

Business Recommendations Report

Customer Segmentation & Prediction Project

Executive Summary

This project segmented customers into three distinct groups using clustering algorithms and built separate Random Forest prediction models for each segment. The goal was to create segment-specific strategies to reduce churn and increase business value.

Segment-Wise Strategic Recommendations

1. Loyal & Stable Customers

Strategy: Retention & Upselling

- Offer loyalty rewards programs
- Provide premium service upgrades
- Exclusive offers for long-term users
- Early access to new features

Expected Impact:

- Increased lifetime value
- Higher brand advocacy
- Stable revenue growth

2. At-Risk Customers

Strategy: Immediate Retention Campaign

- Personalized retention emails
- Discount or limited-time offers
- Customer satisfaction surveys
- Dedicated customer support follow-ups

Expected Impact:

- Reduced churn rate
- Improved customer satisfaction
- Recovery of potential lost revenue

3. Growth Opportunity Customers

Strategy: Engagement & Conversion

- Targeted marketing campaigns
- Cross-selling related services
- Educational content about features
- Subscription upgrade incentives

Expected Impact:

- Increased engagement
- Higher conversion to premium plan
- Revenue expansion

Model Insights

- Separate Random Forest models improved predictive accuracy within each segment
- Hyperparameter tuning optimized model performance.
- Evaluation metrics (Accuracy, Precision, Recall, F1-score, ROC-AUC) confirmed strong predictive capability.

Business Impact Estimation

By implementing segment-specific strategies:

- Churn reduction estimated between 10–20%
- Increased customer lifetime value
- More efficient marketing budget allocation
- Data-driven decision-making framework

Conclusion

Segment-based predictive modeling enables targeted business strategies rather than one-size-fits-all approaches. This leads to improved retention, better resource allocation, and measurable revenue growth.