







Credit Modelling System for Smallholder Farmers

Problem Statement

"To create a credit scoring system which assesses farmers' ability to repay and allow for customized loans to be lent to these farmers "

Initial Problems Faced



Lack of data on the risk assessment of farmers



Lack of understanding on the real needs and circumstances of farmers



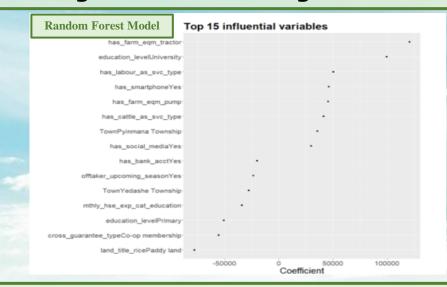
Various unpredictable factors such as weather conditions





Challenging for Financial Institutions to conduct risk assessment

Regression Model: Determine significant borrowing variables



Methodology

- Run several regression models to determine significant variables
- 2. Infer the common significant variables from models such as Lasso, Ridge and Random Forest
- Run multiple variable regression model and regression tree model with the common variables for predictive analysis

Extract of Loan Amount Estimator via Excel

AgriG8 **Loan Amount Estimation By Models** Loan Amount Indicator - Linear Regression (as per Team) Loan Amount Indicator - Regression Tree (as per Team) MMK - MMK -Generate Prediction **User Manual**

- Input farmer details in grey cells
- Click the "Generate Prediction" button to generate the estimated loan amount and corresponding minimum and maximum threshold of loan amount
- Click on "Reset Parameter" button to reset inputs for further predictions

Extract of Risk Score Card via Excel

Agrig8 SCORE CARD - EVALUATING Section A: Farmer's Inputs	A FARMER'S RISK L	.EVEL		
I. Farm Conditions	Select Inputs Below :	Score	Max Score Attainabl	e
1 Land ownership	Owned	4	4	-
2 Type of soil	Clay soft	3	4	
3 Climate (\$ of dry season)	Dry season > 4 months	1	4	
		8	/ 12	1. Enter information
II. Farmer's Technical Level	Select Inputs Below :	Score	Max Score Attainabl	
1 Years of experience (years)		Score 3	Max Score Attainabl	collected from farm
1 Years of experience (years) 2 Use of certified seed	3-6 years Always	3 4	F 4	0 0
3 Apply Phosphate fertilizer	Always	4	F 4	visits into scorecard
4 Amount of N applied	Adequate for good yield	3	F 3	
4 Amount of it applied	Adequate for good yield	14	/ 15	template template
				T
III. Farmer's Socio Economic	Select Inputs Below :	Score	Max Score Attainabl	e
1 Gender	Female	4	4	-
2 Age	< 32	2	F 4	
3 Number of household members			F .	
	<= 5 persons	2	4	
4 Number of memebrs contribute financially	>= 4 person	4	4	
				1
4 Number of memebrs contribute financially 5 Education level Section B : Farmer's Risk As:	/ >= 4 person University	4 4 16	# 4 # 4 / 20	Result Classification of Results can be adjusted based on Agrig8's needs Average
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