CUSTOMER SATISFACTION ANALYSIS USING JMP FOR A NATIONAL RETAIL CHAIN

Client Objective

A leading national retail chain sought to understand the factors driving customer satisfaction across its 250+ stores. The client had collected survey responses from over 10,000 customers, but lacked the statistical expertise to extract meaningful insights. They needed actionable outputs to guide their CRM strategy and improve service quality at scale.

My Role and Responsibilities

As a statistical consultant with expertise in JMP, I was brought in to lead the full cycle of statistical analysis and reporting. The project required a combination of data management, statistical testing, and visual storytelling using JMP's interactive capabilities.

My tasks included:

- Cleaning and preparing survey and demographic data
- Performing exploratory and inferential statistics
- Segmenting customer groups using visual clustering
- Building a multiple regression model to identify key drivers of satisfaction
- Creating a professional, insight-driven report using JMP's reporting tools

Data Overview

- **Source:** Customer satisfaction surveys (Likert-scale, multiple choice, and open-ended questions)
- **Size:** 10,276 responses
- **Variables:**
    - Demographics (Age, Gender, Region)
    - Behavioral data (Store visit frequency, Purchase size)
    - Perceptual metrics (Staff courtesy, Store cleanliness, Billing experience, Overall satisfaction)
    - NPS score

Techniques Used in JMP

- **Exploratory Data Analysis (EDA):** Distribution explorer, boxplots, and multivariate scatterplot matrices
- **Inferential Testing:**
    - Chi-square tests to identify dependency between categorical responses
    - One-way ANOVA to compare satisfaction across store regions
- **Segmentation & Grouping:**
    - Cluster analysis to identify high- and low-value customer segments
    - Heatmaps to explore response patterns across segments
- **Regression Modeling:**
    - Built a multiple linear regression model to assess how each service quality metric contributed to overall satisfaction
    - Used Variance Inflation Factor (VIF) analysis to test for multicollinearity
    - Residual diagnostics and leverage plots to validate model integrity

Key Findings

- **Billing Experience** and **Staff Behavior** had the strongest positive influence on overall satisfaction ($p < 0.001$)
- **Store Region** showed significant variation in average satisfaction, especially between metro and tier-2 cities
- Three distinct customer personas emerged through clustering:
    1. **Frequent Loyalists** – older customers visiting weekly with high satisfaction and NPS
    2. **Transactional Buyers** – mid-age, moderate spenders with neutral responses
    3. **High Spend Dissatisfied** – younger, high-value shoppers with low NPS and negative feedback on in-store wait time

Deliverables

- A professionally formatted JMP analysis report (PDF + JMP Journal)

- Customized data dashboards for internal marketing use
- A one-page executive summary with visualized key takeaways
- A presentation-ready slide deck with graphs and segment profiles

Impact & Outcome

The insights were used to:

- Launch a new training module for billing staff across underperforming regions
- Develop personalized campaigns for “High Spend Dissatisfied” segment
- Set KPIs for NPS and satisfaction in the quarterly store performance reviews

Client reported a 12% rise in NPS within 6 months of implementing targeted changes.