<INTRODUCTION TO DATA MANAGEMENT>

PROJECT REPORT

(Project Semester January-April 2025)

(MUDRA LOAN ANALYSIS DASHBOARD)

Submitted by

(Gurveer Singh)

Registration No 12310286

Section K23SH

Course Code INT217

Under the Guidance of

(Aashima Bansal)

Discipline of CSE/IT

Lovely School of Computer Science & Engineering

Lovely Professional University, Phagwara

CERTIFICATE

This is to certify that Gurveer Singh bearing Registration no.12310286 has completed .INT217 project titled, **"Mudra Loans Analyze Dashboard"** under my guidance and supervision of Aashima Bansal. To the best of my knowledge, the present work is the result of his original development, effort and study.

Name of the Supervisor – Aashima Bansal
Designation of the Supervisor- Assistant Professor
School of Computer science & Engineering
Lovely Professional University
Phagwara, Punjab.

Date: 11 April 2025

DECLARATION

I, Gurveer Singh, student of Computer science & engineering under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 11 April 2025 Name of the student

Registration No. 12310286 Gurveer Singh

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my mentor and guide Aashima Bansal for their valuable guidance and support throughout this project. I am also thankful to Lovely Professional University for providing me with the platform and resources needed to complete this minor project. Lastly, I thank my peers and family for their encouragement.

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1. Introduction

In today's data-driven world, informed decision-making is essential for the success of government initiatives and financial inclusion programs. The **MUDRA (Micro Units Development and Refinance Agency) scheme**, launched by the Government of India, plays a crucial role in empowering micro and small enterprises by providing accessible financial support. To evaluate the impact and performance of this scheme, analyzing vast amounts of loan-related data is key.

This project focuses on building an **interactive Excel dashboard** that provides clear visual insights and meaningful analysis of the MUDRA loans dataset. The objective is to organize and interpret raw financial data to uncover trends, patterns, and key performance metrics related to loan disbursements, borrower demographics, employment generation, loan defaults, and geographic distribution. Through this dashboard, we aim to highlight the value of **data visualization in public policy evaluation and financial decision-making**, showcasing how well-structured insights can support better governance and improve outreach in the financial services sector.

2. Source of Dataset

The dataset used in this project was obtained from a personal source and was shared with me by my brother. It is in CSV format and titled 'Mudra_loans.csv'. The dataset contains detailed information about 1,05,000 loan records, covering various attributes such as loan disbursement amounts, borrower demographics, employment impact, loan defaults, bank names, and geographical details. The data spans multiple states and regions across India, offering a comprehensive overview of the financial assistance provided under the MUDRA scheme. This rich dataset serves as the foundation for building an insightful Excel dashboard that highlights key metrics, trends, and patterns related to microfinance distribution and its socio-economic impact.

3. Dataset Preprocessing

- Duplicate entries were identified and removed to avoid repetition and ensure the integrity of the loan data.
- Missing values and error entries were carefully checked and handled to maintain the accuracy and reliability of the dataset.
- The dataset was converted into Table format in Excel, allowing for easier filtering, sorting, and data analysis.
- The number of unique states and borrower cities was counted to understand the geographical distribution of MUDRA loans across the country.

4. Analysis on Dataset

i. General Description

The analysis was carried out in **Microsoft Excel** using various tools such as **PivotTables, slicers, charts, and conditional formatting** to explore and visualize the loan data from the **Mudra_loans.csv** dataset. These tools helped in deriving meaningful insights and summarizing large volumes of data into an interactive and user-friendly dashboard.

ii. Specific Requirements and Analysis Results

1. Overview Dashboard

The main dashboard presents an overview of key performance indicators related to the **Top 10 banks by total loan amount disbursed**, **states with the highest number of beneficiaries**, and **loan approval distribution by type (Shishu, Kishor, Tarun if available)**.
It also showcases insights into the **average loan amounts**, **default trends**, and the **total number of jobs created and retained** under the MUDRA scheme.

2. Trend Analysis

- **Bar and column charts** were used to display the **top states and cities** based on the number of loans approved and total disbursement value.
- **Line charts** were used to visualize **year-wise trends** in loan disbursement and commitment.
- A **pie chart** illustrates the **distribution of borrowers by demographic group** (e.g., Urban vs. Rural).
- **Slicers and filters** were added for **State, Year of Commitment, Bank Name, and Loan Type** to enable interactive, dynamic exploration of the data.

iii. Visualization

All visualizations were developed using **Excel's built-in charting tools**. Additional **conditional formatting** was applied to highlight important KPIs, such as **high-default areas**, **top-performing banks**, and **states with strong employment impact**, improving both the readability and insightfulness of the dashboard.

5. Conclusion

This project demonstrated how Microsoft Excel can be effectively utilized for the analysis and visualization of financial data using the MUDRA loans dataset. By leveraging Excel tools such as PivotTables, slicers, charts, and conditional formatting, an interactive dashboard was developed to deliver meaningful insights into loan disbursements, borrower demographics, default patterns, employment generation, and geographic distribution of loans.

This kind of dashboard not only supports data-driven decision-making for policymakers and financial institutions but also showcases the practical application of data management and visualization concepts in evaluating the effectiveness of large-scale government schemes like MUDRA.

6. Future Scope

Future enhancements of this project could include integrating the Excel-based dashboard with Power BI for real-time tracking and visualization of loan disbursements, defaults, and employment impacts. Additionally, tools like Python and machine learning models can be employed to predict default risks, estimate the potential impact of future loans, and analyze loan distribution patterns across different states and borrower demographics.

Expanding the dataset to include more granular information such as borrower income levels, repayment history, and loan utilization could further enrich the analysis. These enhancements would support advanced financial forecasting, policy evaluation, and improve the effectiveness of decision-making for stakeholders involved in the MUDRA scheme.

7. References

[1] Personal Communication – **MUDRA loans dataset** shared by my brother for academic and analytical purposes. The dataset was provided in **.csv format** to support this project.

[2] Microsoft Support, "**Excel functions (by category),**" [Online]. Available: https://support.microsoft.com/en-us/office/excel-functions-by-category-5f91f4e9-7b42-46d2-9bd1-63f26a86c0eb

[3] Microsoft Support, "**Create a PivotTable to analyze worksheet data,**" [Online]. Available: https://support.microsoft.com/en-us/office/create-a-pivottable-to-analyze-worksheet-data-a9a84538-bfe9-40a9-a8e9-f99134456576

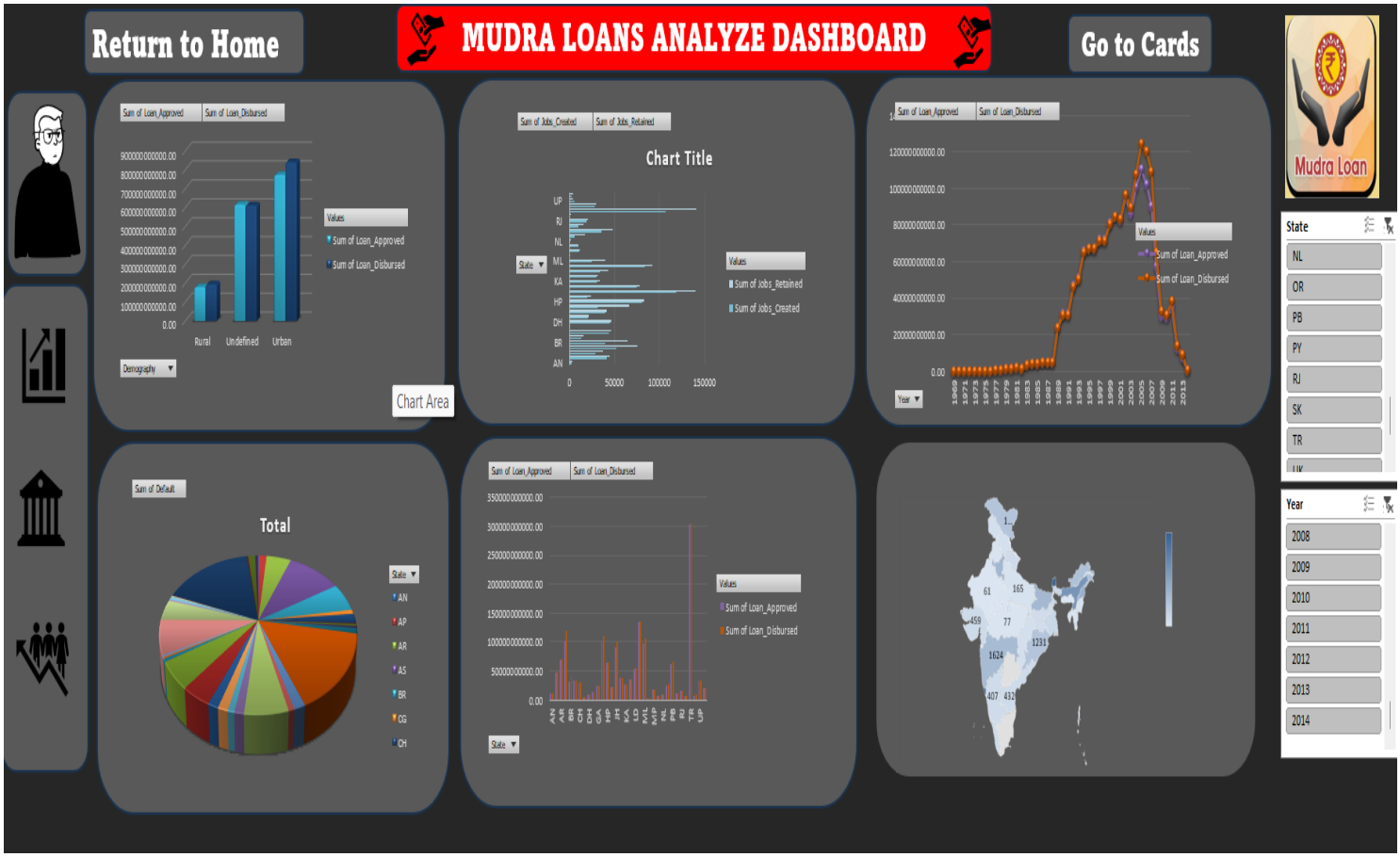
8. Linked In post - https://www.linkedin.com/posts/gurveer-singh-184627283_exceldashboard-mudraloan-dataanalytics-activity-7316535422887567360-QJMW?utm_source=share&utm_medium=member_desktop&rcm=ACoAAEfSo3gBuiqHgIvlEUFQqUQcH5z0-B996-s

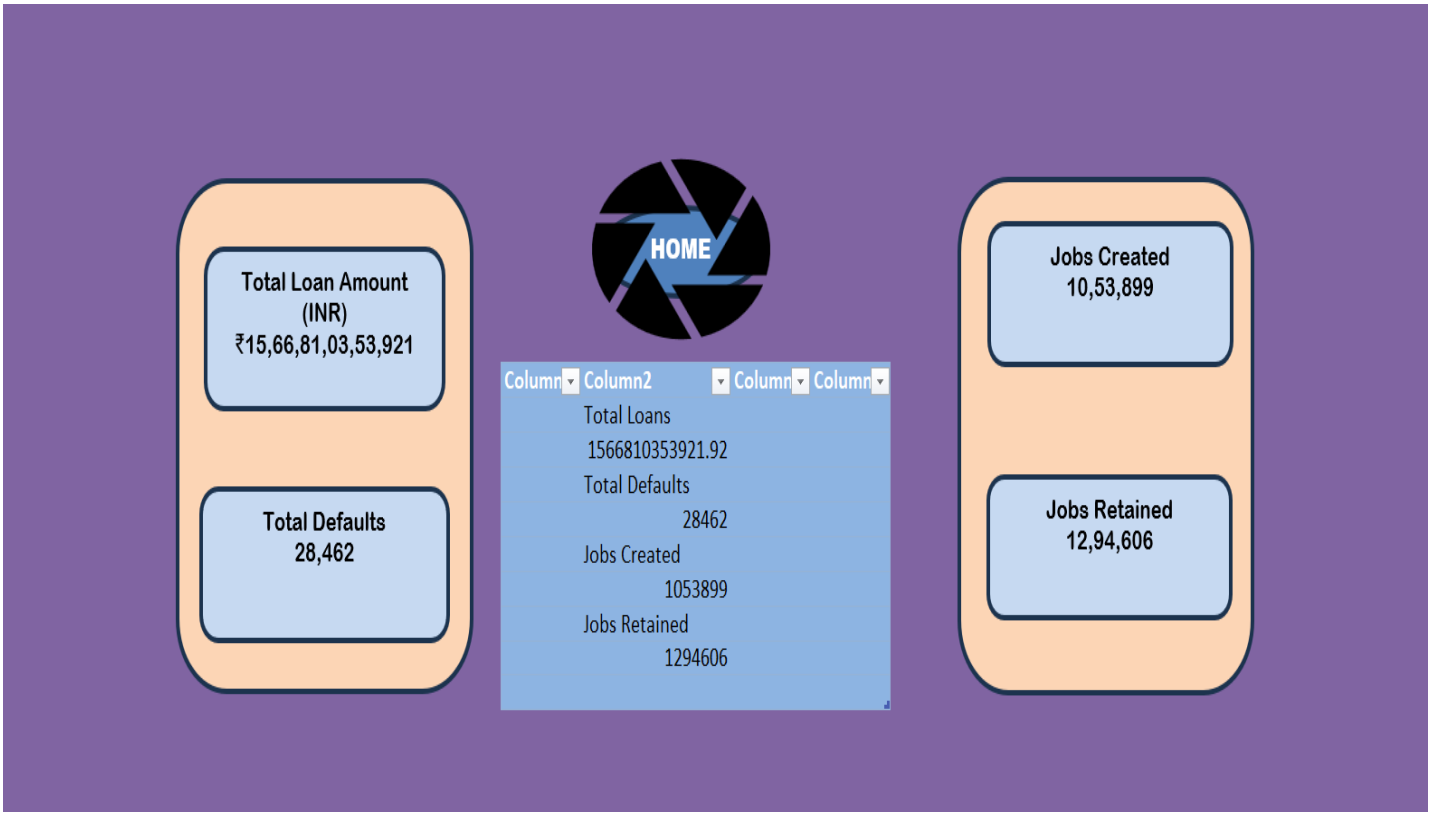
DASHBOARD

LOVELY PROFESSIONAL UNIVERSITY

MUDRA LOAN ANALYSIS

Click here for Dashboard




Total Loan Amount (INR) ₹15,66,81,03,53,921
Total Defaults 28,462
HOME
Column Column2 Column Column
Total Loans
1566810353921.92
Total Defaults
28462
Jobs Created
1053899
Jobs Retained
1294606
Jobs Created 10,53,899
Jobs Retained 12,94,606

OBJECTIVES

1) Loan Distribution Analysis

Sum of Loan_Approved	Sum of Loan_Disbursed
2210816.00	2210816.00
17650764.80	17650764.80
42509440.00	42509440.00
60309760.00	60309760.00
133868160.00	124927360.00
149717760.00	137117490.56
76809600.00	76809600.00
158739840.00	158739840.00
277164800.00	277164800.00
739676448.00	733580285.44
1086721728.00	1067600120.32
1320515194.88	1314992462.72
1684712912.00	1676713253.12
1379427264.00	1371166371.20
3313395456.00	3284797494.40
4348982472.96	4289010268.80
4122602880.00	4083392839.04
5036324192.00	5012255639.68
4930430982.40	4904668880.00
5046933426.56	5024513557.76
23710768163.84	23477179685.12
31021528000.00	30623862511.36
31236058513.28	30868484993.92
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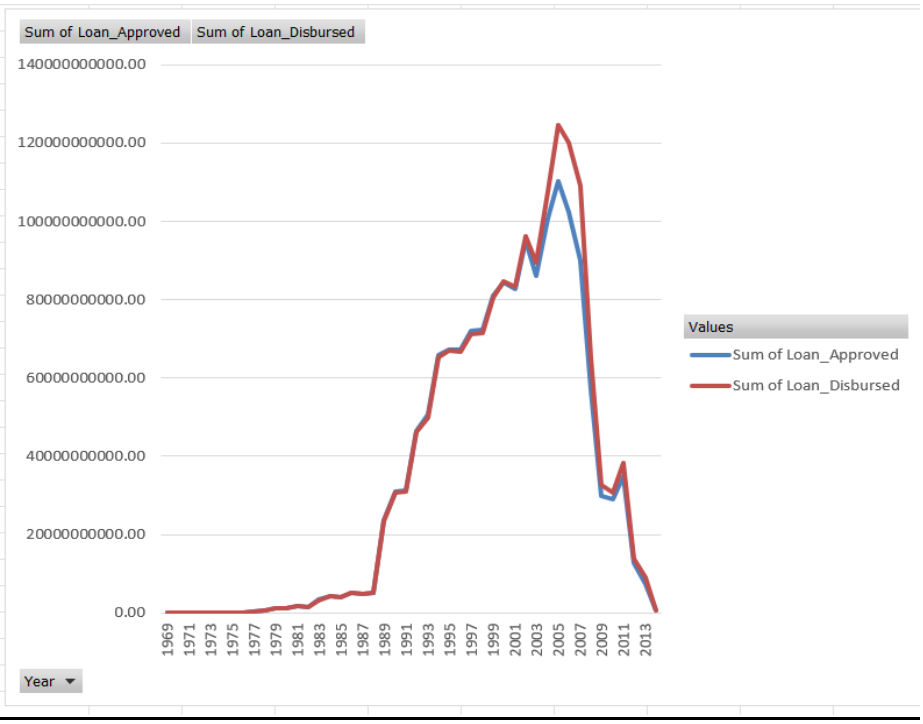
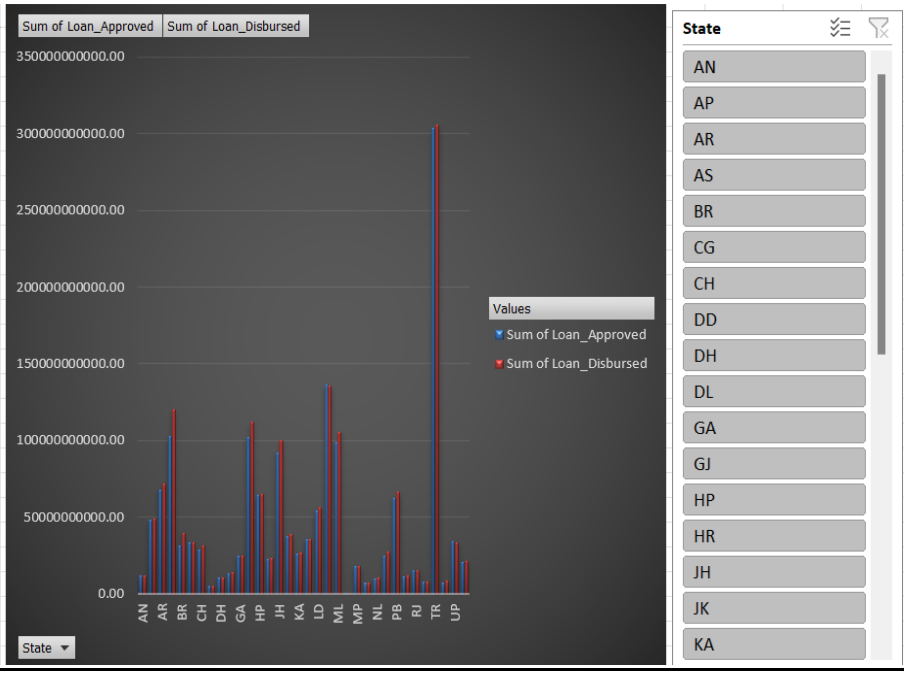


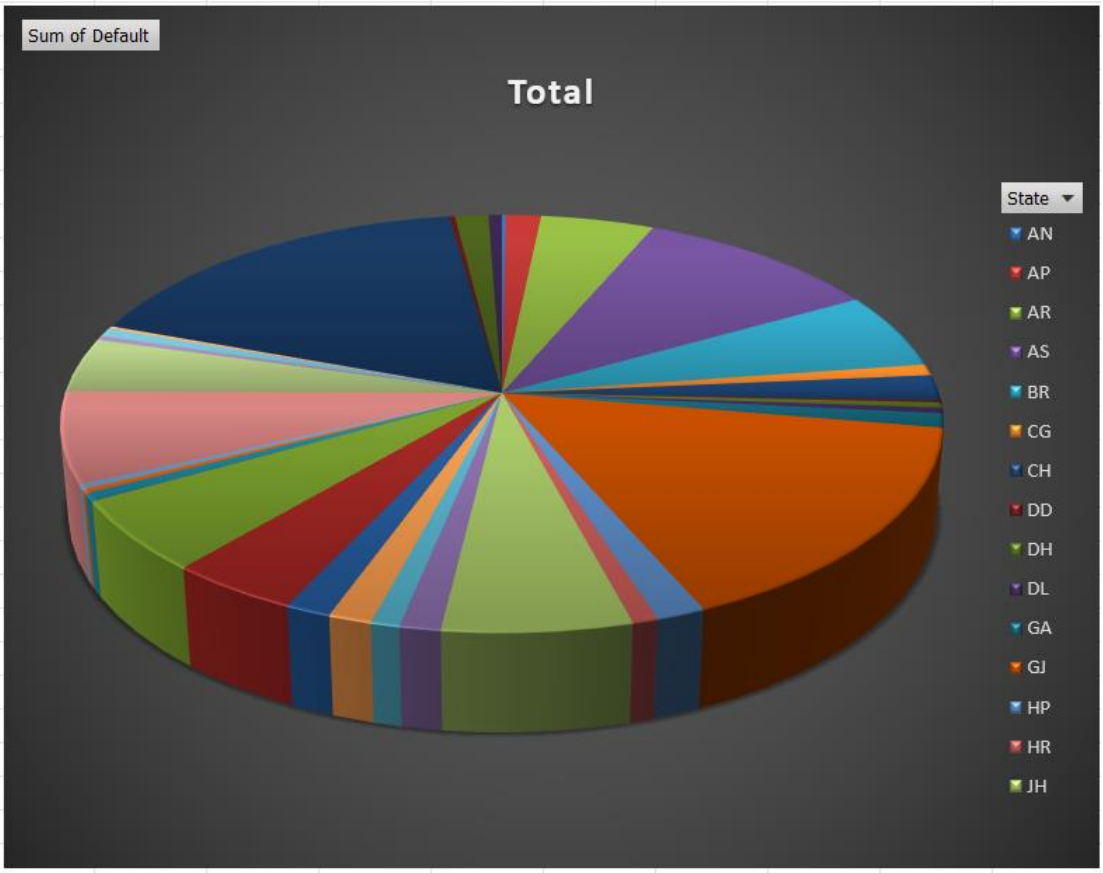
2) Loan Approval & Rejection Trends

State	Sum of Loan_Approved	Sum of Loan_Disbursed
AN	11653873568.00	11663843697.92
AP	47803161614.72	48992784310.40
AR	67838028123.52	71763424265.60
AS	102726447978.24	119791821376.00
BR	31125619475.84	39685217576.32
CG	33127006095.36	33627843295.36
CH	28730091343.36	31541199401.60
DD	5134437767.68	5195784579.20
DH	10272479409.28	10212654890.88
DL	13255303253.12	14083101038.72
GA	24773405571.20	24849600531.84
GJ	101926063742.08	111779080398.72
HP	63918043603.84	65101365067.52
HR	22671989118.72	23509196527.36
JH	91866396586.88	99756381761.92
JK	37315469427.84	38481030723.84
KA	26058514466.56	26918025513.60
KL	35435006965.76	35389862021.76
LD	54442088118.40	56141655925.76
MH	136018899107.20	135202581227.52
ML	98542818204.80	105380652961.92
MN	427870112.00	423875200.00
MP	17801911787.52	17986456158.08
MZ	7183522417.28	7262950208.64
NL	10126615621.76	10252913768.96
OR	24870485752.96	27555851944.32



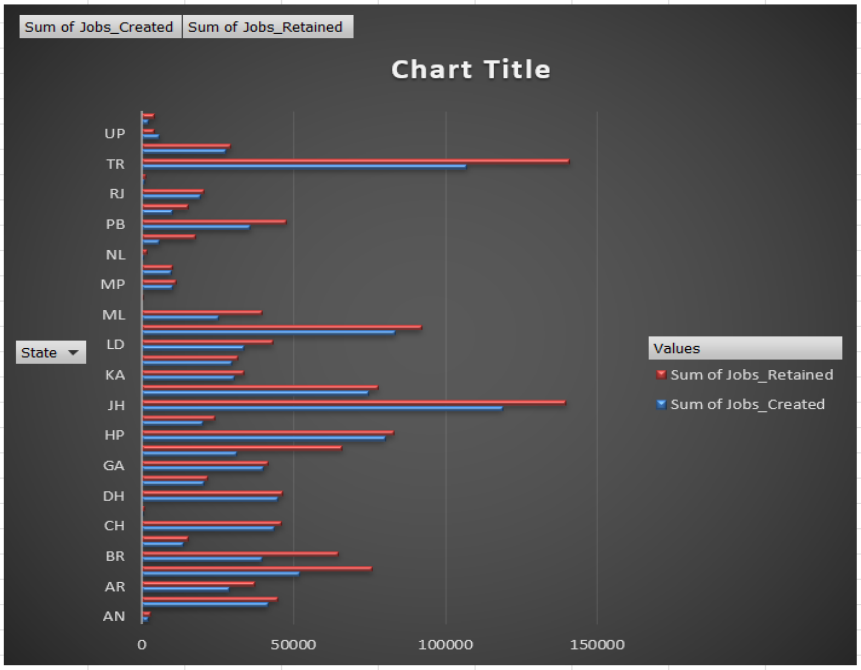
3) Default Risk Analysis

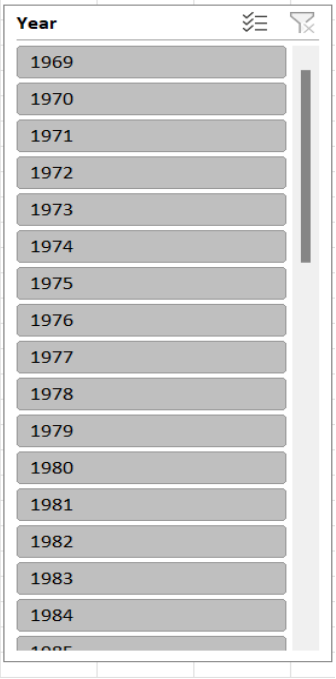
State	Sum of Default
AN	48
AP	432
AR	1393
AS	3027
BR	1714
CG	251
CH	575
DD	49
DH	120
DL	121
GA	321
GJ	4594
HP	459
HR	240
JH	1765
JK	383
KA	269
KL	407
LD	427
MH	1227
ML	1624
MN	8
MP	169
MZ	77
NL	117



4) Job Creation & Impact

Sum of Jobs_Retained
2907
44709
37356
75698
64861
15467
46143
949
46415
21799
41504
66023
83043
23976
139744
77724
33701
31648
43045
92094
39617
19
11203
10098
1622
17530





5) Demographic Insights

Demography	Sum of Loan_Approved	Sum of Loan_Disbursed
Rural	178507056183.04	192544683256.32
Undefined	615809845075.84	610227221829.12
Urban	772493452663.04	839299692390.40
Grand Total	**1566810353921.92**	**1642071597475.84**