

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 marketing driven 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. |
|------|-----------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------|

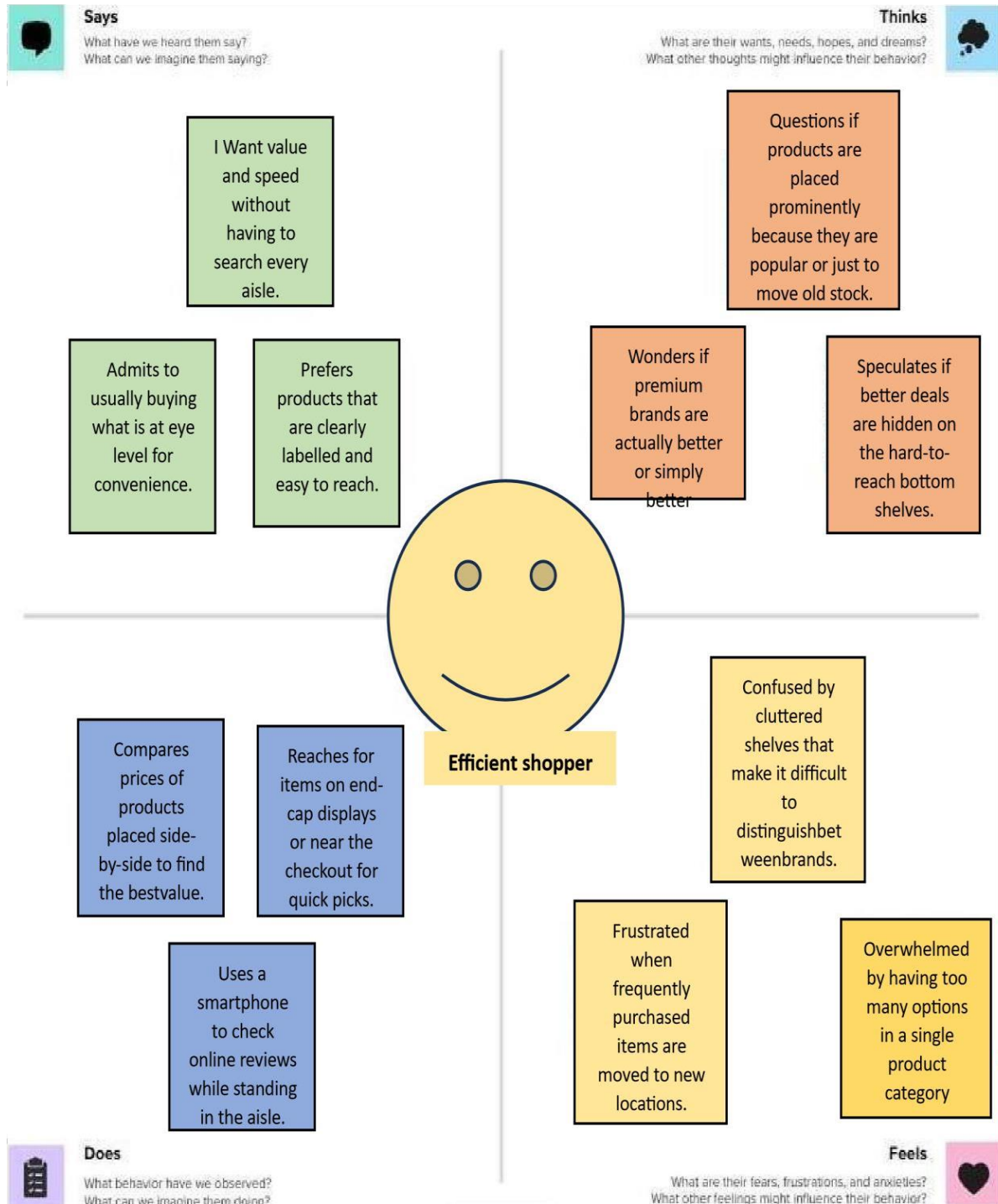
Problem A busy goal oriented shopper

| iam | im trying to | But | because | which makes me feel |
|-----------------------|------------------------------|----------------------------------|--------------------------------|----------------------------|
| Shopper goal oriented | Buy essentials at fair price | spend too much time in searching | Improper alignment of products | Frustrated and overwhelmed |

Problem A busy cautious shopper

| iam | im trying to | But | because | which makes me 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



BRAIN STORMING

idea prioritization

Step-2: Brainstorm, Idea Listing and Grouping

1 Brainstorm

Person 1

- Analyze sales performance by product position (Aisle, End-cap, Front of Store)
- Compare total sales using SUM (Sales Volume) in Tableau

Person 2

- Examine impact of foot traffic on sales
- Identify whether high traffic always leads to high revenue

Person 3

- Evaluate promotion impact (Promotion: Yes vs No)
- Measure increase in sales due to promotional campaigns

Person 4

- Analyze category performance by placement
- Compare pricing difference with competitor pricing

2 Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a thematic label. If a cluster is bigger than six sticky notes, try and see if you break it up into smaller sub-groups.

20 minutes

TIP
Use thematic labels that are straightforward and clear. Aim for 4-6 groups that represent the key factors affecting the business problem.

1. Product Placement Effectiveness

- Compare Aisle vs End-cap vs Front of Store
- Identify highest sales-generating position
- Measure visibility impact on revenue

2. Foot Traffic & Consumer Behavior

- Analyze Low, Medium, High traffic areas
- Study relationship between traffic and sales
- Understand customer movement patterns

3. Promotion Strategy Impact

- Compare Promotion (Yes vs No)
- Measure promotional sales increase
- Evaluate discount effectiveness

3. Foot Traffic Impact

- Analyze Low, Medium, High traffic areas
- Study relationship between traffic and sales
- Understand customer movement patterns

4. Pricing & Competitive Analysis

- Calculate Price Difference
- Compare pricing vs competitor
- Analyze price impact on sales volume

5. Pricing & Competitive Analysis

- Calculate Price Difference
- Compare pricing vs competitor
- Analyze price impact on sales volume



Requirement analysis

Customer journey map

| Scenario: [Existing experience through a product or service] | Entice How does someone become aware of this service? | Enter What do people experience as they begin the process? | Engage In the core moments in the process, what happens? | Exit What do people typically experience as the process finishes? | Extend What happens after the experience is over? |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Experience steps What does the person (or people) at the center of this scenario typically experience in each step? | Discover via LinkedIn Personal website YouTube channel | Sign up page in Website side bar | Explore benefits Browse categories Generate documents | Export reports Share data | Share insights with other visitors Revisit dashboard to compare and contrast their performance Users connect their account to external data sources |
| Interactions What interactions do they have at each step along the way? • People: Who do they see or talk to? • Places: Where are they? • Things: What digital touchpoints or physical objects do they use? | Form-based mobile app Assistant 'helpful' to help them Click on thing post on social media | Website landing page Sign-up form | Upload data Drag-and-drop 'feature' structure Filter, chart, map | Export feature PDF report Save dashboard view | Email reports to manager Download completion Set up weekly report subscription |
| Goals & motivations At each step, what is a person's primary goal or motivation? ("Help me..." or "I want to avoid...") | Understand what the tool offers Form of the data collection tool | Know if it's the best solution for them Quick onboarding | Personalize value or insights from their report Discover insights | Segment data by brand, age, region, etc. Visualize customer behavior clearly | Share insights with team Develop report reports |
| Positive moments What steps does a typical person find enjoyable, productive, fun, interesting, delightful, or exciting? | Beautiful UI to share Clear benefit messaging | Clear benefits data Quick sign-up | Instant confirmation Interactive charts | Final data loading Easy sharing to high-value targets | Smooth experience system Excel data visualization Weekly insights sent by email Simple to use |
| Negative moments What steps does a typical person find frustrating, confusing, annoying, costly, or time-consuming? | Unclear pricing Too many features | Complex form PDF export | Slow or system failure Data upload fails | Filter not visible Charts not visible clearly | Confusing report format Missing report options No notification when data changes Lack of support for data issues |
| Areas of opportunity How might we make each step better? What ideas do we have? What have others suggested? | Get clear about value and about success stories Simplify value messaging | Reduce form complexity and make it more visible Offer targeted sign-up | Reduce data upload time Provide insight suggestions (AI-powered) | Auto-loading suggestions for graphs Enable collaboration and commenting on dashboards | Improve report templates Offer custom reports (PDF, CSV, Excel) Add a custom report Provide dashboard sharing on custom data Track and reward frequent users with badges or rewards |

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:

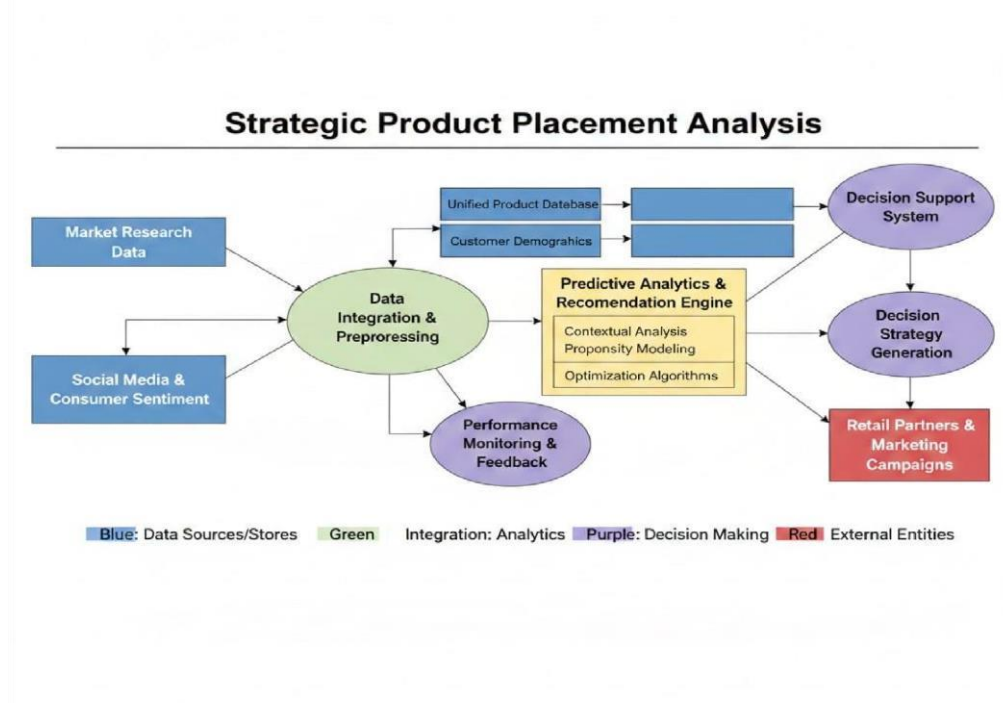
Following are the non-functional requirements of the proposed solution.

| 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 |

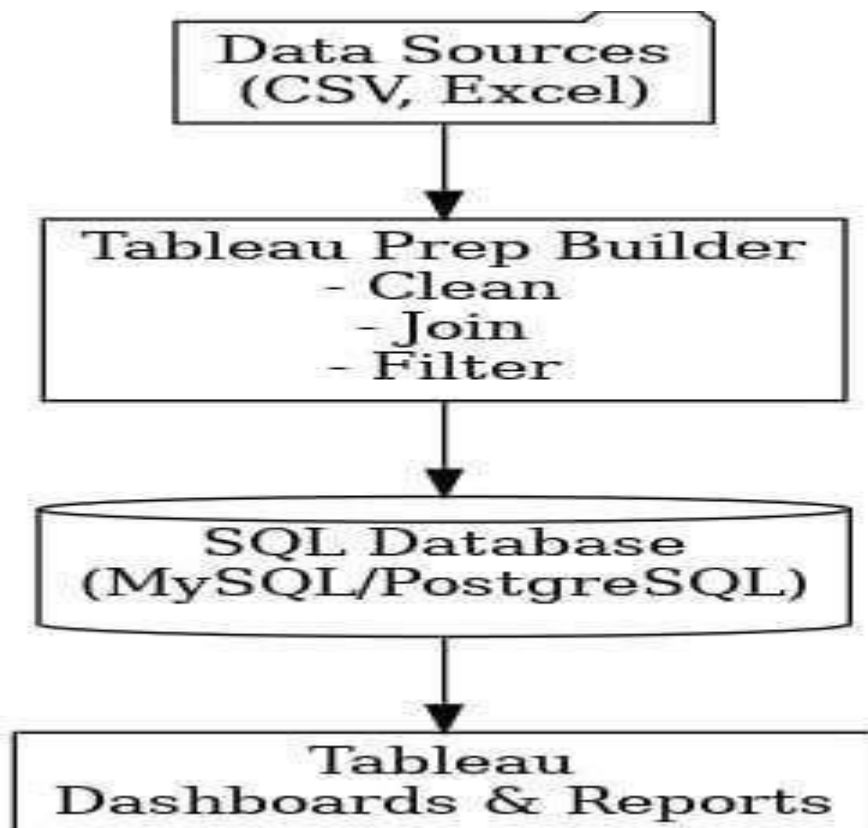
DATA FLOW DIAGRAM

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.



TECHNOLOGY STACK



Project designphase

Problem solution fit

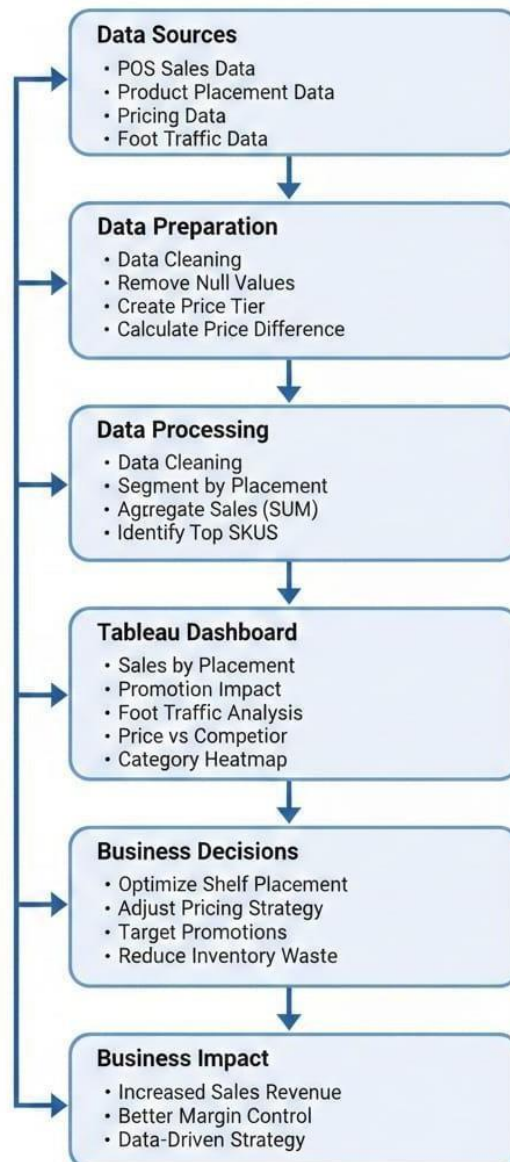
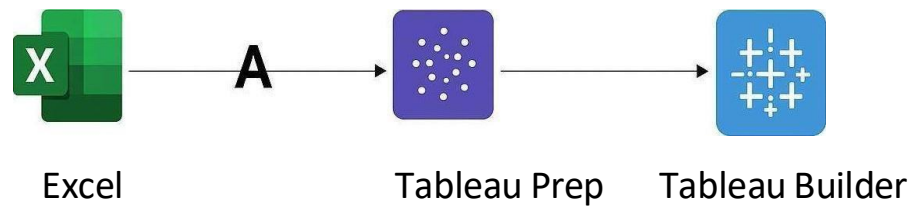


Proposed solution

| 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, offline-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 Behaviour | 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 | Interactive 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

[illegible]

PERFORMANCE TESTING

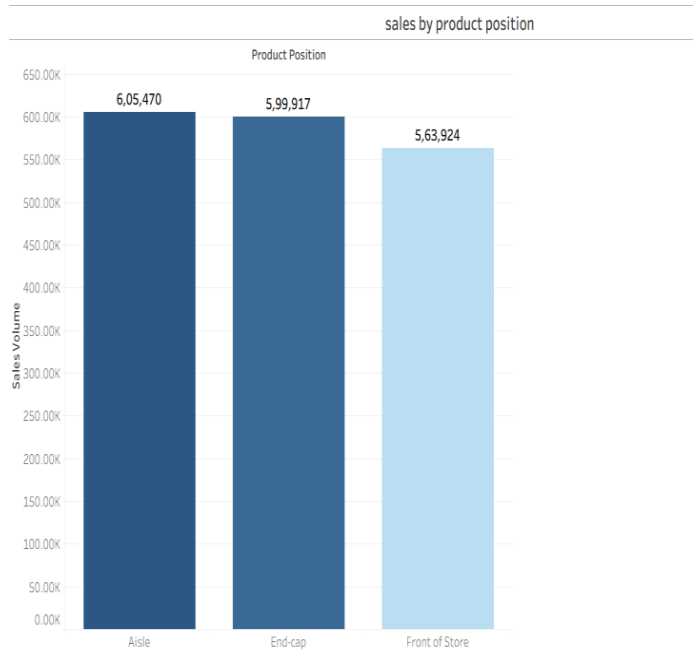
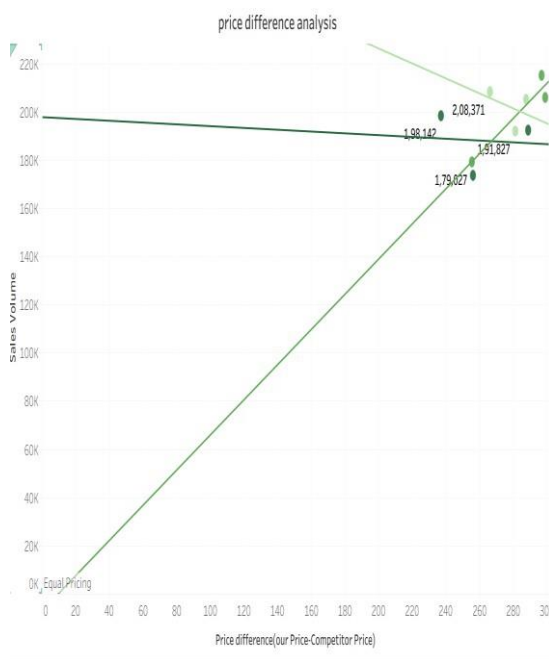
| S.No. | Parameter | Screenshot / Values |
|-------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Data Rendered | Dataset used contains various products position, 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

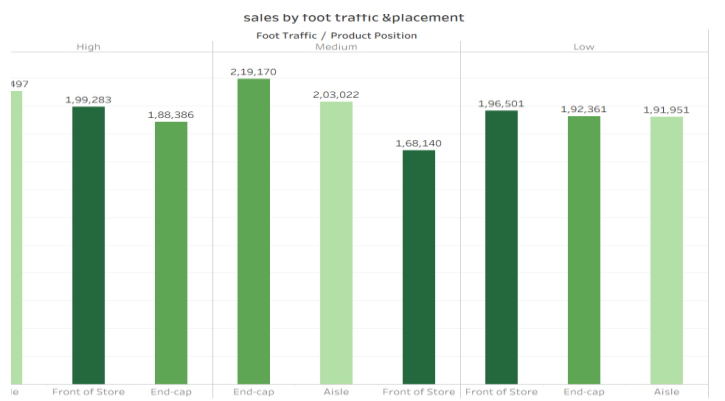
DASHBOAARD





categoryvposition

| Product Category | Product Position | 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-bWDlxMdEt5mA52lb5vImi_caHSi/view?usp=sharing