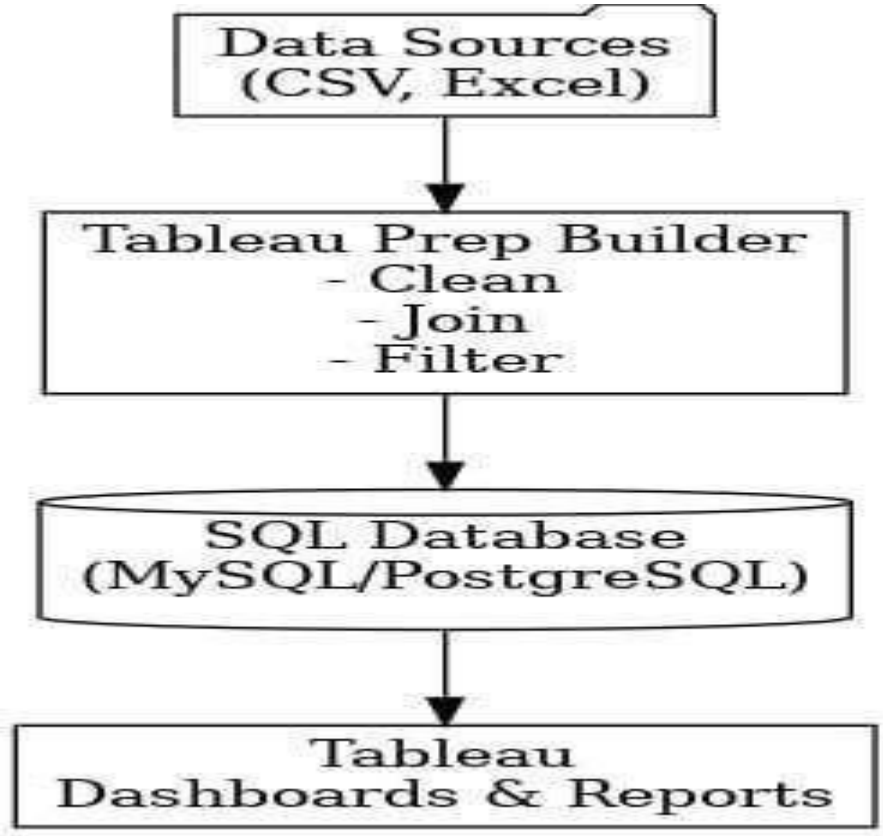
DATA FLOW DIAGRAM

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



TECHNOLOG STACK



Project designphase

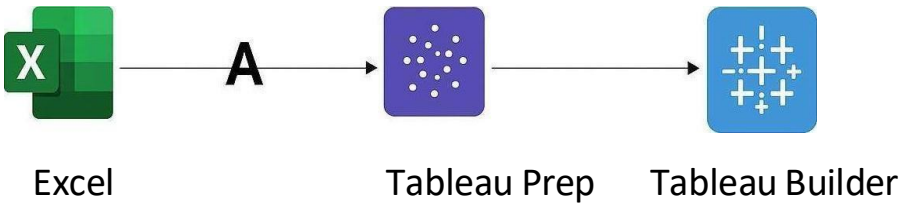
Problem solution fit

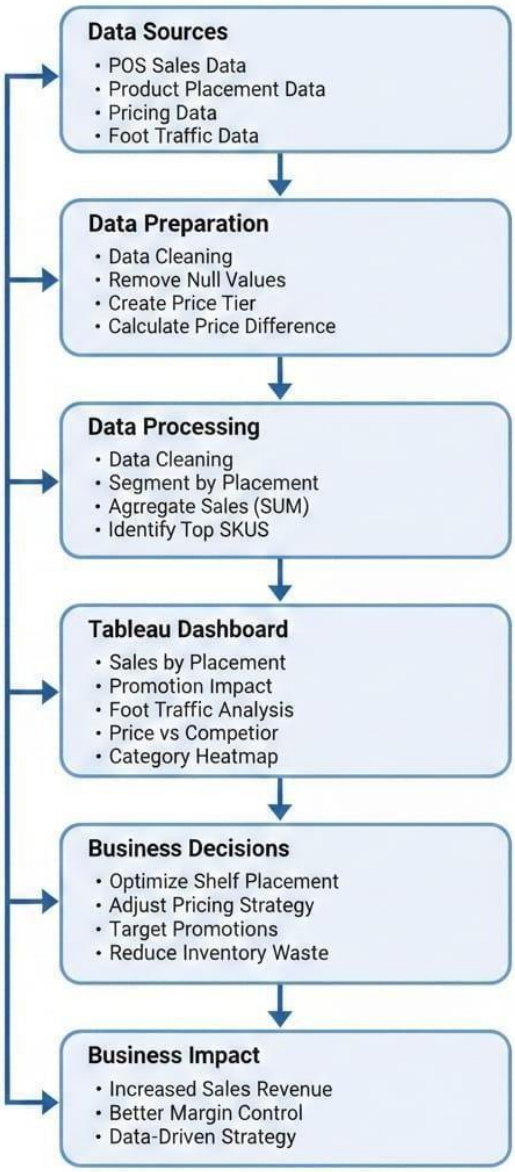
Proposed solution

S.No.	Parameter	Description
1.	Purpose / Vision	Optimize product placement and pricing strategy using data-driven insights to increase sales and reduce inventory waste.
2.	Customer Segment	Category managers and pricing analysts in budget
3	Customer Constraints	Limited margins, regional sales variation, ofline-heavy data, lack of segmented analytics.
4.	Available Solutions (Current State)	Excel reports, distributor feedback, manual sales summaries.
5	obs-To-Be-Done / Problem	Identify fast-moving SKUs and determine the most effective shelf placement and pricing strategy.
6	Problem Root Cause	Sales data not segmented by placement, region, or price tier. Manual analysis causes missed revenue opportunities.

7	Current Behaviou	Competitor launching low-cost cosmetic lines in high-visibility placements.
8	Emotions (Before / After)	Before: Confused about stock prioritization and pricing decisions. After: Confident with databacked placement strategy.
9	Your Solution	nteractive Tableau Dashboard analyzing Sales Volume by Placement, Foot Traffic, Promotion, Category, and Price Difference.

Solution architecture





Project planning & scheduling

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Chinna babu Preethiashritha
Sprint-1	Registration	USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Lohith veer ramprasad
Sprint-2	Registration	USN-3	As a user, I can register for the application through Facebook	2	Low	preethiAshritha ramprasad
Sprint-1	login	USN-4	As a user, I can register for the application through Gmail	2	Medium	Chinna babu
Sprint-1	Dashboard	USN-5	As a user, I can log into the application by entering email & password	1	High	Preethi ashritha

Project tracker and velocity

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	8	6 Days	6feb2026	11feb2026	11feb2026	17feb2026
Sprint-2	8	6 Days	12feb2026	17feb 2026	17feb2026	17feb2026

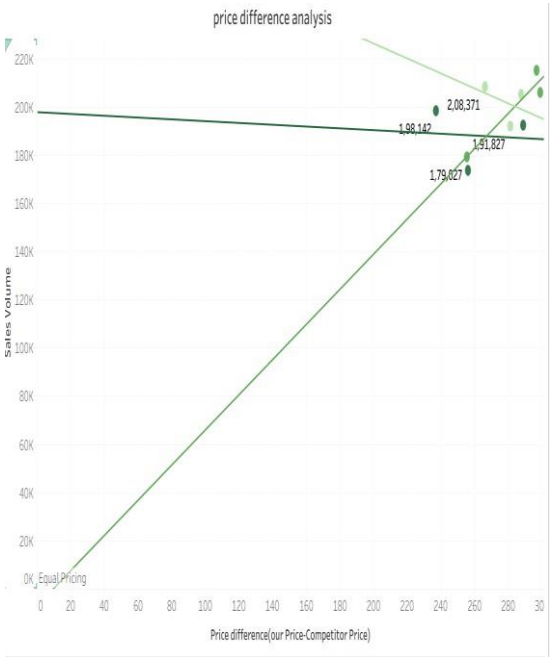
PERFORMANCE TESTING

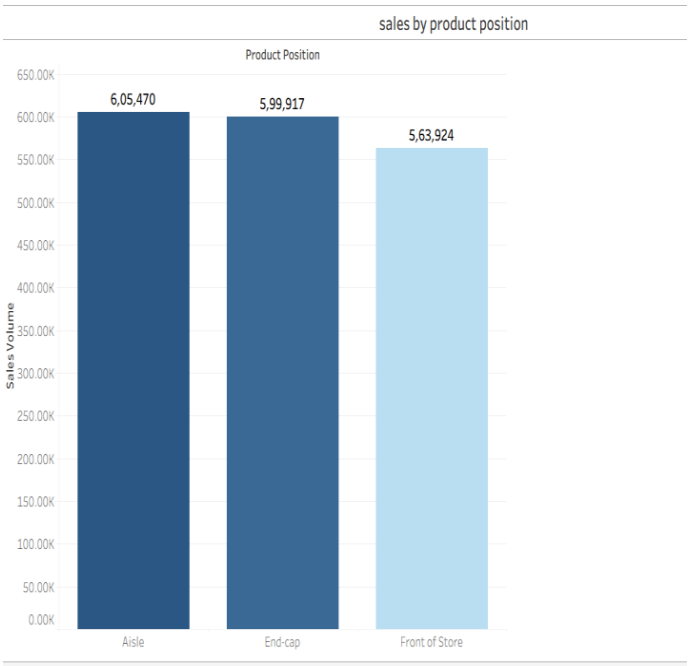
S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Dataset used contains various products position, sales volume, product category promotion impact seasonal values and competitors price,foot traffic
2.	Data Preprocessing	Filtered null values any ,change some data types to decimals and string, filtered nullify values in promotions
3.	Utilization of Filters	Sales volume filter ,product position filters, product category filer,
4.	Calculation fields Used	Price difference=(price-competitor's price)
5.	Dashboard design	No of Visualizations / Graphs – 5(sales by product position Price difference, promotional impact, category vs product position sales by food traffic)
6	Story Design	No of Visualizations -5 graphs is used to represent each of their point anfd information

RESULTS

OUTPUT SCRREN SHORTs

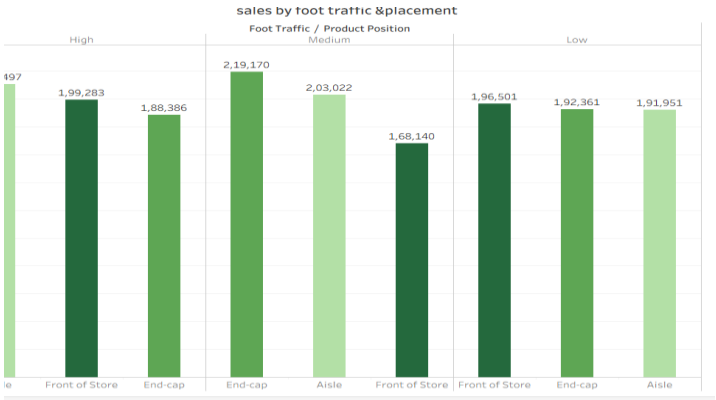
DASHBOAARD





categoryvsposition

Produc..	Product Position: Front of Store	Aisle	End-cap
Clothing	1,98,142	2,05,272	2,15,166
Electronics	1,73,422	2,08,371	2,05,724
Food	1,92,360	1,91,827	1,79,027



Advantages

Data-Driven Decision Making

Helps retailers make decisions based on actual sales data instead of guesswork.

Increased Sales & Revenue

Identifies high-performing placements (Aisle, End-cap, Front display) that boost visibility and impulse buying.

Better Shelf Space Utilization

Optimizes limited store space by allocating high-demand products to premium positions.

Improved Customer Insights

Reveals how consumer behavior changes based on product visibility and positioning.

Competitive Advantage

Helps businesses outperform competitors through strategic layout planning.

Enhanced Promotional Effectiveness

Measures ROI of promotions placed in different store positions.

Clear Visualization (Using Tableau)

Dashboards simplify complex sales data into easy-to-understand visuals.

Disadvantages

Data Dependency

Requires accurate and well-structured sales data. Poor data leads to wrong conclusions.

Implementation Cost

May require analytics tools (e.g., Tableau), training, and system integration.

Time-Consuming Analysis

Data cleaning, preprocessing, and dashboard building take time.

External Factors Influence Sales

Seasonality, pricing, competitor promotions, and economic factors may affect results beyond placement.

Over-Reliance on Visualization

Managers may focus only on visual trends without deeper statistical validation.

Limited Control in Some Retail Environments

In some stores, placement decisions may depend on supplier agreements.

Conclusion

Strategic product placement analysis provides powerful insights to increase sales and optimize retail strategies, but its effectiveness depends on high-quality data, proper analysis, and correct implementation.

Future Scope

- Integrate real-time POS data for live dashboard updates.
- Apply predictive analytics to forecast sales based on placement.
- Use AI/ML models to recommend optimal product positioning automatically.
- Expand analysis to include customer demographics and seasonal trends.
- Implement A/B testing in stores to validate placement strategies.

APPENDIX
DATA SET LINK
https://drive.google.com/file/d/1vHDNGw130kbYUPj-wl4640x-cz5349GM/view
DEMO VIDEO LINk
https://drive.google.com/file/d/1Z_z5-bWDlxMdEt5mA52lb5vlmi_caHSi/view?usp=sharing