

To test the hypothesis that price sensitivity drives customer churn among SME customers at PowerCo, we would approach this as a classification problem. First, we'd collect historical data including customer demographics, billing history, usage patterns, customer interactions, and churn status. After preprocessing the data, including creating a measure of price sensitivity, we'd perform exploratory data analysis to identify relevant trends and relationships. Then, we'd build and evaluate machine learning models to predict customer churn, considering metrics like accuracy, precision, recall, and F1-score. We'd deploy the model to generate monthly churn predictions and strategically offer the 20% discount to at-risk customers. Continuous monitoring and model updates would be essential for long-term effectiveness. The key data requirements include historical customer data with comprehensive attributes, and the data frame structure would consist of rows representing individual SME customers and columns containing customer attributes and engineered features.