

Why the Models Use Only Price, CP, and Brand_Cargill

The models focus on three key factors to predict Cargill's market share and assess price sensitivity:

1. **Price:** This is critical as it directly influences farmers' purchasing decisions. Our analysis shows how price changes impact Cargill's brand and value shares, guiding pricing strategies.
2. **Crude Protein (CP):** This reflects the feed's quality, a key driver of choice in cattle feed markets. Including CP ensures we account for product performance.
3. **Cargill Brand Preference:** This captures how much farmers prefer Cargill over competitors like Baramati or KMF Nandini, independent of price or quality.

Why Other Factors Were Excluded

Other factors, such as Fat Content (FC), animal health (AH), value-added services (VAS), and credit availability, were considered but not included due to:

- **Data Quality:** The dataset had issues, such as 1,714 choice sets dropped due to invalid responses and 1,315 rows removed for missing data. Some factors had inconsistent or missing data, which could lead to unreliable results.
- **Model Reliability:** Including too many factors can make the model unstable, especially with data challenges. Our tests showed that Price, CP, and Brand_Cargill provided a robust and reliable model, avoiding issues like overfitting or failure to converge.
- **Actionable Insights:** The models prioritize price sensitivity and brand strength, which are directly controllable and impactful for business decisions.

What This Means for Stakeholders

The models provide clear, actionable insights:

- In Maharashtra, a 10% price cut slightly boosts Cargill's brand share from 29.68% to 29.81%, but competitors like Baramati (22.89% actual share) remain strong.
- In Punjab, Cargill's strong brand preference (89.28% share) allows flexibility for price increases, with value share rising to 90.27% at +10%.
- In Gujarat and South, shares are stable (49.36% and 39.68% at current prices), reflecting balanced data and moderate price sensitivity.

While other factors like services or credit terms matter, their impact is likely captured indirectly through brand preference or requires better data for direct inclusion.