Loan Request Prediction

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Summary

To develop a predictive model that estimates the loan borrower is eligible to received based on their financial attributes.

- Income salary
- No of dependents
- Luxury asset value
- Bank asset value

Outline

- Business Problem
- Data
- Methods
- Results
- Conclusions

Business Problem

The business problem is centered around a financial institution, such as a bank or lending agency, that faces challenges in efficiently and accurately assessing loan applications. The primary goal is to optimize the loan approval process and reduce the risk associated with loan disbursals while ensuring responsible lending practices.

Income Salary

- Applicants with higher income salaries tend to receive higher estimated loan amounts, indicating that a strong financial standing positively influences loan approval decisions. The model leverages this relationship to provide personalised loan amount estimates based on the applicants' income levels.
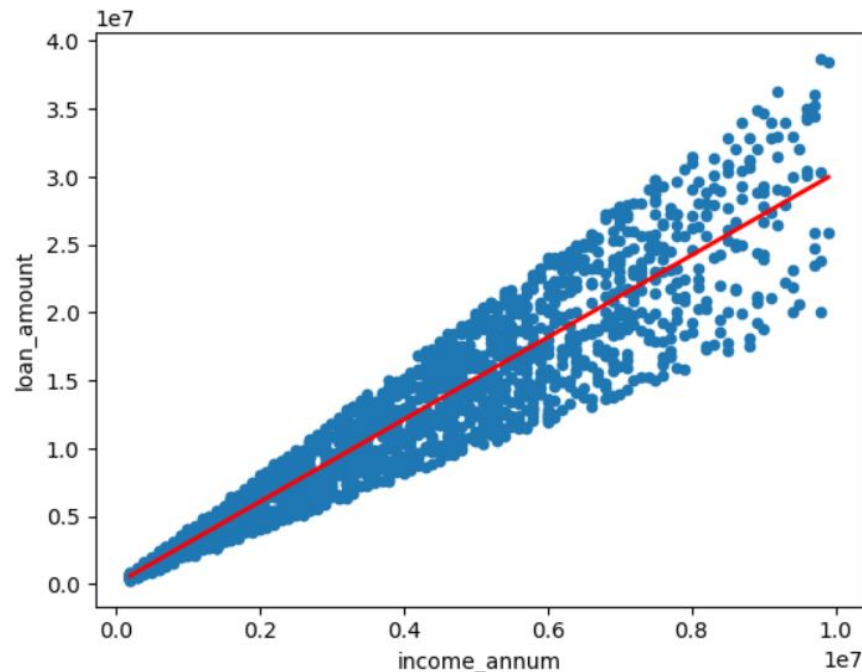
Number of Dependents

- A smaller number of dependents in an applicant's household is associated with higher estimated loan amounts. This finding suggests that individuals with fewer financial dependents may have greater capacity to take on additional loan obligations, leading to more favourable loan offers.

Dep. Variable:	loan_amount	R-squared:	0.877
Model:	OLS	Adj. R-squared:	0.877
Method:	Least Squares	F-statistic:	3494.
Date:	Wed, 02 Aug 2023	Prob (F-statistic):	0.00
Time:	20:58:36	Log-Likelihood:	-31867.
No. Observations:	1964	AIC:	6.374e+04
Df Residuals:	1959	BIC:	6.377e+04
Df Model:	4		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	1.504e+05	1.47e+05	1.021	0.308	-1.39e+05	4.39e+05
income_annum	2.7463	0.087	31.599	0.000	2.576	2.917
no_of_dependents	-7.475e+04	3.57e+04	-2.091	0.037	-1.45e+05	-4641.800
luxury_assets_value	0.0645	0.023	2.817	0.005	0.020	0.109
bank_asset_value	0.1023	0.049	2.102	0.036	0.007	0.198

|			
Omnibus:	25.626	Durbin-Watson:	1.956
Prob(Omnibus):	0.000	Jarque-Bera (JB):	35.322
Skew:	-0.156	Prob(JB):	2.14e-08
Kurtosis:	3.579	Cond. No.	3.75e+07

Notes

Luxury Asset Value

- The model recognizes the value of luxury assets owned by the applicants as a significant factor in determining loan amounts. Individuals with higher luxury asset values may have additional collateral or resources to support their loan applications, resulting in increased loan approval amounts.
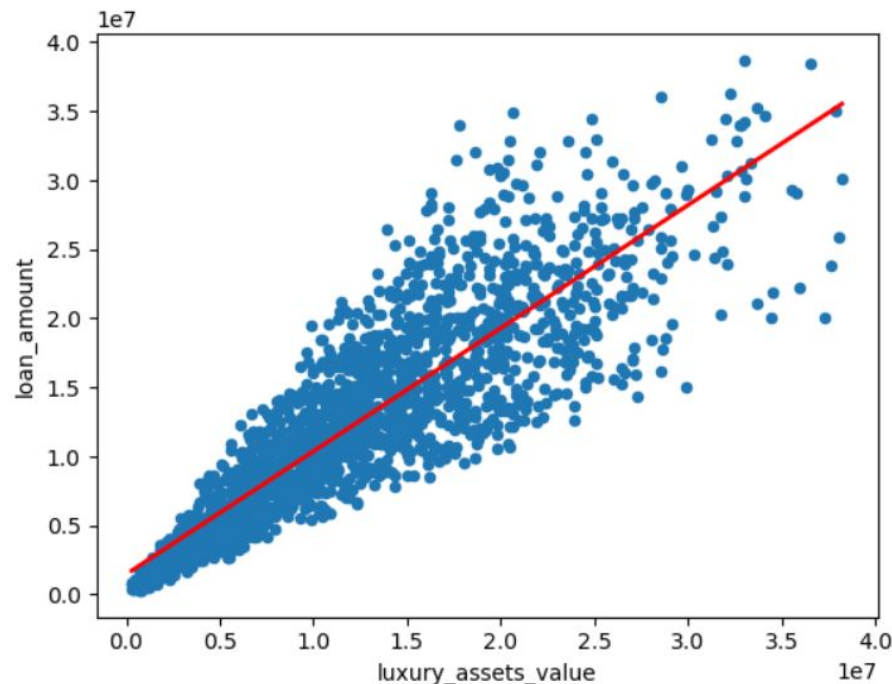
Bank Asset Value

- The value of existing assets held in bank accounts also plays a vital role in the model's estimation of loan amounts. Applicants with substantial bank asset values are likely to receive higher estimated loan amounts, as these assets provide further assurance of financial stability and repayment capacity.
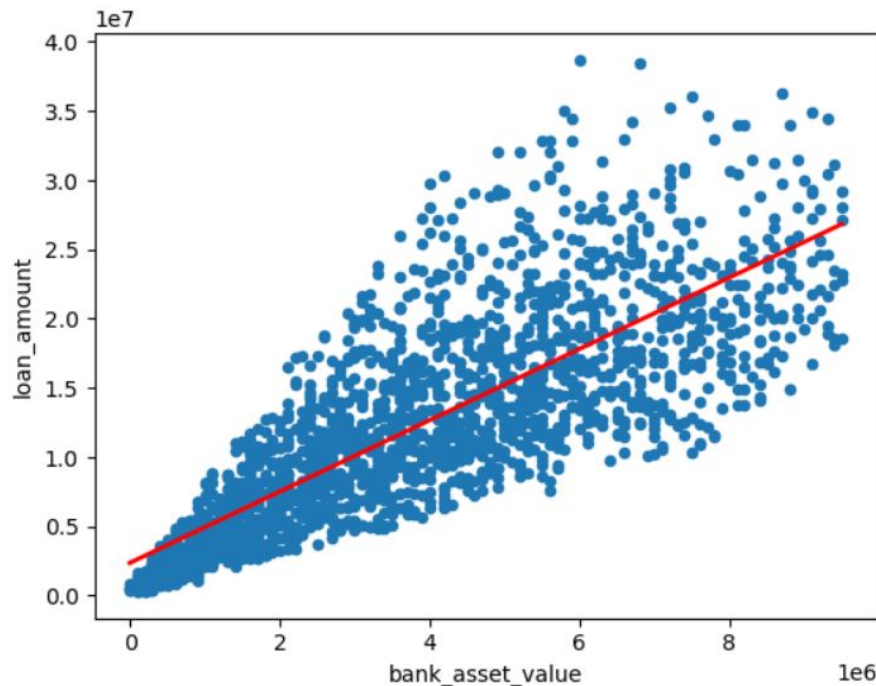
Conclusions

- High Income Salary
- Low Number of Dependents
- High Luxury Asset Value
- High Bank Asset Value

Thank You!

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