

HOME LOANS CASE STUDY REPORT

OVERVIEW :-

- This project involves an end-to-end analysis of **home loan applicants**.
- The goal of the analysis is to evaluate risk distribution, measure operational performance, and highlight areas **where** the business is performing well or requires strategic improvement.
- Overall, this analysis supports **data-driven decision-making** for customer targeting, product bundling, risk management, and branch/channel optimization.

KEY FINDINGS :-

Customer Demographics

- **Gender Distribution:**

Customer base is nearly evenly split among :-

- Male (8382),
- Female (8489),
- Third Gender (8365).

However, **males apply for slightly higher loan amounts on average (9.80)**.

- **Occupation Distribution:**

Majority of applicants are **Salaried (14,228)** compared to Business (11,008).

- **Age Group Spread:**

Largest applicant groups fall in **26–32 (8482)** and **44–55 (4270)** age brackets, indicating strong demand from both early-career and mid-career individuals.

- **Salary Bracket Spread:**

Applicants are distributed evenly across income ranges, with slightly higher representation in **15–25 LPA** and **25+** brackets.

Loan Application Analysis

- **Average Loan by Occupation:**
Business customers (9.75) request slightly higher loans than Salaried customers (9.69).
- **Distribution of Applied Loan Amounts:**
Min = 1, Max = 24, Avg = 9.72, Total Loan Amount = 25236.
- **Applications Over Years:**
Applications remained stable from **2017 to 2019 (8361 → 8469)**.
- **Most Popular Application Channel:**
Online (8489 applications) is the most popular channel of applications.
- **Most Selected Product:**
Loans + Individual Insurance (6428 applications) are the most selected products.

Sanction and Disbursal Analysis

- **Sanction Rate:**
Sanction Rate is **100%** across all applications.
- **Sanction vs Applied Difference:**
On average, sanctioned amount is **1.29% lower** than applied amount.
- **Average Disbursed Amount by Product:**
The average disbursed amount for each product is shown below :-

	Products	Avg_Dibursed_Amount
▶	Loans + Group Insurance	Rs.7.82
	Loans + Top-up	Rs.7.81
	Loans	Rs.7.81
	Loans + Individual Insurance	Rs.7.59

- **Branch with Highest Disbursed Amount:**
Mumbai Branch has the highest disbursed amount of **Rs.13906.55**.

Recovery Analysis

- **Distribution of Delinquency Months:**

Spread is relatively uniform across

- 30 Days
- 60 Days
- 90 Days
- 6 Months
- 12 Months
- 24+ Months

with counts between **2700–2840** per segment.

- **Total Recovery by Branch:**

	Branch Name	Total_Recovery_Amount
►	Gandhinagar	Rs.7320.06
	Bengaluru	Rs.7262.95
	Bhopal	Rs.7225.02
	Shillong	Rs.7202.08
	Mumbai	Rs.7158.96
	Delhi	Rs.7073.72
	Nasik	Rs.7061.22
	Chandigarh	Rs.6899.62
	Jaipur	Rs.6889.76
	Srinagar	Rs.6813.25
	Chennai	Rs.6776.17
	Ranchi	Rs.6647.83
	Aurangabad	Rs.6639.16
	Nagpur	Rs.6632.14
	Pune	Rs.6607.83

Gandhinagar brach had a highest recovery amount of **Rs.7.3K**

- **Sanctioned vs Recovery Relationship:**

The average **sanction amount** was **Rs 8.41**,

The average **recovery amount** was **Rs 6.22**

- **Average Recovery by Delinquency Duration:**

Highest early recovery seen in **30 Days (6.32)** and gradually reduces to **24+ Months (6.07)**.

Branch and Channel Performance

- **Branch with Most Applications:**

Mumbai branch has the most applied loan applications i.e **1764 applications**.

- **Channel Performance:**

The Channel Performance is shown as below :-

	channels	No_Of_Applications	Sanctioned_Amount	Recovery_Amount
►	Direct Sales Aency	4090	Rs.34769.4	Rs.23240.26
	Online	5657	Rs.53719.7	Rs.33019.67
	Walk-In	4173	Rs.35322.8	Rs.24066.99
	Tie Ups	2794	Rs.17922.4	Rs.16095.1

- **Branch with Highest Delinquency Count:**

Gandhinagar branch has the highest delinquency count of **1145 accounts**.

- **Geographical Distribution:**

The geographical distribution of the branches are shown as :-

	Branch Name	Branch Longitude	Branch Latitute
►	Mumbai	72.836	18.987
	Pune	73.856	18.516
	Nasik	73.776	19.999
	Delhi	77.231	28.751
	Bengaluru	77.587	12.977
	Bhopal	77.402	23.254
	Chennai	80.248	13.084
	Jaipur	75.787	26.912
	Aurangabad	75.343	19.876
	Nagpur	79.088	21.145
	Chandigarh	76.779	30.733
	Srinagar	74.797	34.083
	Shillong	91.893	25.578
	Gandhinagar	72.636	23.215
	Ranchi	85.309	23.344

Product Performance

- **Most Profitable Product by Sanctioned Value:**

Loans + Group Insurance is the most profitable package/product based on sanction value of total **Rs.54131**.

- **Avg Applied, Sanctioned & Disbursed per Product:**

	products	Avg_Applied_Loan_Amount	Total_Sanctioned_Amount	Total_Disbursed_Amount
▶	Loans + Group Insurance	9.78	Rs.54131	Rs.49801.58
	Loans + Individual Insurance	9.51	Rs.53001.3	Rs.48762.51
	Loans + Top-up	9.80	Rs.53193.9	Rs.48939.26
	Loans	9.78	Rs.52405	Rs.48213.55

- **Highest Delinquency Rate:**

It was found that the **Loans** had a highest delinquency rate of **66.90%**.

	Products	delinquency_rate
▶	Loans	66.90%
	Loans + Group Insurance	66.24%
	Loans + Individual Insurance	66.29%
	Loans + Top-up	66.35%

Time Series Analysis

- **Yearly Application Trend:**

It was observed that the loan applications steadily rose from year 2017 to year 2019.

- **Monthly Seasonality:**

Peaks vary yearly (e.g., **2017-Aug, 2018-Sept/May, 2019-July**).

The Loan applications varies as :-

	Years	Months	Loan_Applications
▶	2017	August	743
	2018	May	745
	2019	July	836

Customer Segmentation & Behavior

- **Delinquency by Gender:**
Female (66.87%), Male (66.17%), Third Gender (66.29%) — **no major difference.**
- **Delinquency by Age Group:**
Highest delinquency of **67.56%** is seen in the age group of **44–55 Yrs.**
- **Delinquency by Occupation:**
Nearly identical between **Business (66.42%)** and **Salaried (66.46%).**
- **Delinquency by Salary:**
Rates vary only slightly across bands (65–67%).
- **Product Preference by Occupation:**
 - **Salaried** → Loans + Individual Insurance
 - **Business** → Loans + Group Insurance.
- **Channel-wise Avg Loan Applied:**
Highest (10.53) average loan was applied through **Online** channel.
- **Channel-wise Delinquency:**
Delinquency is very similar across all the channels
- **Product-wise Delinquency:**
 - Highest in **Loans** (66.90%)
 - lowest in **Loans + Group Insurance** (66.24%).
- **Time to First Delinquency (Branch-level):**

	Branch Name	Avg_Time_First_delinquency
▶	Bhopal	34.39 Days
	Aurangabad	29.86 Days
	Nagpur	29.86 Days
	Jaipur	29.84 Days
	Mumbai	28.40 Days
	Ranchi	27.62 Days
	Bengaluru	25.82 Days
	Pune	25.23 Days
	Nasik	23.96 Days
	Chennai	21.54 Days

	Srinagar	16.50 Days
	Delhi	15.86 Days
	Gandhinagar	10.48 Days
	Shillong	10.45 Days
	Chandigarh	8.36 Days

Operational & Business Findings

- **High-Value Loans Concentration:**

High value loans are mostly concentrated in **Mumbai** and **Bengaluru** branches.

- **Geographic Delinquency Pattern:**

	Branch Name	Branch Longitude	Branch Latitude	delinquency
▶	Gandhinagar	72.636	23.215	1145
	Bhopal	77.402	23.254	1134
	Bengaluru	77.587	12.977	1162
	Pune	73.856	18.516	1070
	Mumbai	72.836	18.987	1162
	Delhi	77.231	28.751	1135
	Srinagar	74.797	34.083	1091
	Aurangabad	75.343	19.876	1105
	Shillong	91.893	25.578	1148
	Nagpur	79.088	21.145	1105
	Chennai	80.248	13.084	1114
	Nasik	73.776	19.999	1127
	Ranchi	85.309	23.344	1086
	Jaipur	75.787	26.912	1106
	Chandigarh	76.779	30.733	1077

Cross-Selling and Upselling Analysis

- **Bundled Product Adoption Rate:**

75.55% customers choose bundled options.

- **Demographic Trends for Bundled Products:**

Highest adoption among **Salaried** and **Age 26–32**.

Financial Analysis

- **Profitability via Recovery-to-Disbursed Ratio:**

Loans + Top-up and Loans + Individual Insurance (0.81) are most profitable.

- **Fee/Buffer Difference Between Sanctioned and Disbursed:**

Roughly **0.66–0.68** across all product types, indicating consistent fee structure.
