

Price Perception & Customer Segmentation

1. Objective

To segment customers based on perceived price and packaging impressions and evaluate how price perception influences brand switching and purchase decisions among Gillette users.

2. Clustering Methodology

- **Technique Used:** K-Means Clustering
- **Variables Used:**
 - `perceived_price`
 - `most_expensive_pack`
 - `switch_response` (binary encoded)

Elbow Method

- Optimal number of clusters determined using the Elbow Method.
 - **Chart Observation:** Sharp decline in inertia till **k = 3**, after which gains diminish.
 - **Chosen Number of Clusters:** 3
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3. Cluster Profiles

Clust er	Perceived Price	Most Expensive (Avg)	Switch Response (Avg)	Segment Insight

0	0.88	2.29	1.00	Highly price-conscious and highly likely to switch based on packaging.
1	0.58	1.80	0.28	Moderately sensitive to price and packaging. Low brand switch risk.
2	2.51	2.64	0.58	High perceived price but not strongly loyal—open to switching.

4. Packaging-Based Price Perception

Most Expensive Pack (Perceived):

- **Fusion** – 79 responses
- **Vector** – 75 responses
- **Mach 3** – 56 responses

Least Expensive Pack (Perceived):

- **Fusion** – 72 responses
- **bsc** – 69 responses
- **Mach 3** – 59 responses

Insight: Conflicting perceptions around Fusion and bsc highlight the importance of **packaging clarity** and **premium cues**.

5. Willingness to Switch Based on Packaging

Response	Count
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Yes	133
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Maybe	103
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No	64
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Insight: 79% (Yes + Maybe) are open to brand switching based on better packaging, emphasizing packaging as a **key differentiator**.

6. Classification Model Performance

- **Model Used:** Multiclass Classification (likely Decision Tree/Random Forest)
- **Target:** Predict Most Perceived Brand Based on Clusters

Metric	Score
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Accuracy	19%
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F1-Score (avg)	10%
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Top Performing Brand	Fusion (F1: 0.33)
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Insight: Low classification accuracy suggests **overlap in perceived price and packaging**, indicating need for **stronger brand-packaging identity**.

7. Logistic Regression – Price Influence on Brand Choice

Brand	Coefficient (Perceived Price)
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Fusion	+0.0307
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Guard	+0.0206
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Mach 3	-0.1315
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Vector	-0.0730
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bsc	+0.1532
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Insight: Higher perceived price **positively influences bsc and Fusion preference**, while it **negatively impacts Mach 3 and Vector**. Mach 3 users may seek value-driven packaging.

8. Key Takeaways

- **Cluster 0** represents the most **brand-switch sensitive** audience.
- **bsc and Fusion** benefit from a premium packaging perception.
- **Mach 3** may need **price-focused repositioning** or **value packaging**.
- With 79% openness to switching, **packaging innovation** presents a strategic advantage.