FINAL PROJECT REPORT

Operational Bottleneck & Risk Analysis

Mission YUVA Skilling-to-Credit Pipeline

Sector:
Banking and Financial Services

Dataset:
Mission YUVA Credit Flow
Dataset (Kaggle)

Institute:
Newton School of Technology

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1. Executive Summary

This report presents a structured analysis of operational and financial data from the Mission YUVA credit pipeline to identify bottlenecks, risk drivers, and performance gaps in the skilling-to-credit ecosystem. The dataset consists of 9,000 credit applications with operational stage timelines, financial indicators, credit risk scores, and repayment outcomes.

All figures in this report are derived directly from the Cleaned_Dataset and the pivot tables produced from it — including the Funnel, Stage-Level Delay, District TAT, Sector TAT, EMI Burden, Gender Repayment, Enterprise Type, Disability Loan Amount, and District Gender Disbursement pivot tables.

Key Findings at a Glance

9,000	186.3 Days	64.1 Days	466 Apps
Total Applications	Avg. Total TAT	Bank Sanction Delay (Avg)	Sanction–Disbursement Gap
30.36%	**1,457**	**1,916 (21.3%)**	**₹186.2 Cr**
High-Risk Applicants (≥70)	Default Count	Overdue >30 Days	Total Loan Portfolio

Key Findings Summary

- Average Total TAT: 186.3 days (Source: DistrictTAT_PivotTable — Grand Total average)
- Bank Sanction: the largest single bottleneck at 64.1 days average, accounting for 34.4% of total TAT
- Pipeline Funnel: 9,000 initiated → 1,764 disbursed = only 19.6% end-to-end conversion (Source: Funnel_PivotTable)
- Sanction–Disbursement Gap: 2,230 sanctioned − 1,764 disbursed = 466 applications pending release
- Default Rate: 1,457 out of 9,000 = 16.19%; among those with repayment status, 29.1% defaulted
- High-Risk Applicants (Risk Score ≥ 70): 2,732 = 30.36% of total pool
- Total Loan Portfolio: ₹18,619,228,179 (~₹186.2 Crore) across all enterprise types (Source: EnterpriseType_PivotTable)
- Median Loan Amount across all disability categories: ₹1,928,968.50 (Source: DisabilityLoanAmount_PivotTable)

2. Sector & Business Context

The banking and financial services sector operates within a risk-sensitive environment where operational efficiency directly impacts portfolio quality and institutional sustainability. Mission YUVA

serves first-time and underserved borrowers across 20 districts of Jammu & Kashmir — spanning urban and rural areas, multiple disability categories, and diverse enterprise types.

Mission YUVA Pipeline Stages (Avg. Days — from Cleaned_Dataset)

- BHD Verification: 19.9 days average
- SBDU Verification: 47.5 days average
- DLIC Approval: 31.7 days average
- Bank Sanction: 64.1 days average — CRITICAL BOTTLENECK
- Loan Disbursement: 23.6 days average

The overall TAT range (from Sector TAT pivot) spans from a minimum of 39 days to a maximum of 335 days, indicating extreme variability in pipeline experience across applicants. Only 19.6% of applicants (1,764 of 9,000) receive disbursement, pointing to systemic structural barriers beyond individual risk factors.

3. Problem Statement & Objectives

Problem Statement

How can operational and outcome data be used to identify bottlenecks, risk drivers, and performance gaps in the skilling-to-credit pipeline, in order to design bank-led financing models that are low-risk and outcome-linked?

Objectives

1. Identify stage-level bottlenecks using turnaround time analysis (StageLevelDelay_PivotTable, DistrictTAT_PivotTable, SectorTAT_PivotTable).
2. Develop structured risk segmentation based on Risk Score thresholds using the Cleaned_Dataset.
3. Analyze repayment stress using EMI burden (EMIBurden_PivotTable) and gender-based repayment behavior (GenderRepayment_PivotTable).
4. Evaluate equity access for specially-abled applicants (DisabilityLoanAmount_PivotTable).
5. Map geographic disbursement performance (DistrictGenderDisbursement_PivotTable, Funnel_PivotTable).
6. Recommend risk-controlled financing strategies linked directly to pivot-level findings.

4. Data Description

The Mission YUVA Credit Flow Dataset consists of 9,000 application records cleaned and structured across the Cleaned_Dataset tab, with 9 supporting pivot tables used for all analysis in this report.

Data Source	Records / Scope	Used For

Cleaned_Dataset	9,000 rows × 56 columns	Core KPIs, risk segmentation, EMI and overdue analysis
Funnel_PivotTable	9,000 → 1,764 (7 stages × 20 districts)	Pipeline conversion and drop-off analysis
StageLevelDelay_PivotTable	8 sectors × 7 stage flags	Stage-wise throughput by sector
DistrictTAT_PivotTable	20 districts, avg TAT per district	Geographic bottleneck mapping
SectorTAT_PivotTable	8 sectors, MAX and MIN TAT	Sector-level TAT range analysis
EMIBurden_PivotTable	8 sectors, avg EMI ratio + avg Risk Score	Repayment stress and sector risk profiling
GenderRepayment_PivotTable	4 gender groups × 5 repayment statuses	Gender-wise default and repayment behavior
EnterpriseType_PivotTable	4 enterprise types, count + total loan amount	Enterprise financing volume and distribution
DisabilityLoanAmount_PivotTable	5 disability types, count + median loan	Equity access analysis for vulnerable groups
DistrictGenderDisbursement_PivotTable	20 districts × 4 gender groups	Geographic + gender disbursement breakdown

5. Data Cleaning & Preparation

The raw dataset contained significant quality issues that were systematically resolved in the Cleaned_Dataset tab. Each original column was paired with a cleaned counterpart, preserving full auditability.

Issue	Description	Resolution
Mixed Currency	Loan Amount in $, ₹, abbreviated 'k INR' formats	Normalized to INR (1 USD = ₹90; 'k' expanded)
Inconsistent Dates	Multiple date formats + 'As on Feb 2026' text entries	Standardized to Month-Year (e.g. Jul 2023)
Missing Numerics	EMI Amount, Total TAT, Loan Tenure had significant nulls	Tagged 'NA' in cleaned columns; excluded from averages
Duplicate IDs	IDs 49, 63, 68, 81 appeared twice with different data	Both entries retained; flagged for review
Inconsistent Text	Gender: male/Male/FEMALE; Status: ONTIME/On-time/late	Standardized to Male/Female/Other/NA; On-Time/Late/Delayed/Default
Missing Categoricals	Blank Enterprise Type, Sector, Gender entries	Filled with 'NA' in cleaned columns

Feature Engineering

- Risk Category bands applied to Clean Risk_Score: Low (0–40) = 3,355 | Medium (41–69) = 2,457 | High (70–100) = 2,732
- Overdue Flag: Days_Overdue > 30 → 1,916 applicants flagged (21.3%)
- EMI Burden Category: derived from Clean EMI_to_Income_Ratio for EMIBurden_PivotTable

6. KPI & Metric Framework

Every KPI below is sourced directly from either the Cleaned_Dataset computation or the corresponding pivot table.

KPI	Value	Source
Total Applications	9,000	Cleaned_Dataset row count
Avg. Total TAT	186.3 days	DistrictTAT_PivotTable — Grand Total
TAT Range (Min–Max)	39 – 335 days	SectorTAT_PivotTable — Grand Total MIN/MAX
Avg. BHD Verification	19.9 days	Cleaned_Dataset — mean of Cleaned Days_to_BHD
Avg. SBDU Verification	47.5 days	Cleaned_Dataset — mean of Cleaned Days_to_SBDU
Avg. DLIC Approval	31.7 days	Cleaned_Dataset — mean of Cleaned Days_to_DLIC
Avg. Bank Sanction	64.1 days	Cleaned_Dataset — mean of Cleaned Days_to_Bank_Sanction
Avg. Disbursement	23.6 days	Cleaned_Dataset — mean of Cleaned Days_to_Disbursement
Total Initiated	9,000	Funnel_PivotTable
Total Disbursed	1,764	Funnel_PivotTable
End-to-End Conversion	19.6%	1,764 / 9,000 (Funnel_PivotTable)
Sanction–Disbursement Gap	466	2,230 − 1,764 (Funnel_PivotTable)
Total Loan Portfolio	₹186.2 Crore	EnterpriseType_PivotTable — Grand Total SUM
Median Loan Amount	₹19,28,968.50	DisabilityLoanAmount_PivotTable — Grand Total MEDIAN
High-Risk Applicants (≥70)	2,732 (30.36%)	Cleaned_Dataset — Clean Risk_Score
Medium-Risk (41–69)	2,457 (27.30%)	Cleaned_Dataset — Clean Risk_Score
Low-Risk (≤40)	3,355 (37.28%)	Cleaned_Dataset — Clean Risk_Score
Default Count	1,457 (16.19%)	GenderRepayment_PivotTable — Grand Total Default
Late Count	1,538 (17.09%)	GenderRepayment_PivotTable — Grand Total Late

Delayed Count	1,475 (16.39%)	GenderRepayment_PivotTable — Grand Total Delayed
On-Time Count	1,537 (17.08%)	GenderRepayment_PivotTable — Grand Total On-Time
Overdue > 30 Days	1,916 (21.3%)	Cleaned_Dataset — Days_Overdue
Avg. EMI-to-Income Ratio	29.9%	EMIBurden_PivotTable — Grand Total avg
Avg. Risk Score	51.04	EMIBurden_PivotTable — Grand Total avg
Total Female Disbursed	605	DistrictGenderDisbursement_PivotTable
Total Male Disbursed	576	DistrictGenderDisbursement_PivotTable

7. Pipeline Funnel & Conversion Analysis

Source: Funnel_PivotTable. All figures are direct pivot values from your dataset.

Overall Pipeline Funnel

Stage	Count	Drop-off from Previous Stage	Cumulative Conversion
Initiated	9,000	—	100.0%
Submitted	8,440	560 (6.2%)	93.8%
SBDU Verified	6,495	1,945 (23.0%)	72.2%
DLIC Approved	5,731	764 (11.8%)	63.7%
BHD Verified	3,161	2,570 (44.8%)	35.1%
Bank Sanctioned	2,230	931 (29.5%)	24.8%
Bank Disbursed	1,764	466 (20.9%)	19.6%

District-Level Funnel (Top & Bottom 5 by Disbursement)

District	Initiated	Submitted	SBDU Verified	DLIC Approved	BHD Verified	Sanctioned	Disbursed
Reasi	456	434	334	300	166	123	102
Doda	467	434	348	307	185	127	101
Budgam	456	425	316	280	154	117	99
Poonch	480	457	374	333	190	122	98
Shopian	473	446	339	309	167	128	97

Kulgam	399	376	285	250	135	99	76
Kupwara	439	411	309	268	154	101	76
Kishtwar	418	383	287	250	154	93	74
Kathua	444	426	318	269	164	96	77
Samba	458	428	325	277	163	108	82

Reasi (102) and Doda (101) lead in disbursements despite not having the highest initiation counts, indicating more efficient local processing. Kishtwar (74) and Kulgam (76) have the lowest disbursements, suggesting district-level banking or verification constraints.

8. Stage-Level Delay Analysis

Source: StageLevelDelay_PivotTable. Shows cumulative flags by sector — revealing which sectors lose the most applicants at each stage.

Sector	Initiated	Submitted	SBDU Verified	DLIC Approved	BHD Verified	Sanctioned	Disbursed
Retail	1,190	1,114	867	776	429	308	248
Services	1,160	1,097	837	755	397	297	220
IT	1,142	1,080	808	712	379	274	221
Manufacturing	1,133	1,061	805	695	417	286	233
NA	1,083	1,016	792	692	371	260	214
Agri	1,110	1,039	797	697	372	269	217
Healthcare	1,100	1,017	811	717	393	277	202
Tourism	1,082	1,016	778	687	403	259	209
Grand Total	9,000	8,440	6,495	5,731	3,161	2,230	1,764

Retail (248) and Manufacturing (233) lead in final disbursements. Healthcare (202) and Tourism (209) have the lowest disbursements despite comparable initiation volumes, indicating sector-specific appraisal challenges. The BHD Verification stage consistently drops ~55% of applicants across all sectors — the sharpest single-stage drop in the entire funnel.

9. District-Level TAT Analysis

Source: DistrictTAT_PivotTable. Average TAT computed per district across all completed applications.

District	Avg. TAT (Days)	vs. Grand Avg (186.3 days)

Srinagar	192.5	+6.2 days (Highest)
Jammu	190.1	+3.8 days
Doda	189.8	+3.5 days
Ramban	188.1	+1.8 days
Poonch	187.0	+0.7 days
Samba	186.6	+0.3 days
Pulwama	186.3	At average
Reasi	185.6	-0.7 days
Shopian	185.6	-0.7 days
Rajouri	185.8	-0.5 days
Baramulla	185.0	-1.3 days
Kulgam	185.2	-1.1 days
Budgam	185.9	-0.4 days
Bandipora	186.0	-0.3 days
Anantnag	185.2	-1.1 days
Kupwara	185.4	-0.9 days
Kishtwar	184.7	-1.6 days
Ganderbal	184.3	-2.0 days
Kathua	184.1	-2.2 days
Udhampur	183.1	-3.2 days (Lowest)

TAT variation across districts is relatively narrow (183.1–192.5 days), with a 9.4-day spread. Srinagar and Jammu — the largest urban centres — have the highest TAT, likely driven by higher application complexity and bank appraisal load. Udhampur and Kathua are the most efficient districts.

10. Sector-Level TAT Analysis

Source: SectorTAT_PivotTable. Shows MAX and MIN TAT per sector — revealing the extreme variability within each sector.

Sector	MAX TAT (Days)	MIN TAT (Days)	TAT Range	Observation
Agri	335	51	284 days	Widest range — highest variability
Manufacturing	324	55	269 days	High range — complex appraisals
Services	323	46	277 days	High variability
Retail	316	58	258 days	Moderate-high range

IT	315	62	253 days	Moderate range
Tourism	310	39	271 days	Lowest minimum (fastest cases)
Healthcare	308	41	267 days	Moderate range
NA (Unclassified)	305	39	266 days	Lowest maximum
Grand Total	335	39	296 days	Overall dataset range

The overall TAT range of 39–335 days demonstrates extreme variability. Some applicants complete the entire pipeline in under 6 weeks while others take nearly a year. Agri and Manufacturing show the widest spreads, suggesting inconsistent bank appraisal standards for these sectors. Tourism has the fastest minimum (39 days), indicating it's possible to process rapidly when conditions align.

11. EMI Burden & Risk Score by Sector

Source: EMIBurden_PivotTable. Shows average EMI-to-Income Ratio and average Risk Score per sector.

Sector	Avg. EMI-to-Income Ratio	Avg. Risk Score	Stress Level
Services	30.28%	50.78	Highest EMI burden
Tourism	30.27%	51.11	High EMI burden
IT	30.16%	51.04	High EMI burden
Retail	29.98%	51.49	Moderate — highest Risk Score
Manufacturing	29.91%	50.85	Moderate
NA (Unclassified)	29.70%	51.22	Moderate
Healthcare	29.62%	50.53	Below average EMI
Agri	29.10%	51.29	Lowest EMI burden
Grand Total	29.88%	51.04	Overall average

Services and Tourism sectors carry the highest EMI-to-income burden (30.27–30.28%), approaching the critical 30% stress threshold. Retail has the highest average Risk Score (51.49) despite a moderate EMI ratio, suggesting risk is driven by factors beyond income-relative repayment burden. Agri has the lowest EMI burden (29.10%) — the most financially comfortable sector.

12. Gender & Repayment Analysis

Source: GenderRepayment_PivotTable. Full breakdown of repayment status across all gender categories.

Gender	Default	Delayed	Late	On-Time	NA (No Status Yet)	Total
Female	464	518	542	517	1,040	3,081
Male	483	463	492	507	950	2,895
NA	264	263	253	264	515	1,559
Other	246	231	251	249	488	1,465
Grand Total	1,457	1,475	1,538	1,537	2,993	9,000

Among applicants with repayment status (excluding NA): Female default rate = 22.4% (464/2,041); Male = 24.6% (483/1,945); Other = 25.2% (246/977). Female applicants show the highest Late payment count (542) — suggesting income timing issues rather than inability to repay. On-Time rates are nearly identical across genders (Female: 25.3%, Male: 26.1%), indicating gender is not a primary default risk driver.

13. Enterprise Type Analysis

Source: EnterpriseType_PivotTable. Loan count and total portfolio value by enterprise type.

Enterprise Type	Application Count	Total Loan Portfolio (INR)	Avg. Loan per App (Est.)
Nano Entrepreneur	2,991	₹61,55,64,4571	₹20.58 Lakh
Existing Enterprise	2,945	₹61,36,56,0846	₹20.84 Lakh
NA (Unclassified)	1,551	₹32,07,82,1079	₹20.68 Lakh
Msme Sunrise Sector	1,513	₹31,19,20,1683	₹20.62 Lakh
Grand Total	9,000	₹186,19,22,8179	₹20.69 Lakh

Nano Entrepreneurs (2,991) and Existing Enterprises (2,945) together account for 66% of all applications and nearly 66% of total loan portfolio value. Average loan sizes are remarkably uniform across enterprise types (~₹20.6–20.8 Lakh), suggesting a standardized loan sizing formula rather than need-based assessment. MSME Sunrise Sector has the lowest count (1,513) but similar average loan size.

14. Disability & Loan Access Analysis

Source: DisabilityLoanAmount_PivotTable. Evaluates whether specially-abled applicants receive equitable loan access.

Disability Category	Applicant Count	Median Loan Amount (INR)	vs. Grand Median
Hearing	1,286	₹19,11,174	-₹17,794 below median
Locomotor	1,290	₹18,19,935	-₹1,09,033 below median
Multiple	1,300	₹20,08,757.50	+₹79,789 above median
NA (No Disability)	3,856	₹19,15,797.50	-₹13,171 below median
Visual	1,268	₹19,95,500	+₹66,531 above median
Grand Total	9,000	₹19,28,968.50	—

Locomotor disability applicants receive the lowest median loan amounts (₹18,19,935) — ₹1.09 lakh below the grand median. This may reflect lower project cost submissions or conservative bank assessments for this group. Multiple and Visual disability applicants receive above-median loans. The relatively uniform distribution suggests loan sizing is primarily project-cost driven, not disability-based, though Locomotor applicants warrant monitoring for potential underfinancing.

15. District & Gender Disbursement Analysis

Source: DistrictGenderDisbursement_PivotTable. Total disbursements by district and gender category.

District	Female	Male	NA	Other	Total Disbursed
Reasi	42	27	18	15	102
Doda	37	35	15	14	101
Budgam	32	30	19	18	99
Poonch	42	33	11	12	98
Shopian	40	28	16	13	97
Anantnag	29	29	20	17	95
Jammu	29	30	16	19	94
Ramban	29	33	24	8	94
Rajouri	30	39	7	13	89
Baramulla	32	26	16	12	86
Pulwama	34	27	17	7	85
Srinagar	27	35	11	12	85
Kupwara	21	27	13	15	76
Kulgam	28	22	11	15	76
Kathua	20	25	16	16	77
Samba	27	31	15	9	82

Bandipora	22	26	17	23	88
Ganderbal	37	18	15	18	88
Udhampur	23	28	12	15	78
Kishtwar	24	27	13	10	74
Grand Total	605	576	302	281	1,764

Female applicants lead total disbursements (605) over Male (576) — a positive equity indicator. Reasi and Poonch have the highest female disbursements (42 each). Rajouri is the only district where Male disbursements (39) significantly exceed Female (30). Ganderbal shows a notable gender gap with 37 female vs. only 18 male disbursements.

16. Risk Segmentation Analysis

Source: Cleaned_Dataset (Clean Risk_Score) and EMIBurden_PivotTable. Risk scores computed across all 9,000 records.

Risk Category	Score Range	Count	% of Total	Avg. EMI Ratio (from Pivot)
Low Risk	0 – 40	3,355	37.28%	~29.5%
Medium Risk	41 – 69	2,457	27.30%	~30.0%
High Risk	70 – 100	2,732	30.36%	~30.1%

The grand average Risk Score of 51.04 (from EMIBurden_PivotTable) and average EMI ratio of 29.88% confirm the portfolio sits near critical thresholds. With 30.36% high-risk and 16.19% default rate, the pipeline requires structural risk controls at origination rather than post-disbursement monitoring alone.

17. Insights Summary

All insights below are directly traceable to a specific pivot table or Cleaned_Dataset computation:

7. Bank Sanction is the #1 Bottleneck (StageLevelDelay + Cleaned_Dataset): 64.1 avg days, 34.4% of total TAT. Consistent across all 8 sectors and 20 districts — systemic, not isolated.
8. Only 19.6% of Applicants Reach Disbursement (Funnel_PivotTable): 9,000 initiated → 1,764 disbursed. The BHD verification stage drops 44.8% of remaining applicants — the sharpest single-stage loss.
9. ₹186.2 Crore Total Portfolio at Risk (EnterpriseType_PivotTable): Uniform average loan of ~₹20.7 Lakh across enterprise types signals standardized rather than risk-differentiated loan sizing.

10. **466 Sanctioned Applications Await Disbursement (Funnel_PivotTable):** 2,230 sanctioned − 1,764 disbursed = immediate financial inclusion opportunity requiring process, not credit, resolution.
11. **Services and Tourism Sectors Most EMI-Stressed (EMIBurden_PivotTable):** 30.28% and 30.27% EMI ratios — both above the safe 30% threshold. Retail has the highest average Risk Score (51.49).
12. **Agri is the Healthiest Sector (EMIBurden_PivotTable):** Lowest EMI ratio (29.10%) and moderate Risk Score (51.29) — most suitable for accelerated processing.
13. **Female Applicants Lead Disbursements (DistrictGenderDisbursement_PivotTable):** 605 female vs. 576 male disbursed. Reasi and Poonch lead in female financial inclusion (42 disbursements each).
14. **Locomotor Applicants Receive Lowest Loans (DisabilityLoanAmount_PivotTable):** Median ₹18,19,935 vs. grand median ₹19,28,968 — ₹1.09 lakh gap. Requires equity review.
15. **Srinagar Has Worst TAT, Udhampur Best (DistrictTAT_PivotTable):** 192.5 vs. 183.1 days — a 9.4-day gap. Urban complexity drives higher TAT in Srinagar and Jammu.
16. **TAT Range is 39–335 Days (SectorTAT_PivotTable):** Extreme variability. Some applicants complete in 6 weeks, others take nearly a year — pointing to inconsistent process standards.

18. Recommendations

Each recommendation is directly linked to a pivot table finding:

Recommendation	Source Pivot	Priority	Projected Impact
Digitize Bank Sanction appraisal to reduce 64.1-day delay	StageLevelDelay + Cleaned_Dataset	Critical	25–35% TAT reduction (~22 days saved per application)
Resolve BHD Verification drop-off (44.8% stage loss)	Funnel_PivotTable	Critical	Even 20% recovery = ~632 additional DLIC-eligible applicants
Release 466 sanctioned-not-disbursed applications	Funnel_PivotTable	Critical	Immediate disbursement of ₹~96 Crore (466 × ₹20.7L avg)
Cap EMI-to-income at 30% for Services & Tourism	EMIBurden_PivotTable	High	Prevents new stressed borrowers in highest-EMI sectors
Risk-gate approvals: Risk Score ≥ 70 requires enhanced review	Cleaned_Dataset	High	Controls 30.36% high-risk pool; targets 16.19% default rate
Equity audit for Locomotor applicants (₹1.09L loan gap)	DisabilityLoanAmount_PivotTable	High	Corrects potential underfinancing for 1,290 applicants
Target TAT reduction in Srinagar & Jammu (+6.2, +3.8 days)	DistrictTAT_PivotTable	Medium	Dedicated banking liaisons could close gap to district average
Accelerate Agri sector processing (lowest EMI burden 29.10%)	EMIBurden_PivotTable	Medium	Fast-track lowest-risk sector for portfolio quality improvement

| Investigate Rajouri gender disbursement gap (39M vs 30F) | DistrictGenderDisbursement | Medium | Restore gender equity in J&K's most gender-skewed district |
| Standardize Agri TAT (39–335 day range) | SectorTAT_PivotTable | Ongoing | Process standards to reduce extreme outlier cases |

19. Impact Estimation

Impact Area	Current Metric (Pivot Source)	Target	Estimated Outcome
Pipeline Efficiency	TAT: 186.3 days (DistrictTAT)	15–25% reduction	TAT falls to ~140–158 days
Disbursement Gap	466 pending (Funnel)	Full release	~₹96 Crore deployed immediately
Default Rate	16.19% / 1,457 (GenderRepayment)	Risk gating	Default rate falls to ~12–13%
BHD Drop-off Recovery	44.8% loss at BHD (Funnel)	20% recovery	~632 additional applications progress
EMI Stress Prevention	30.28% Services, 30.27% Tourism (EMIBurden)	Cap at 30%	New disbursements within safe threshold
Locomotor Equity Gap	₹1.09L below median (DisabilityLoan)	Close gap	1,290 applicants receive equitable financing

20. Limitations

- EMI Data Missing for 7,319 Records: Only 1,681 of 9,000 records have valid EMI Amount data. EMIBurden_PivotTable averages reflect this subset only.
- BHD vs SBDU Flag Sequence Anomaly: SBDU Verified (6,495) exceeds BHD Verified (3,161) in the funnel — suggesting parallel or non-sequential processing rather than a strict linear pipeline.
- 2,993 Records with No Repayment Status: 33.3% of applications have NA repayment status (not yet at repayment stage), which limits default rate generalizability.
- Duplicate Application IDs: IDs 49, 63, 68, 81 appear twice — marginally affects aggregate pivot totals.
- Future-Dated Applications: Some application dates fall in 2026, beyond reasonable dataset collection scope.
- No Macroeconomic Variables: J&K-specific employment, inflation, and interest rate data absent from dataset.

21. Future Scope

17. Predictive Default Model: Use Clean Risk_Score, EMI ratio, District, Sector, and Days_Overdue as features to predict default probability at application stage.
18. Real-Time Pivot Dashboard: Connect all pivot tables to live application database for automated TAT alerts and disbursement gap tracking.
19. NPA Early Warning: Flag accounts entering 60-day overdue window before the 91-day NPA threshold using Days_Overdue trajectory.
20. Disability-Inclusive Loan Sizing: Develop need-based loan sizing models for Locomotor and Hearing applicants to close the current ₹1.09L median gap.
21. District-Level Credit Models: Build localized models for Srinagar and Jammu incorporating district-specific risk factors and bank capacity constraints.
22. Gender Equity Monitoring: Quarterly tracking of female-to-male disbursement ratios per district to sustain and improve on the current 605:576 lead.

22. Conclusion

This report has transformed the Mission YUVA Credit Flow Dataset — comprising 9,000 application records and 9 supporting pivot tables — into a comprehensive, evidence-based decision framework for operational efficiency and financial risk management.

Every finding in this report is directly traceable to either the Cleaned_Dataset or one of the pivot tables provided: the Funnel shows only 19.6% end-to-end conversion; the StageLevelDelay and DistrictTAT pivots pinpoint the Bank Sanction stage (64.1 days, 34.4% of TAT) as the critical bottleneck; the EMIBurden pivot reveals Services and Tourism as the most financially stressed sectors; the GenderRepayment pivot confirms 1,457 defaults (16.19%); and the DisabilityLoanAmount pivot flags a ₹1.09 lakh equity gap for Locomotor applicants.

By implementing the recommendations — digitizing bank appraisal, resolving the 466-application disbursement gap, enforcing EMI caps in stressed sectors, and applying risk-based approval gating — Mission YUVA's banking partners can reduce defaults by 20–25%, cut TAT by 15–25%, and deploy an estimated ₹96 crore in currently stalled disbursements. This framework provides the measurable, pivot-grounded foundation needed to transition from reactive processing to proactive, outcome-linked, low-risk financing across all 20 J&K districts.

23. Contribution Matrix

Team Member	Dataset & Sourcing	Cleaning	KPI & Analysis	Dashboard	Report Writing	PPT	Overall Role
Harshita Joshi	High	Medium	High	Medium	High	Medium	Report Lead
Anant Lalwani	High	High	Medium	Medium	Medium	Low	Data Lead

Om Kar Shukla	Medium	Low	Medium	Low	High	Low	PPT & Quality Lead
Saransh	Medium	Low	Medium	Low	Medium	High	Project Lead & PPT
Aryan Kinha	Medium	Low	High	High	Medium	Low	Dashboard Lead
Kanishka Dubey	Low	High	Low	Medium	Low	Medium	Strategy Lead