

Mwalimu Sacco Customer Churn Prediction – Executive Report

Project Objective

The primary goal of this project is to predict which Mwalimu Sacco members are likely to become inactive or withdraw their membership in the near future. By identifying at-risk members early, Mwalimu Sacco can proactively take actions such as personalized communication, loyalty campaigns, and improved service offerings to enhance retention.

Business Importance

Customer retention is one of the most critical factors in sustaining profitability for any financial institution. Acquiring a new member costs 5–7 times more than retaining an existing one. For Mwalimu Sacco, where loyalty and consistent savings behavior are vital, predicting churn helps minimize deposit loss, strengthen member trust, and maintain financial stability.

How the System Works

The predictive model uses historical member data—such as transaction frequency, deposit behavior, loan repayment history, and digital engagement—to estimate the likelihood of a member churning. Each member receives a 'Churn Probability Score' (0–1), which is categorized into risk levels: Low, Medium, and High.

Dashboard & Decision Support

The interactive Streamlit dashboard allows Mwalimu Sacco staff to:

- Upload or input member data to predict churn probability.
- Visualize members segmented by risk category (low, medium, high).
- Run 'What-If' simulations—e.g., increasing monthly deposits or app usage—to observe how retention likelihood improves.

Key Benefits

- Data-driven decision-making for member engagement strategies.
- Early identification of members at risk, enabling timely intervention.
- Improved financial planning and deposit stability.
- Enhanced member satisfaction through targeted outreach.

Limitations & Next Steps

While predictive accuracy depends on data quality and completeness, the system can continuously improve as more data becomes available. Future enhancements include integration with real-time Sacco systems and advanced explainability using SHAP for transparent decision support.

Conclusion

This initiative positions Mwalimu Sacco as a forward-thinking institution that leverages data science to safeguard member relationships, reduce revenue leakage, and improve operational efficiency. By combining predictive analytics with actionable insights, Mwalimu Sacco can move from reactive to proactive member management.