

AICORE 3RD PROJECT BRIEF

# Tailored brewing

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# Project goal:

Decide on coffee brewing method based on collected parameters.

# Business goal:

Place orders for coffee beans based on the intended brewing method.

# Client profile

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- 01 COMPANY: CHAIN OF SPECIALTY BREWERS
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- 02 BUSINESS: OFFERING BOTH COFFEE BEANS AND TAILORED COFFEE EXPERIENCE IN THEIR COFFEE SHOPS ACROSS THE UK
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- 03 BUSINESS GOAL:
1. EXPAND ABROAD AND FIND NEW SOURCES FOR SPECIALTY COFFEE
  2. OFFER WIDER SELECTION OF SPECIALTY COFFEES FROM AROUND THE WORLD

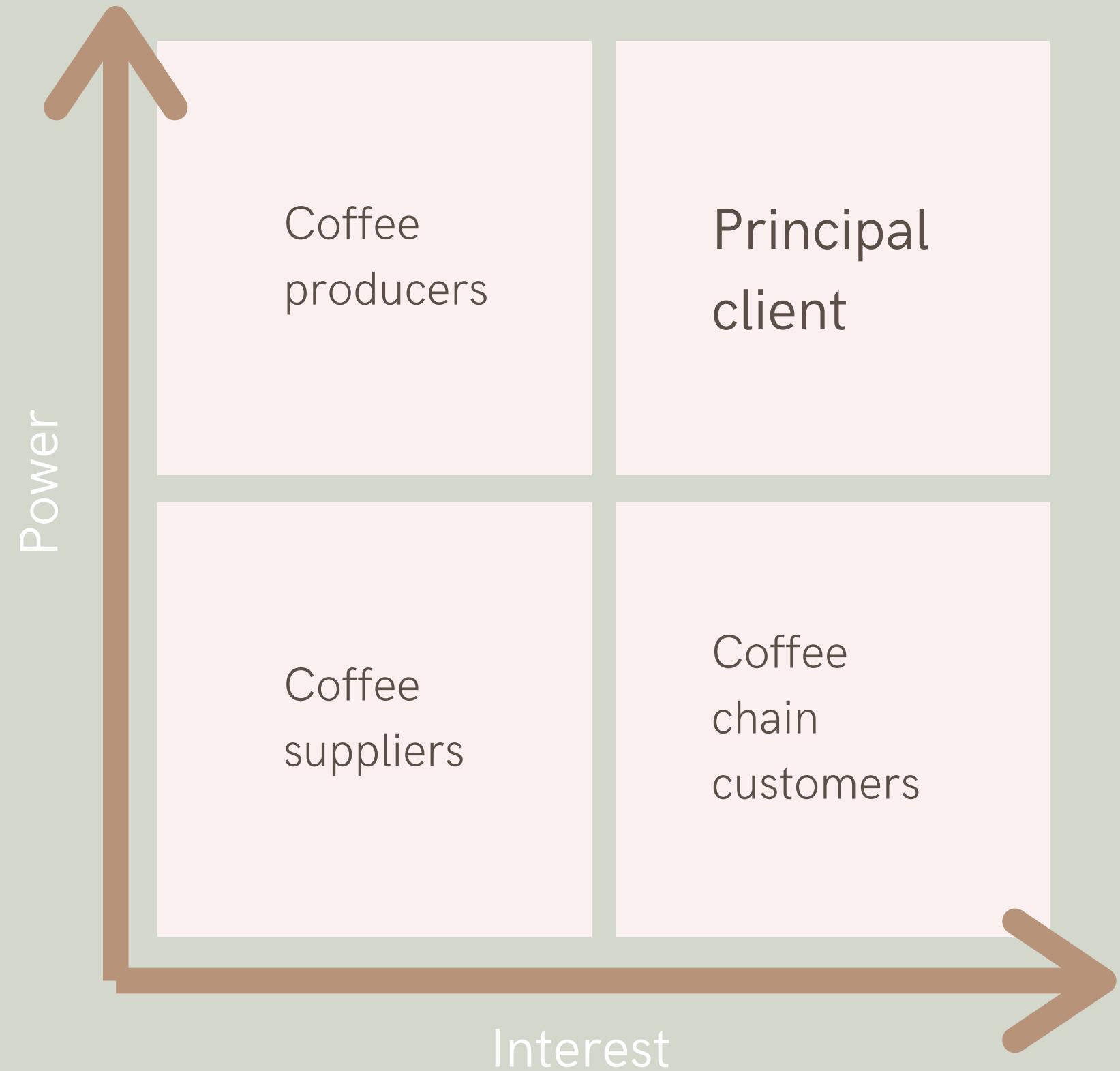
# Target variable

Specialty coffee

DATASET: 851 VALID  
DATA POINTS

# Predictors

- region of origin
- natural processing
- traditional fermented processing
- closed fermented processing



# Stakeholder analysis

# Model success evaluation metrics

PPV (POSITIVE PREDICTIVE RATE)

- for both testing model and presenting the results
- make sure the client offers their customers only the specialty beans (false positives are more costly than false negatives)

ROC CURVE

- only for testing model and optimization
- find the best threshold

*Accuracy* was not used in this project given imbalanced even distribution of data labels (espresso v. specialty brewing).

# Costly decisions

Mistaking beans for speciality coffee is more damaging to the brand than not purchasing cheaper raw material.

Daily coffee shop revenue: 400 GBP

Cost of coffee:

36 GBP/kg - avg. cheapest speciality beans

72 GBP/kg - av. more expensive speciality beans

1 kg of beans = 120-140 cups

80 cups a day (assuming only sales of beverages)

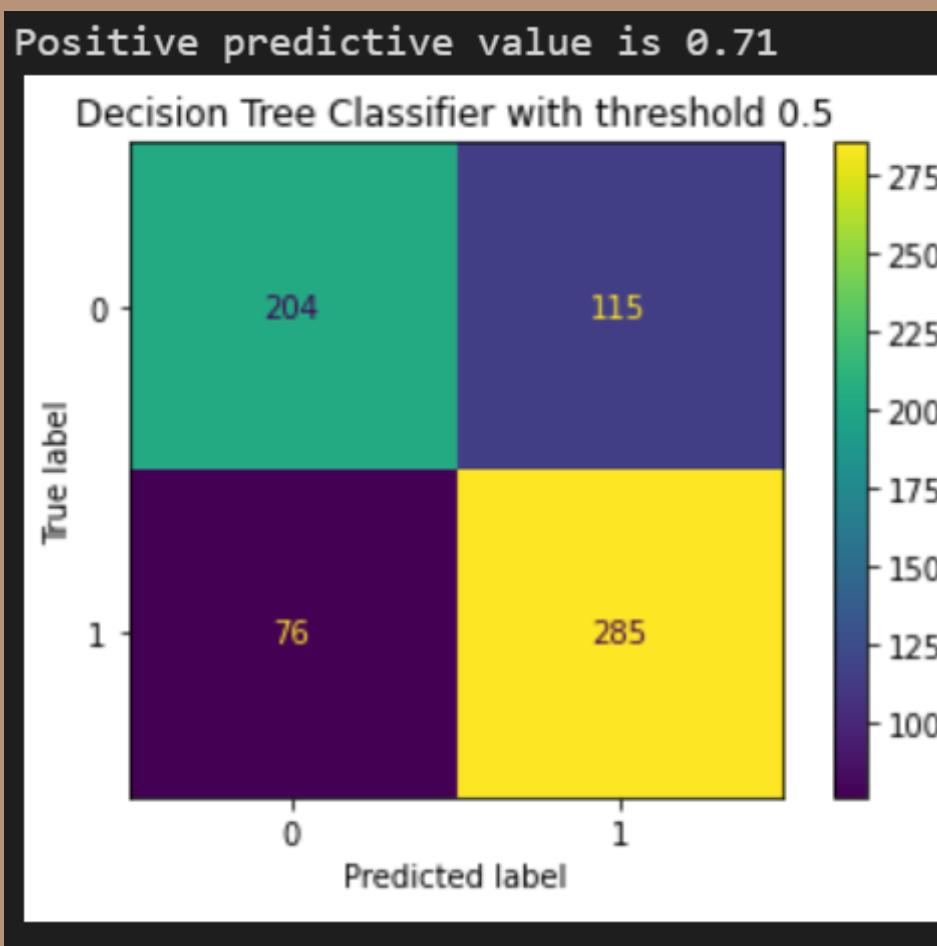
10 GBP - single customer spending = 30 if he tells 3 friends about the experience

18 GBP - potential loss on cheaper coffee not purchased

# Chosen model

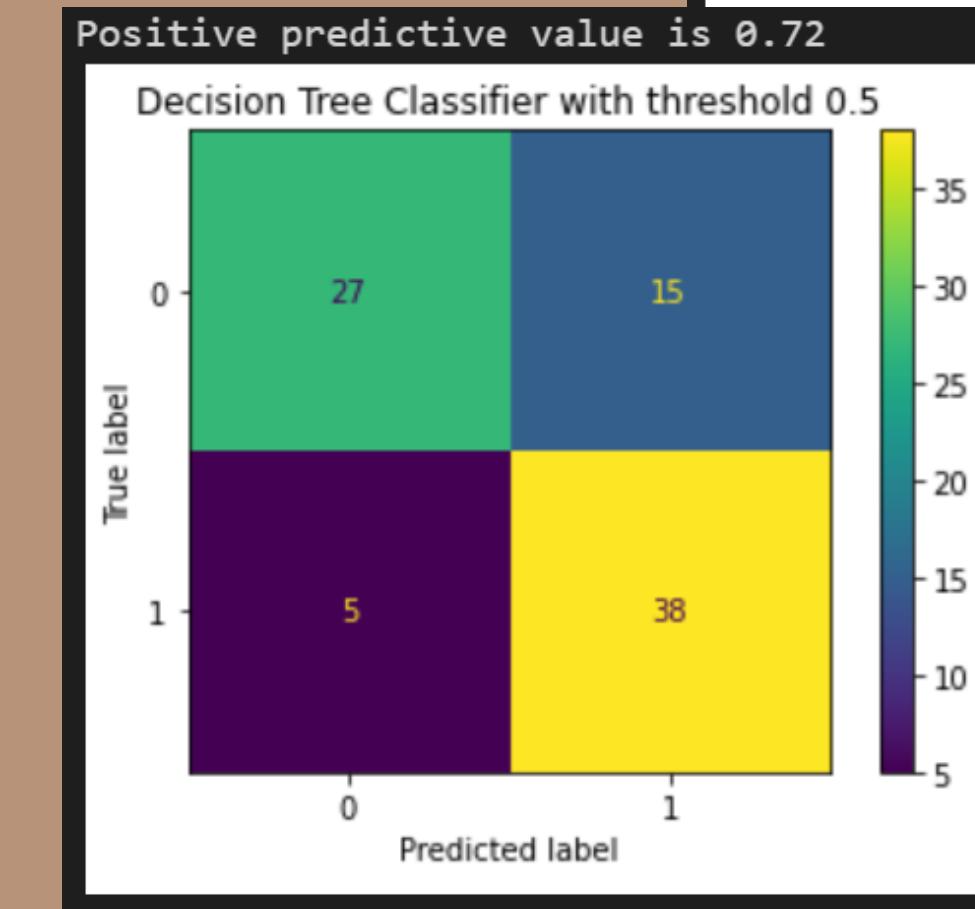
## DECISION TREE CLASSIFIER

- 3 models tested: Naive Bayes, Decision Trees and KNN
- best AUC score on decision trees
- model was optimised using predefined costs of errors
- best score was of 72% of precision

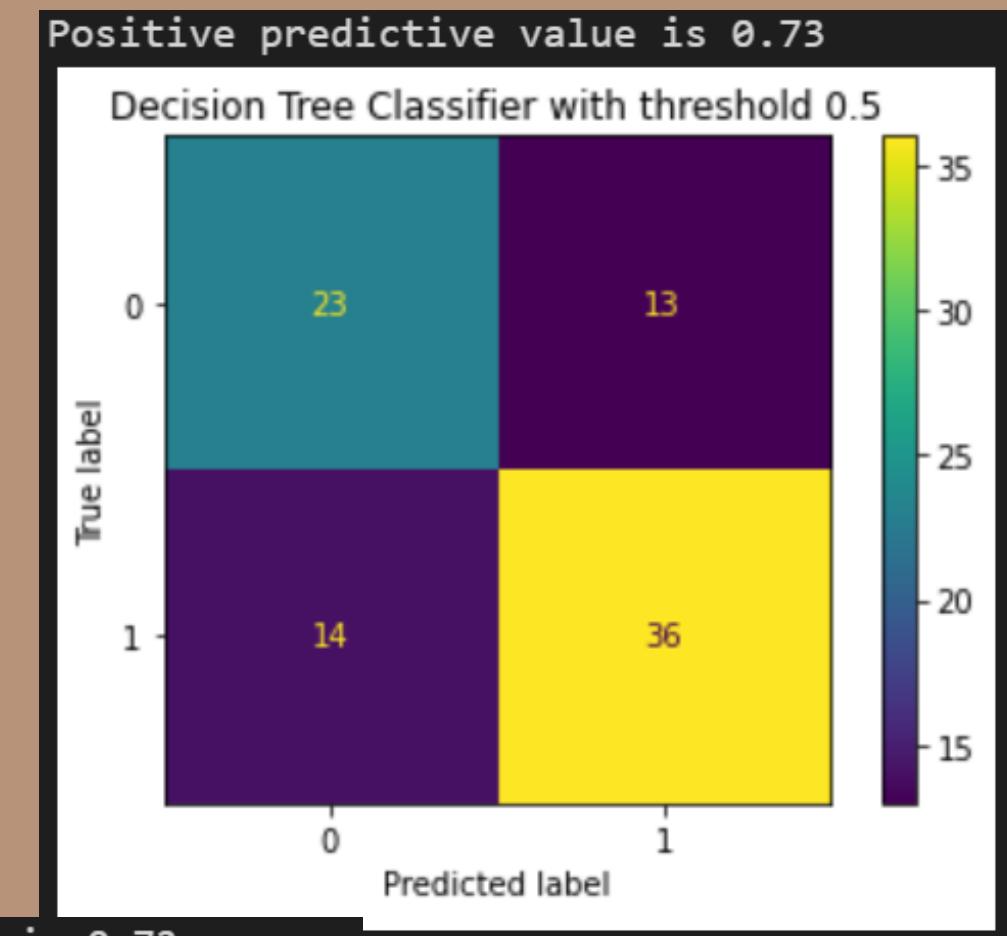


TRAIN

TEST



VALIDATION



## RESULTS AND RECOMMENDATIONS

- model did slightly better on validation set than training set - randomness of data
- the precision score was decent but not high enough to yield satisfactory performance for the coffee purchasing process
- two variables: roast and blend are enough to distinguish specialist beans without implementing AI solutions
- Final recommendation: invest in new beans rather than advance AI system

Questions?

