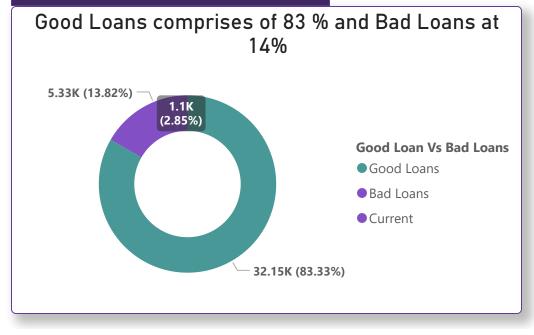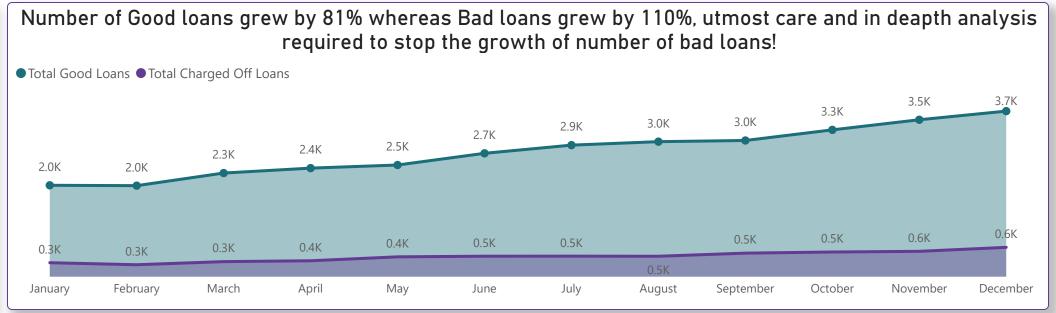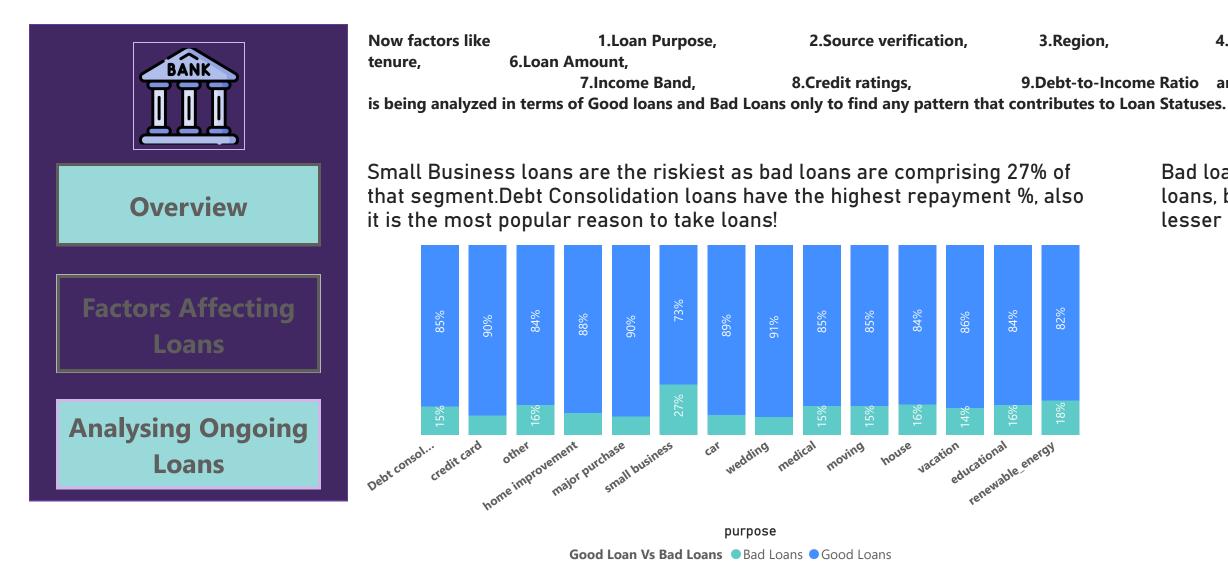# Bank Loan Analysis

This project analyses 38576 number of loans data from fictious bank in the UK. It provides overview of the KPIs such as No of Total Loans, no of good loans and no of ongoing loans, DTI % etc. Then it shows how various factors affect the good loans and the bad loans and tries to find patterns. Then using the insights from the factors affecting the bad loans , it analyses the ongoing loans to categorize them in terms of risk.

Overview

Factors Affecting Loans

Analysing Ongoing Loans

TOTAL LOAN APPLICATIONS
38.58K

TOTAL REPAID LOANS	TOTAL CHARGED OFF LOANS	TOTAL ONGOING LOANS
32K	5333	1098

TOTAL LOAN AMOUNT
436M

TOTAL LOAN REPAYMENT AMOUNT	TOTAL CHARGED OFF LOSS	AVERAGE DTI
473M	28M	13.33%

Good Loans comprises of 83 % and Bad Loans at 14%

5.33K (13.82%)
1.1K (2.85%)
32.15K (83.33%)

Good Loan Vs Bad Loans
- Good Loans
- Bad Loans
- Current

Number of Good loans grew by 81% whereas Bad loans grew by 110%, utmost care and in deapth analysis required to stop the growth of number of bad loans!

● Total Good Loans ● Total Charged Off Loans

Total Good Loans: January 2.0K, February 2.0K, March 2.3K, April 2.4K, May 2.5K, June 2.7K, July 2.9K, August 3.0K, September 3.0K, October 3.3K, November 3.5K, December 3.7K

Total Charged Off Loans: January 0.3K, February 0.3K, March 0.3K, April 0.4K, May 0.4K, June 0.5K, July 0.5K, August 0.5K, September 0.5K, October 0.5K, November 0.6K, December 0.6K

Now factors like tenure, 1.Loan Purpose, 2.Source verification, 3.Region, 4.Loan Term, 5.Employment 6.Loan Amount, 7.Income Band, 8.Credit ratings, 9.Debt-to-Income Ratio and 10. Home Ownership is being analyzed in terms of Good loans and Bad Loans only to find any pattern that contributes to Loan Statuses.

Small Business loans are the riskiest as bad loans are comprising 27% of that segment.Debt Consolidation loans have the highest repayment %, also it is the most popular reason to take loans!

Bad loans are 150% higher in longer term loans, but long term loans are also 67% lesser in numbers than short term loans.

Good Loan Vs Bad Loans ● Bad Loans ● Good Loans
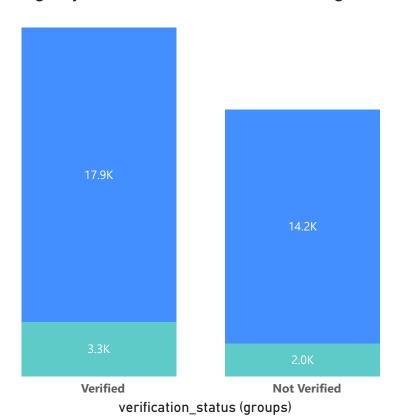

Wales is the top contributor in bringing customers to take loans and bad loans are 14% of its total loan portfolio. The highest bad loan contribution stands at 18% in the West midlands region.

Good Loan Vs Bad Loans ● Bad Loans ● Good Loans

Verified customers comprises around 60 % of the customer base, which suggests more efforts in customer verification, although bad loans are 12% of the unverified customer loan segment which is slightly lower than the verified segment!
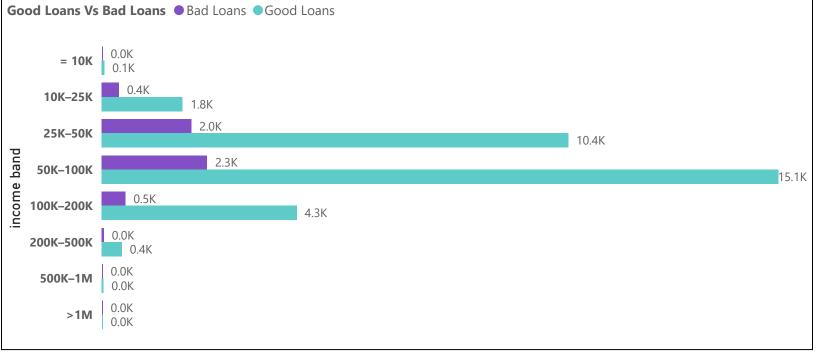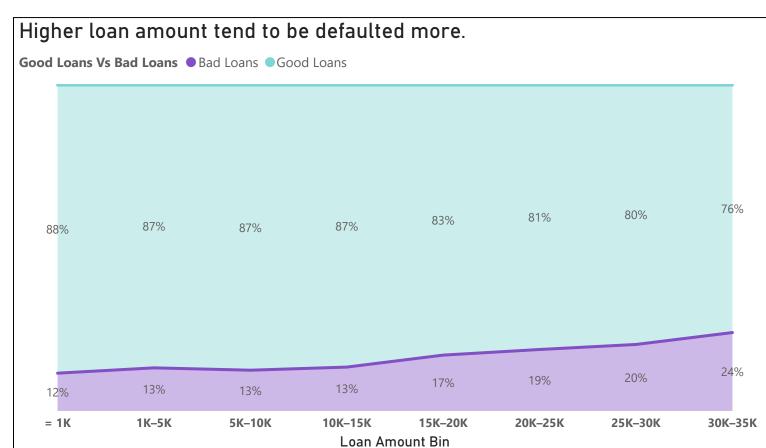
Good Loan Vs Bad Loans ● Bad Loans ● Good Loans

Higher income group customers tend to fully repay loans. 500k-1M who contributes not even 1% though seem to have a high bad loans % may not be the exception. Most loan taking customers seem to in the 25K to 200K bucket.

Good Loans Vs Bad Loans ● Bad Loans ● Good Loans

Higher loan amount tend to be defaulted more.

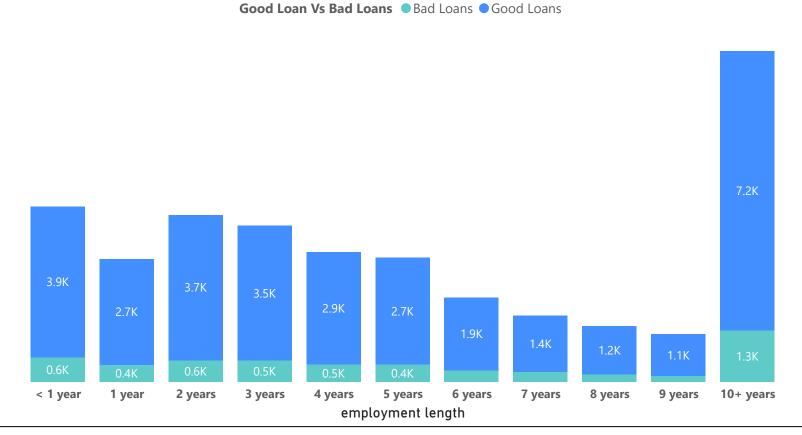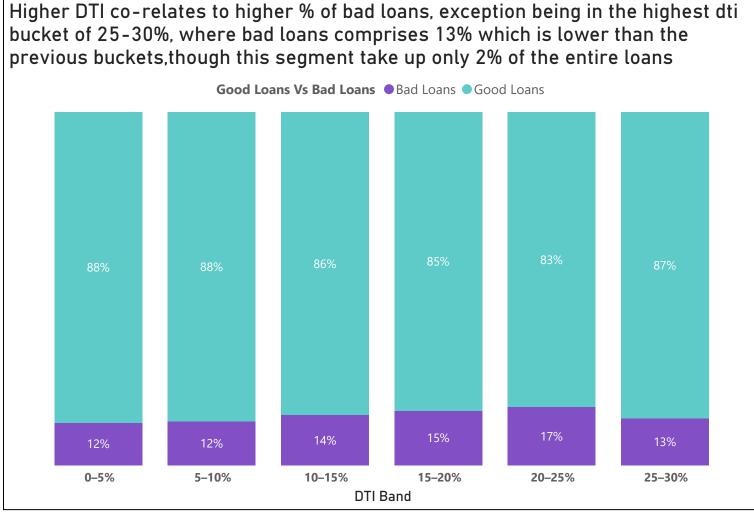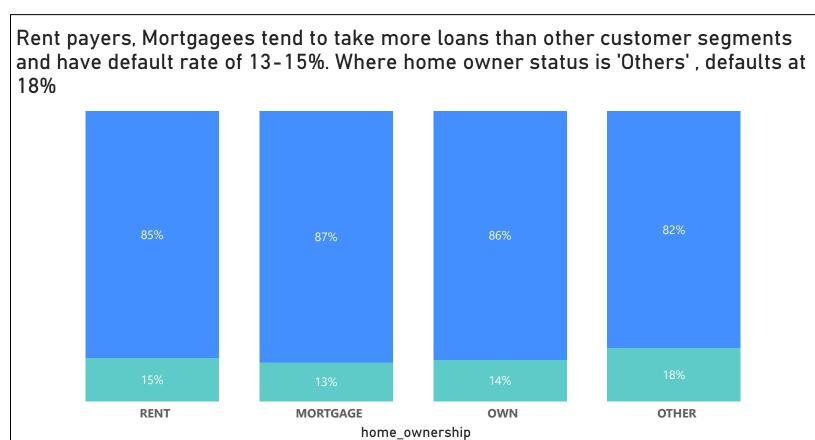**Good Loans Vs Bad Loans** ● Bad Loans ● Good Loans

Bad loans % ranges between 13-15% across all the customers, however customers with 10+ years in employment has 16% bad loans. But this 10 + years segment also has the highest loan takers

Good Loan Vs Bad Loans ● Bad Loans ● Good Loans

Higher DTI co-relates to higher % of bad loans, exception being in the highest dti bucket of 25-30%, where bad loans comprises 13% which is lower than the previous buckets,though this segment take up only 2% of the entire loans

Good Loans Vs Bad Loans ● Bad Loans ● Good Loans

Rent payers, Mortgagees tend to take more loans than other customer segments and have default rate of 13-15%. Where home owner status is 'Others' , defaults at 18%

Credit Rating is a clear indicator of loan defaulting probability, here we can see bad credit rating clearly relating to higher bad loans %.

Good Loan Vs Bad Loans ● Bad Loans ● Good Loans

Now, based on the observations of the Good and Bad Loans, the ongoing loans are monitored based on several factors.

• Credit Rating being an important indicator, are marked for easier monitoring.
• Home ownership, though not a strong indicator, still flagged based on historical data.
• Higher DTI band corelates to higher bad loans.
• The midlands having a higher bad loans rate are flagged.

• Small businesses contributing to a large % in bad loans, are being flagged.
• Caution should be taken for lower income group customer segment.

• Employees with more than 10 years of employment tend to have slightly higher default rate than the usual.
• Higher loan amounts tends to default more, hence flagged.

member_id	loan_status	annual_income	emp_length	home_ownership	credit_rating	verification_status	Sum of loan_amount	Sum of dti	purpose	term	region
1278153	Current	31,200.00	3 years	MORTGAGE	B	Source Verified	15250	26.62%	Debt consolidation	60 months	East Midlands
1261914	Current	38,000.00	3 years	MORTGAGE	CCC	Not Verified	15000	11.40%	Debt consolidation	60 months	East Midlands
1229794	Current	38,400.00	4 years	OWN	AA	Verified	25000	22.47%	credit card	60 months	East Midlands
1091973	Current	40,000.00	2 years	RENT	BBB	Verified	20000	18.69%	credit card	60 months	East Midlands
985185	Current	42,000.00	3 years	MORTGAGE	B	Not Verified	12000	13.29%	Debt consolidation	60 months	East Midlands
1249198	Current	43,500.00	< 1 year	RENT	AAA	Source Verified	6600	0.41%	wedding	60 months	East Midlands
1275807	Current	45,000.00	10+ years	RENT	CCC	Verified	22000	15.81%	Debt consolidation	60 months	East Midlands
1044713	Current	47,000.00	4 years	RENT	AA	Verified	20000	24.77%	Debt consolidation	60 months	East Midlands
989965	Current	48,000.00	8 years	MORTGAGE	AAA	Not Verified	12200	21.52%	Debt consolidation	60 months	East Midlands
1262733	Current	50,000.00	2 years	RENT	BB	Verified	19075	22.75%	Debt consolidation	60 months	East Midlands
990564	Current	55,000.00	9 years	MORTGAGE	BBB	Source Verified	15000	8.09%	credit card	60 months	East Midlands
1106615	Current	55,000.00	2 years	MORTGAGE	BBB	Verified	24000	19.68%	small business	60 months	East Midlands
981469	Current	56,004.00	8 years	RENT	A	Not Verified	1500	19.63%	other	60 months	East Midlands
1261726	Current	59,000.00	10+ years	RENT	A	Not Verified	15000	11.33%	Debt consolidation	60 months	East Midlands
991757	Current	60,000.00	10+ years	MORTGAGE	B	Verified	22400	14.54%	Debt consolidation	60 months	East Midlands
1097262	Current	63,000.00	10+ years	MORTGAGE	CCC	Verified	24700	19.14%	Debt consolidation	60 months	East Midlands
967982	Current	68,400.00	1 year	MORTGAGE	BB	Verified	5000	25.56%	car	60 months	East Midlands
1290751	Current	69,000.00	4 years	MORTGAGE	B	Verified	35000	9.41%	home improvement	60 months	East Midlands
1163191	Current	70,000.00	10+ years	MORTGAGE	B	Not Verified	15000	14.83%	Debt consolidation	60 months	East Midlands
1079804	Current	70,800.00	7 years	MORTGAGE	BB	Not Verified	7500	7.78%	car	60 months	East Midlands
1062910	Current	73,328.76	10+ years	RENT	BBB	Verified	25000	19.69%	Debt consolidation	60 months	East Midlands