Parachute

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How it Works

Step 1: Simplify

We start by simplifying all your debt into one easy payment. This makes your debt easier to track and control.

✓ One payment date

✓ One monthly payment

✓ One interest rate

Step 2: Roadmap

Then, we'll you give you a personalized roadmap to help you achieve improved financial well-being.

✓ Pay Parachute loan on time

✓ Keep your credit utilization low

✓ Pay all other bills on time

✓ Don't take new debt

Step 3: Rewards

And finally, we reward you for following our guide to healthy financial behaviour.

✓ Earn cash-back

✓ Win weekly & monthly rewards

✓ Improve your credit score

✓ Feel in control of your finances

Team Gordon

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Business Objectives

1. Customer Engagement

How can we better retain users and increase app engagement?

2. Financial Wellbeing

How can we reduce loan defaults to enhance financial wellbeing?

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Why Personalization

Without Personalization   With Personalization

40% More revenue from personalization marketing

"**Seventy-two percent of consumers say they expect the business they buy from to recognize them as individuals and know their interests.**"

McKinsey & Company, "The Value of Getting Personalization Right—or Wrong—is Multiplying," 2023

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Personalization Model

Model 1
Customer Engagement

- Determine the engagement level of the customer using the app.

+

Model 2
Loan Re-Payment Prediction

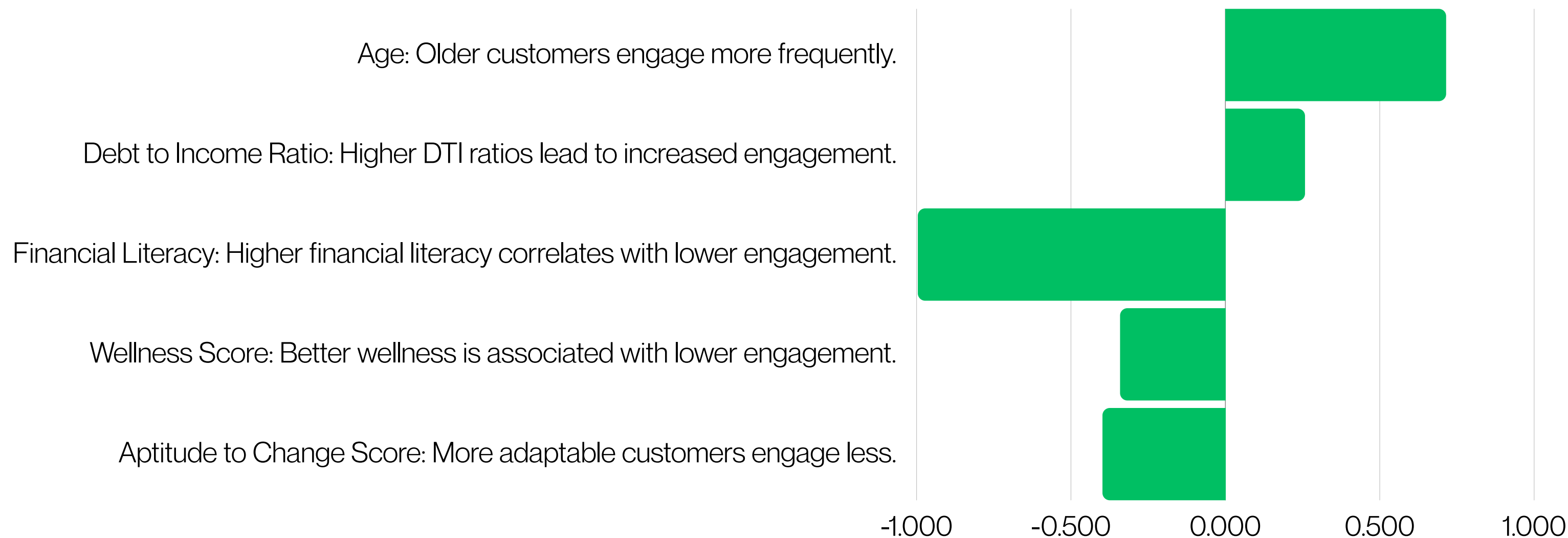- Identify whether the customer will re-pay the loan.

=

Customer Index Score

Combines output of both models

- Engagement Level: App activity metrics.
- Re-payment Risk: Financial and demographic data.

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Loan Re-Payment Prediction

Interaction features used in model

Logistic Regression - AUC: 0.86
LightGBM - AUC: 0.83

FICO Score

Customers with a good credit score are more likely to pay the loan.

Monthly Re-Payment Burden

A higher repayment burden increases the likelihood of repayment risk, as it indicates financial strain.

Loan to Income

A higher loan-to-income ratio suggests borrowers may have taken on more debt than they can comfortably repay, leading to higher risk.

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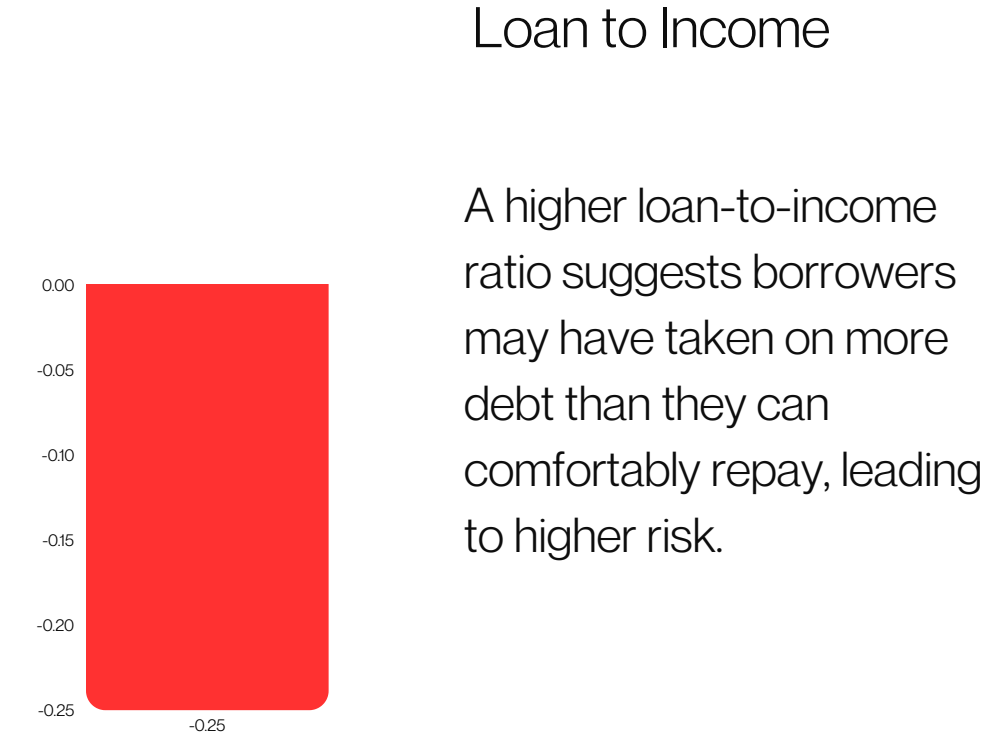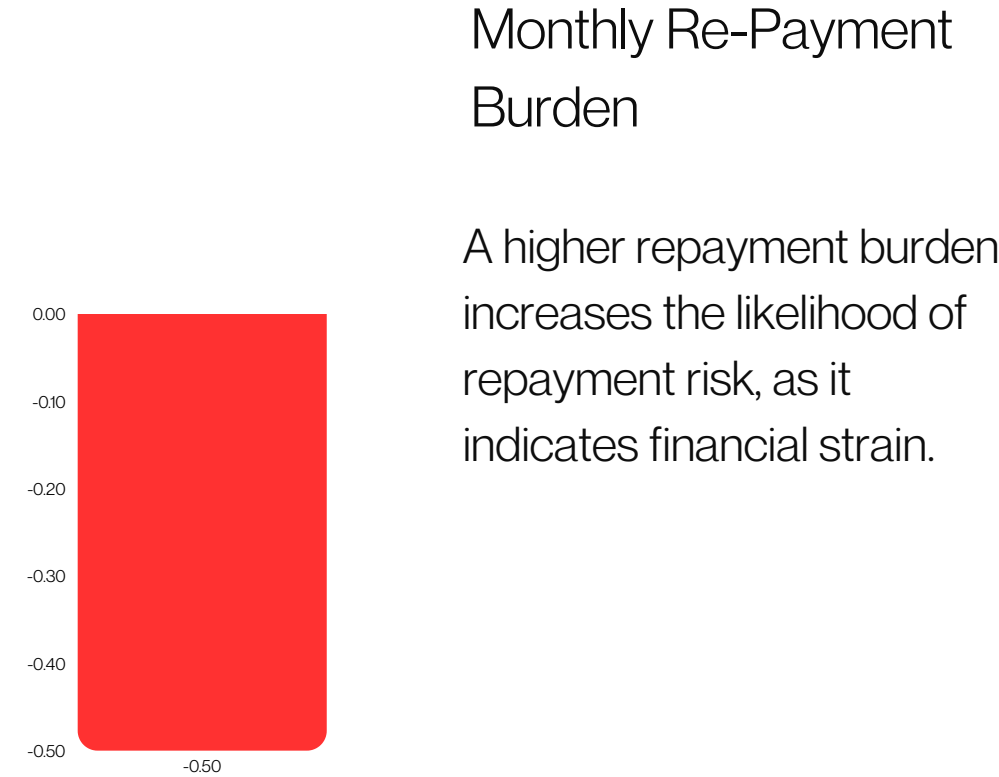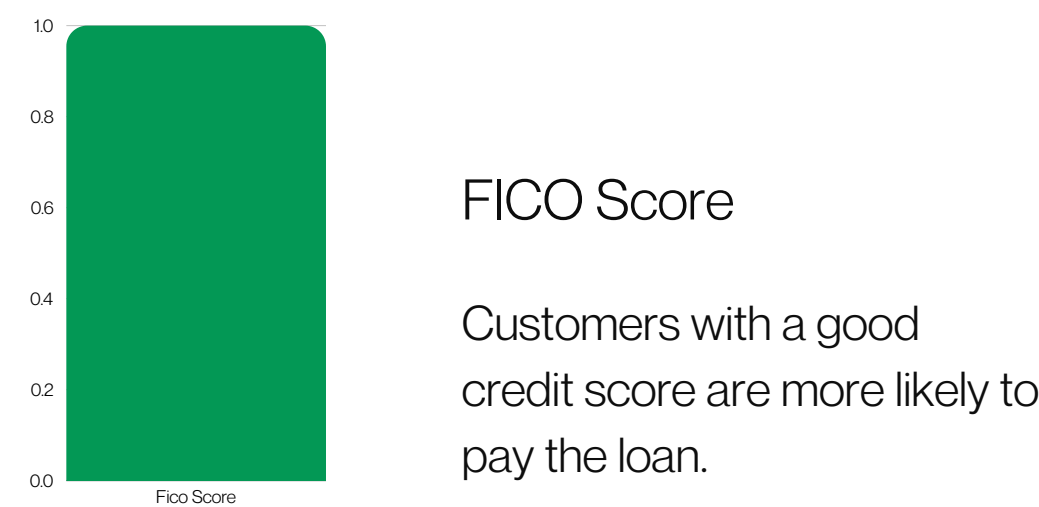
Customer Index Score

Formula

Engagement Score x (0.45)

+

Repayment Score x (0.55)

=

CIS >= 2.10: Low Risk

CIS >= 1.05: Medium Risk

CIS < 1.05: High Risk

Customer Segmentation

Customer Segment A (Low Risk)

- Experienced professionals or mid-career individuals
- Low Risk of re-paying loans
- Frequently uses App

Customer Segment B (Medium Risk)

- Younger professionals or mid-career individuals building financial stability
- Sometimes miss loan payments
- Moderately uses App to track loans

Customer Segment C (High Risk)

- Less financially established individuals facing financial hardship.
- High Risk of miss loan payments
- Rarely uses App to track loans

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Customer Strategy

Low
Risk Customers

Maintain Engagement

- **Upsell Opportunities:** Introduce advanced app features, such as investment tools or premium services.
- **Gather Feedback:** Solicit feedback to further improve services and identify potential areas of enhancement.

Medium
Risk Customers

Pro-Active Outreach

- **Educational Content:** Provide resources on financial literacy to promote better financial habits.
- **In-App Reminders:** Use push notifications to encourage consistent app usage and on-time payments.

High
Risk Customer

Personallized Outreach

- **Financial Counselling:** Offer personalized financial advice or connect them with financial wellness programs.
- **Flexible Repayment Plans:** Provide options like adjusted payment schedules or temporary relief measures.
- **Enhanced Engagement Strategies:** Utilize gamification, rewards, or challenges to boost app engagement.

Recommendations

Maintain Relationships
Low Risk (Segment A)

Exclusive benefits for customers, such as personalized financial planning.

Referral programs to attract similar customers.

Strengthen Relationship
Medium Risk (Segment B)

Personalized marketing campaigns highlighting financial tools, products, and incentives tailored to their needs.

Financial literacy workshops or content to improve their understanding of loan products and debt management.

Loyalty program that rewards consistent payments and increased engagement with your services.
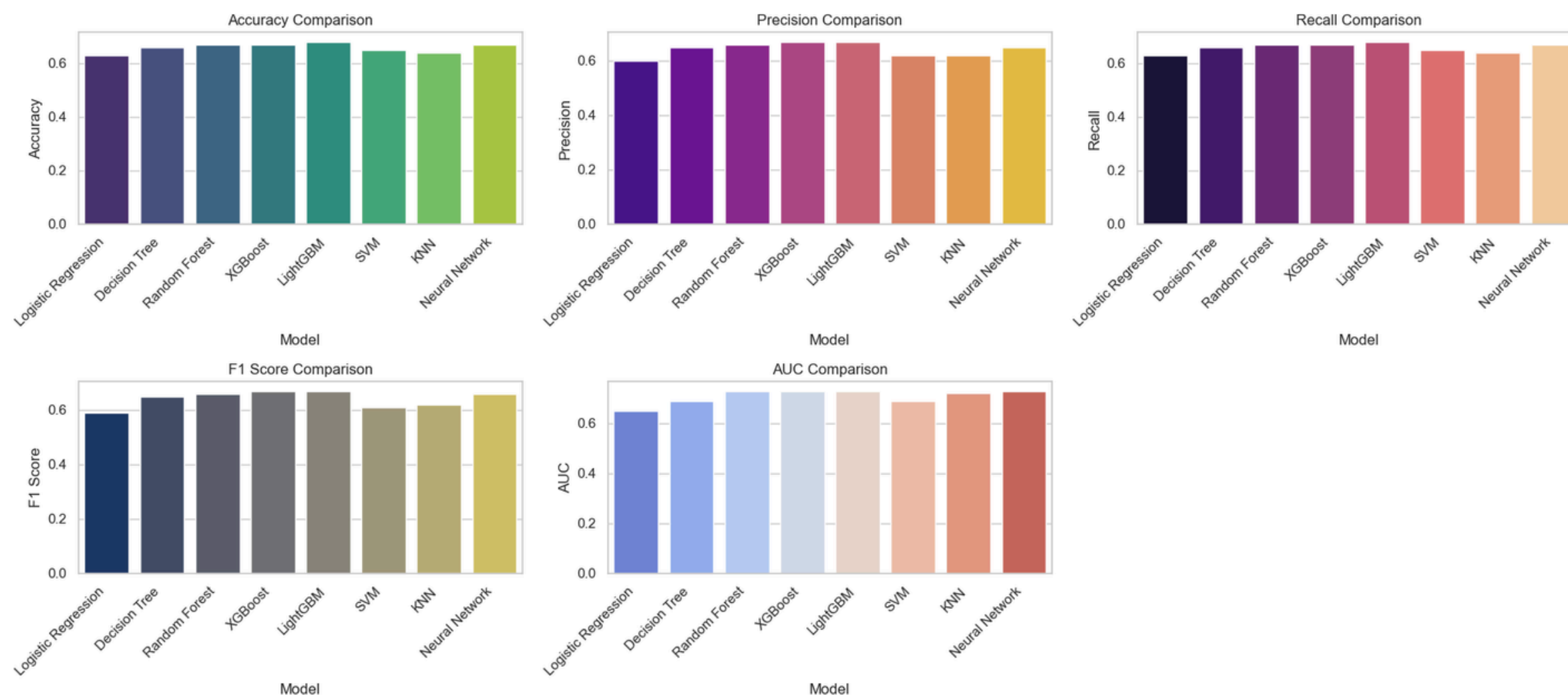
Thank You!

Customer Engagement

![Parachute]

Appendix

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LightGBM - AUC: 0.67
- LightGBM captures complex patterns and feature interactions better than simpler models like Decision Trees or Logistic Regression.
- It works efficiently with sparse data, leveraging histogram-based learning for speed.
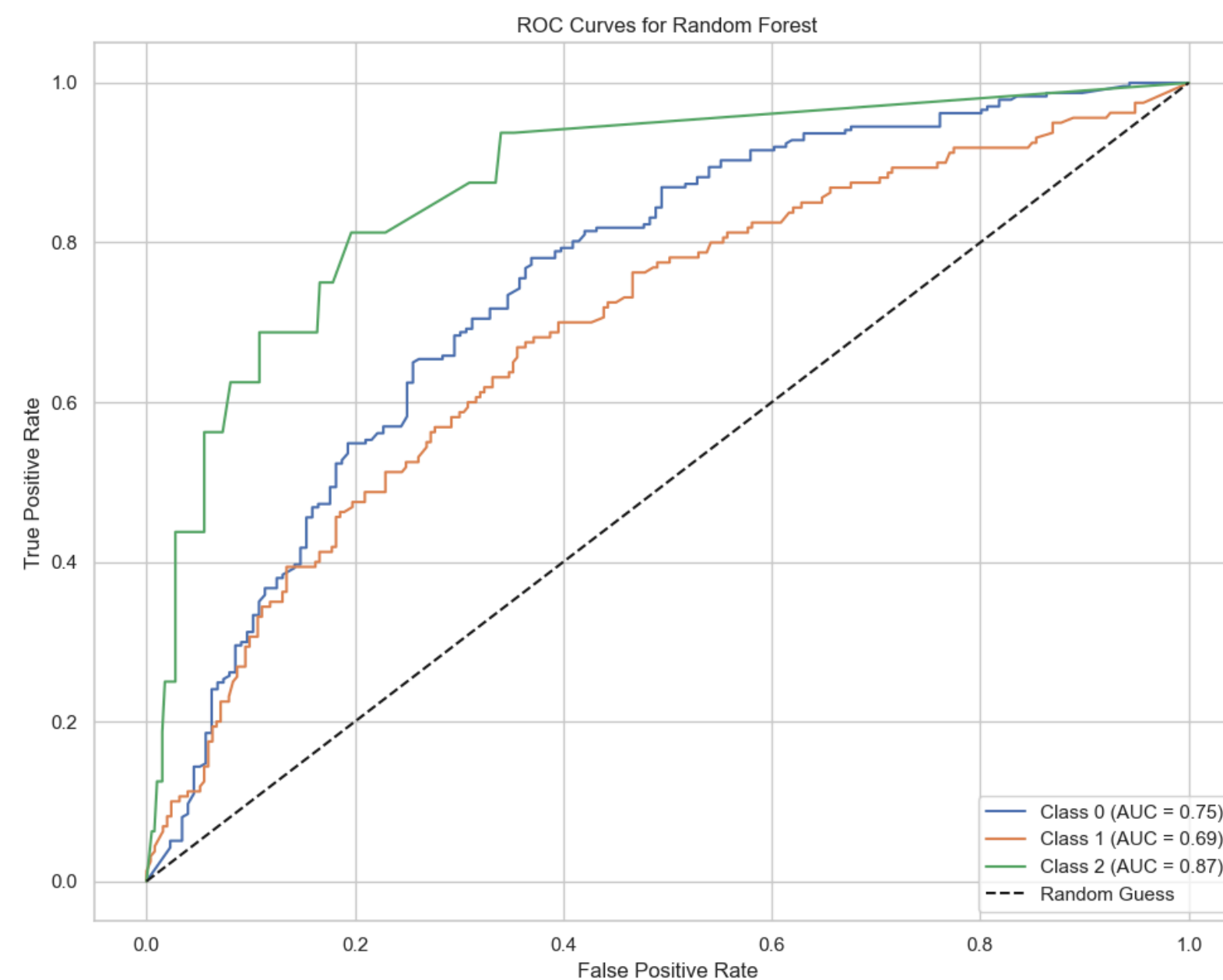
Appendix

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All models had a difficult time like Random Forest had a difficult time depicting medium usage with an AUC 0.69

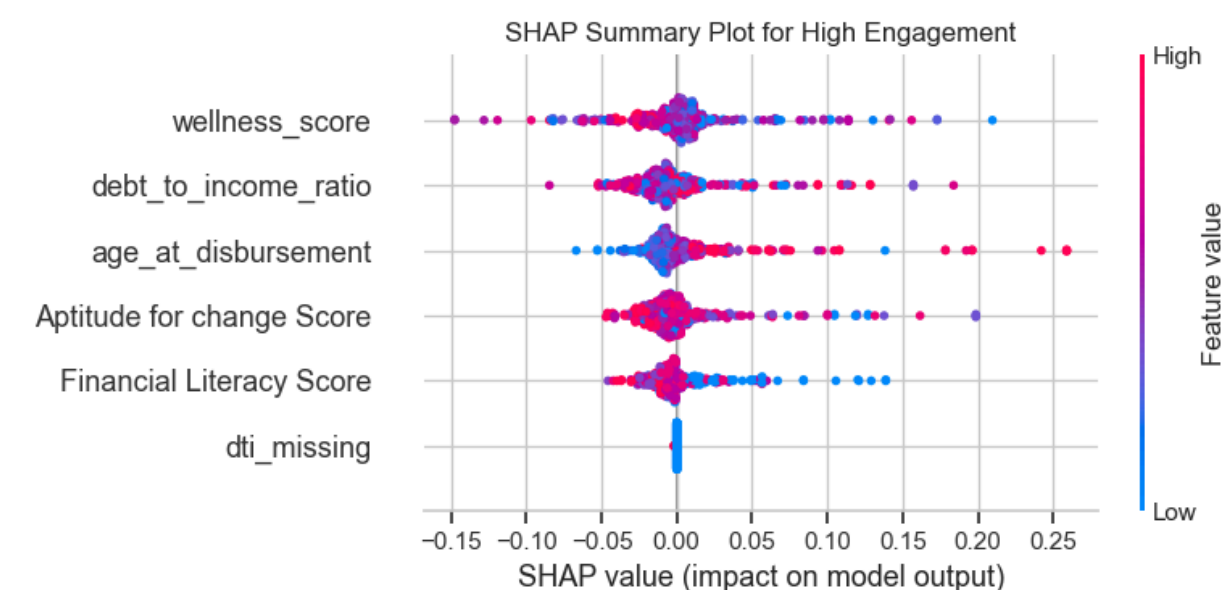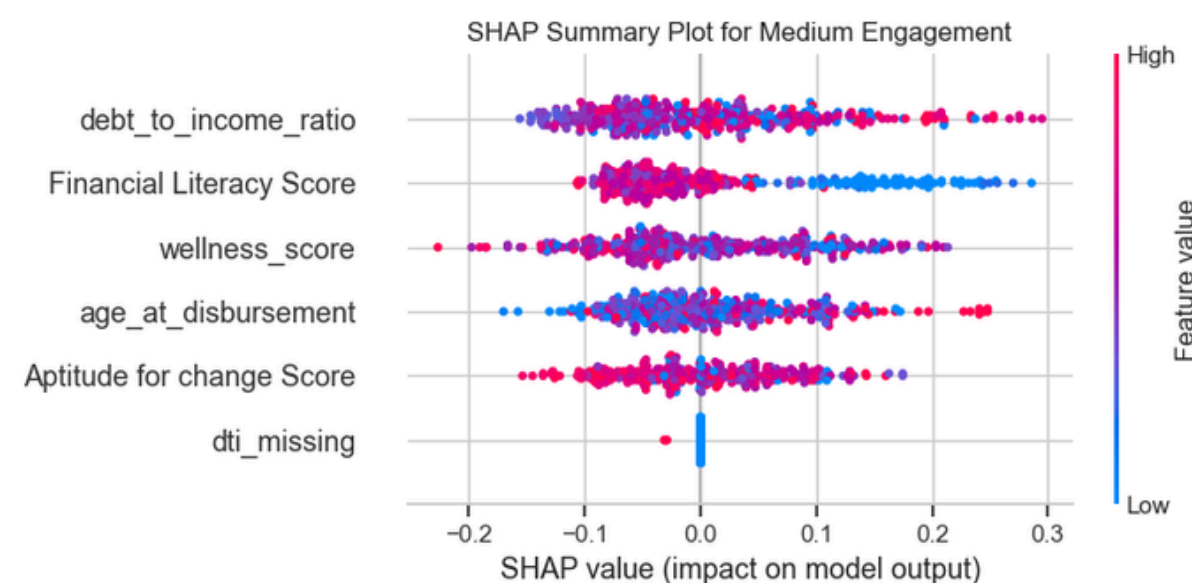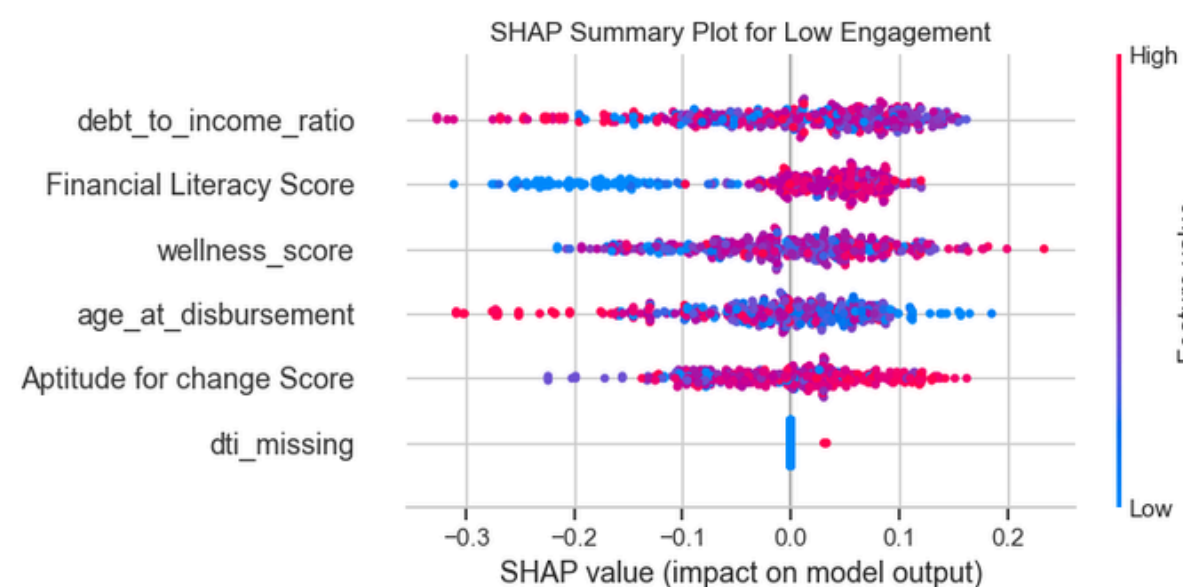ROC Curves for Random Forest

- Class 0 (AUC = 0.75)
- Class 1 (AUC = 0.69)
- Class 2 (AUC = 0.87)
- Random Guess

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Appendix

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Customer Engagement

SHAP Summary Plot for Low Engagement

debt_to_income_ratio
Financial Literacy Score
wellness_score
age_at_disbursement
Aptitude for change Score
dti_missing

SHAP value (impact on model output)

SHAP Summary Plot for Medium Engagement

debt_to_income_ratio
Financial Literacy Score
wellness_score
age_at_disbursement
Aptitude for change Score
dti_missing

SHAP value (impact on model output)

SHAP Summary Plot for High Engagement

wellness_score
debt_to_income_ratio
age_at_disbursement
Aptitude for change Score
Financial Literacy Score
dti_missing
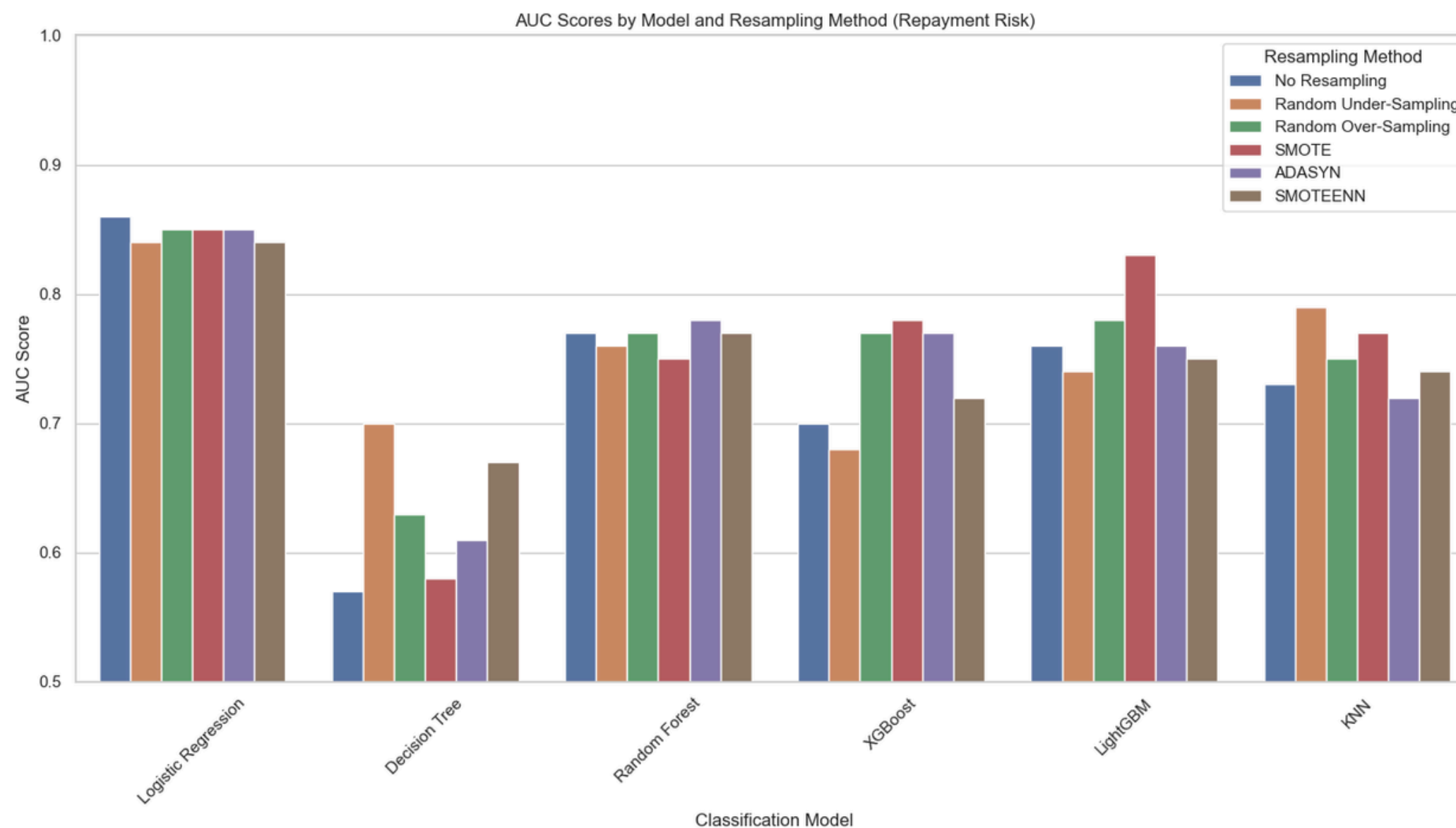
SHAP value (impact on model output)

Appendix

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- **Logistic Regression was the best one**
  - **Next best was LightGBM - AUC: 0.83**
- All Models were used to classify whether or not the customer will re-pay the loan given the three interaction features:
  a. FICO Score
  b. Monthly Repayment Burden
  c. Loan to Income Ratio

Loan Re-Payment Prediction


AUC Scores by Model and Resampling Method (Repayment Risk)

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Appendix

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Loan Re-Payment Prediction

- **Logistic Regression 0.86 was the best one**
  - **Next best was LightGBM - AUC: 0.83**
- The importance of each of the features
  a. FICO Score
  b. Monthly Repayment Burden
  c. Loan to Income Ratio

```
CIS_Segment                Segment A  Segment B  Segment C
Predicted_Engagement_Level
High Engagement                    0          7          0
Low Engagement                     4          0         84
Medium Engagement                  0         49          0
```


Feature Coefficients from Logistic Regression

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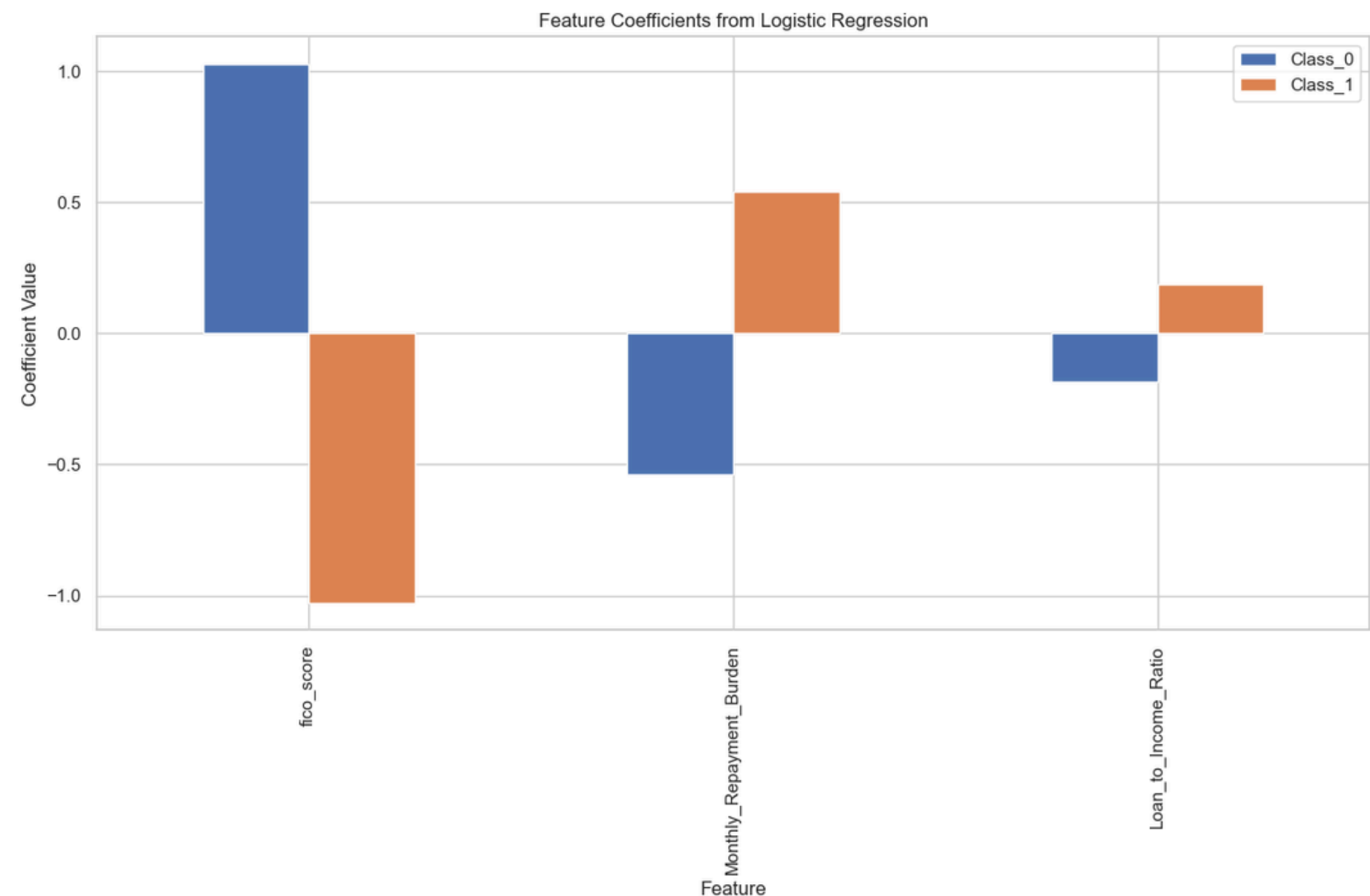
Customer Score Index

Appendix

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The CSI is typically derived using a weighted combination of multiple metrics that reflect customer behaviour, financial status, and engagement.

Engagement Metrics:
1. Number of interactions (e.g., app usage, visits, responses to marketing campaigns).
2. Customer participation in programs like rewards or self-assessments.

Financial Metrics:
1. Debt-to-income ratio.
2. Loan-to-income ratio.
3. Monthly repayment burden.
4. FICO or credit score.

Risk Metrics:
1. Loan status (e.g., past-due loans, written-off loans).
2. Predicted repayment probability or risk score.

Behavioural Data:
1. Activity levels (e.g., quizzes, mood tracking, inspiration counts).
2. Customer engagement level (e.g., low, medium, or high engagement).

References

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1. McKinsey & Company. (2023). The value of getting personalization right—or wrong—is multiplying. Retrieved from https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/the-value-of-getting-personalization-right-or-wrong-is-multiplying
2. OpenAI. (2023). *ChatGPT* (GPT-4) [Large language model]. https://www.openai.com/chatgpt