

Introduction:

This document aims to outline the process which was followed to produce the power bi dashboard along with some conclusions/findings and recommendations derived from our analysis.

1. Data Cleaning and Preparation

Before creating the report, it's important to clean the data and handle any errors or inconsistencies:

- **Remove Duplicate Entries:** Each Application ID is unique therefore if duplicates exist, verification of which entry is accurate is required. For this, the following assumptions/transformation steps were followed:
 1. Duplicates were identified (Query – Duplicate Applications ID)
 2. We kept the latest row for the applications that have the same client (Duplicate AppID for the same client).
 3. If we had a row of a duplicate with null timestamp, then this was assumed as invalid.
 4. If one of the duplicates was “disbursed” then this was kept as the valid one.
 5. If one of the duplicates is cancelled this was removed as invalid.
 6. The rest of duplicates have been treated as step 2.
- **Handle Null Values:** If Amount is null for disbursed applications, this was set as invalid.
- **Correct Status Mismatches:** Applications with conflicting status: A cleansing process has been conducted so that the status is coming from the list below:
 - Disbursed
 - Cancelled Disbursed Loan
 - Cancelled
 - Expired
 - Rejected
- **Remove Invalid Records:** Rows with null status have been removed as invalid as there was no way to define their status.

2. Key Metrics and KPIs to Include

Please see below the key metrics that would be relevant for this case:

- **Total Applications:** The total number of loan applications received.
- **Disbursed Loans:** The number of loans that have been successfully disbursed.
- **Cancelled Disbursed Loans:** The number and percentage of loans that were disbursed but later cancelled.
- **Rejected Applications:** The percentage of applications rejected by the bank.
- **Expired Applications:** The percentage of applications that expired before being disbursed.
- **Average Amount Requested:** The average amount requested per status.
- **Conversion Rate:** The percentage of applications that were successfully disbursed out of the total applications.
- **Cancellation Rate:** The percentage of disbursed loans that were later cancelled considering only the disbursed & cancelled disbursed rows.

3. Visualizations

Following KPIs definition now it is time to create proper visualisations using appropriate charts and graphs. **Dashboard Overview (Page 1)**

- **Total Applications and Disbursed Loans:** A card showing the count of total applications vs. disbursed loans.
- **Disbursed, Rejected, Cancelled, and Expired Status:** A pie chart to show the proportion of each status category, making it easy to compare the success and failure rates.
- **Conversion Rate and Cancellation Rate:** Use of a gauge chart showing the conversion rate progress towards an assumed goal (20%).
- **Trend Analysis:** A line chart showing the trend of loan applications, disbursed applications & conversion rate over time (monthly)

- **Detailed Analysis (Page 2)**
 - **Average Loan Amount Analysis:** A bar chart showing average loan amounts disbursed, cancelled, rejected, and expired.
 - **Distribution of Loan Amounts:** A column chart that shows the count of applications split by a bespoke grouping (0-5000, 5000-10000, 10000-15000).
 - **Loan Amounts Breakdown:** A column chart that shows the monthly amounts requested by the status of applications.
 - **Customer Insights:** Visuals included are the following:
 - List of all the customers showing their success rate to get a loan, how much money they have requested.
 - Top 15 customers by count of applications so that we have better picture of how those customer perform, how much money they request in their applications etc.
- **Suggestions/Further Analysis if data available:**
 - **Loan Amount by Customer Segment:** If customer segments are available (e.g., based on income level or employment type), show a stacked bar chart comparing the loan amounts across these segments.
 - **Time to Disbursement:** A line or bar chart showing the average time taken from application to disbursement, highlighting any delays.
 - **Geographical Distribution:** If geographical data is available, use a map to show the distribution of loans by region or city.
 - **Top Reasons for Rejection:** Use a bar chart to show the main reasons why applications are rejected (e.g., credit reasons, incomplete information).

4. Final Notes

Here we have some high-level observations based on our analysis:

- Monthly Conversation rate has been reduced within FY 2022-2023. That may be caused by the higher increase of the total application against the increase of disbursed applications.
- Conversion Rate of the whole dataset is close 10% however it is still far from our assumed goal of 20%.
- The majority of applications is being rejected. No data available to understand why.
- By the end of FY, it is noticed that a rapid increase in applications is shown reaching its pick in Feb 2023. It might be caused by an efficient marketing campaign or because existing customers shared their satisfaction with other or due to the fact that global economy has shown growth and made people confident to invest.
- Further investigation might be required to understand why we have 15% of cancelled applications. Is this because the process is too complicated? Is this because people just experimenting with the platform?
- Customers mainly choose to apply for amounts less than 5,000 EUR.
- The average disbursed loans are less than 1,000 EUR which might be related with our confidence that those amounts are more likely to paid off. Is this related to our customers circumstances?
- There aren't many disbursed loans that are after cancelled by the customers which means that the customers are satisfied with the service they get.