

How to get loans funded on Kiva



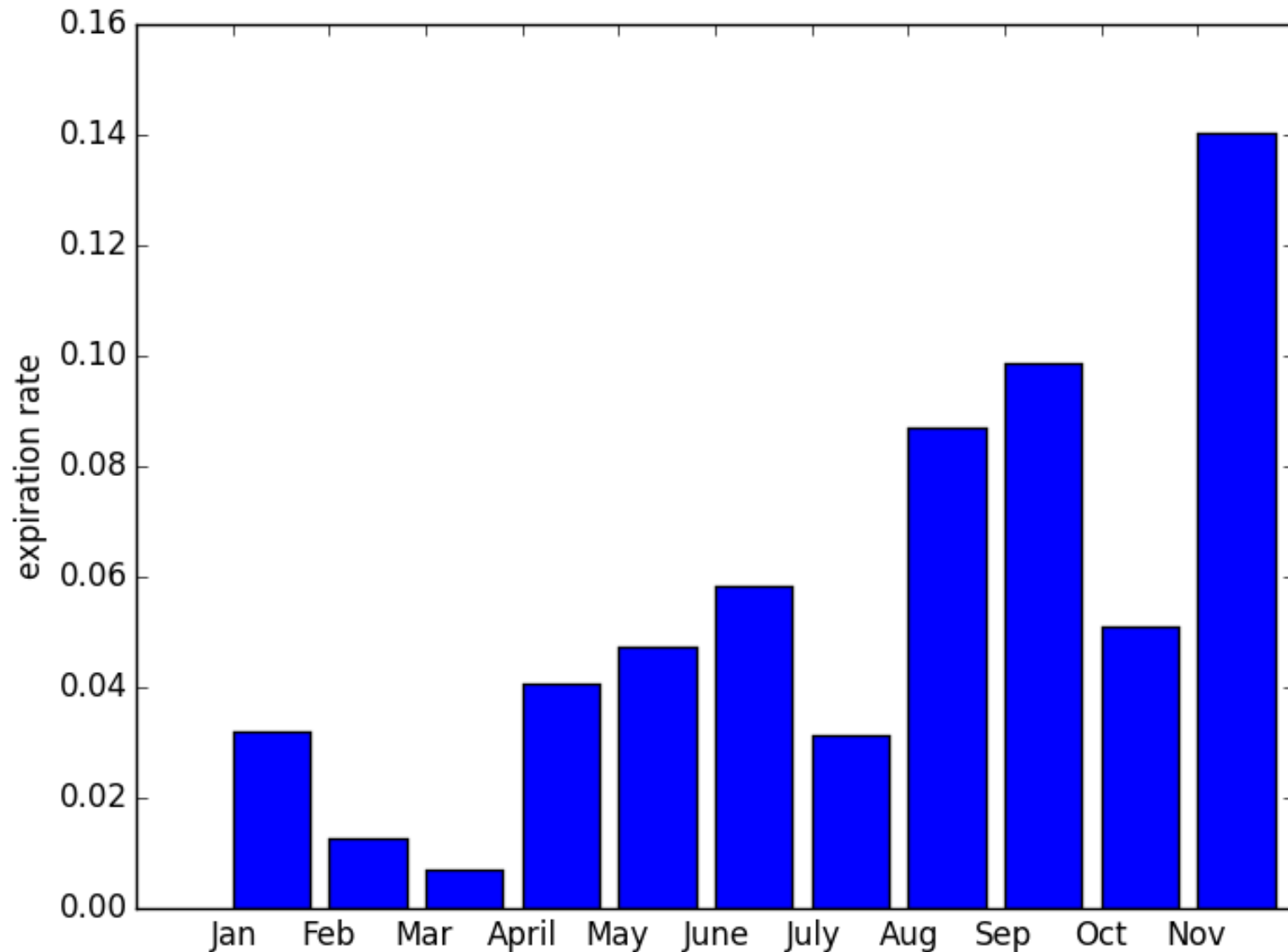
Matthew Lichti
Data Science Fellow
Zipfian Academy

Overview

- \$682 million in loans funded by 2 million lenders around the world
- Microfinance organizations need to



Expiration rate – highly variable over time



Country

Sector

Activity



Gladys



Kenya

Agriculture | Poultry

A loan of \$225 helps Gladys to

poultry.

purchase

[Read their story »](#)

Funding via Juhudi Kilimo

22% funded



\$175 to go

Lend \$25

Loan amount

Use

500 Features

- Loan amount, Payment term in months
- Gender, group size, currency loss,
- Payment interval (monthly, irregular, all at end)
- Country (77)
- Sector (15) ex. agriculture, retail, education
- Activity (149) ex. rickshaw, cafe, cattle
- Themes (22) ex. green, conflict zones, startup
- Description of use: term frequencies of 250 most common words, ex. 'buy new fishing nets'



- Random Forest Model with weighted samples

Feature Engineering

GROUPS OR INDIVIDUAL

- ☒ Groups
- ☐ Individuals

ATTRIBUTES


- ☐ Green
- ☐ Higher Education
- ☐ Islamic Finance
- ☐ Youth
- ☐ Start-Up
- ☐ Water And Sanitation
- ☐ Vulnerable Groups
- ☐ Fair Trade
- ☒ Rural Exclusion
- ☐ Mobile Technology
- ☐ Underfunded Areas
- ☐ Conflict Zones

GENDER

- ☐ Male
- ☒ Female



Mary's Group

 Kenya | Agriculture | Farming

A portion of Mary's Group's \$875 loan helps a member to purchase hybrid seeds and fertilizer to improve harvests of maize.

[Read their story »](#)

Funding via One Acre Fund

Loan Use: Vector of Terms

Repayment Term
Repayment Schedule

11 months (Additional
Information)
At end of term

Currency Exchange Loss:

Possible

Results

October 2014

- 94.9% funded, 5.1% of loans expired,
- 28.2% flagged high risk by my model, 71.8
- High-risk group: 17.1% of loans expired
- Low-risk group: 0.4% of loans expired
- 94.3% of expired loans in high-risk group

November 2014

- 85.9% of loans funded, 14.1% of loans expired,
- 33.2% flagged high risk by model
- High-risk group: 38.8% of loans expired
- Low-risk group: 1.5% of loans expired
- Identified 91.8% of expired loans

	Model predicted Low Risk	Model predicted High Risk
Loans that Expired		

Challenges

- Huge seasonal variations in expiration rates
- Kiva made many policy changes to expiration policies over time
- Unbalanced classes: only 5.5% expired
- Avoid overfitting models

Keys to getting funded

- Monthly repayment schedule
- Smaller loans and shorter repayment terms
- Agriculture and education best, housing and personal expenses did poorly
- Group loans over individual loans
- Women more likely to get funded
- Shorter text is better