

## Total Loan Applications

```
[12]: total_loan_application = df['id'].count()
print("Total Loan Applications:", total_loan_application)

Total Loan Applications: 38576
```

## MTD Total Loan Applications

```
[17]: latest_issue_date = df['issue_date'].max()
latest_year = latest_issue_date.year
latest_month = latest_issue_date.month

mtd_data = df[(df['issue_date'].dt.year == latest_year) & (df['issue_date'].dt.month == latest_month)]
mtd_loan_applications = mtd_data['id'].count()
print(f'MTD Loan Applications (for {latest_issue_date.strftime("%B %Y")}):{mtd_loan_applications}')

MTD Loan Applications (for December 2021):4314
```

## Total Funded Amount

```
[29]: total_funded_amount = df['loan_amount'].sum()
total_funded_amount_millions = total_funded_amount/ 1000000
print ("Total Funded Amount: ${:.2f}M".format(total_funded_amount_millions))

Total Funded Amount: $435.76M
```

## MTD Total Funded Amount

```
[27]: latest_issue_date = df['issue_date'].max()
latest_year = latest_issue_date.year
latest_month = latest_issue_date.month

mtd_data = df[(df['issue_date'].dt.year == latest_year) & (df['issue_date'].dt.month == latest_month)]

mtd_total_funded_amount = mtd_data['loan_amount'].sum()
mtd_total_funded_amount_millions = mtd_total_funded_amount/1000000

print ("MTD Total Funded Amount: ${:.2f}M".format(mtd_total_funded_amount_millions))

MTD Total Funded Amount: $53.98M
```

## Total Amount Recieved

```
[28]: total_amount_recieved = df['total_payment'].sum()
total_amount_recieved_millions = total_funded_amount/ 1000000
print ("Total Amount Recieved: ${:.2f}M".format(total_amount_recieved_millions))

Total Amount Recieved: $435.76M
```

## MTD Total Amount Recieved

```
[31]: latest_issue_date = df['issue_date'].max()
latest_year = latest_issue_date.year
latest_month = latest_issue_date.month

mtd_data = df[(df['issue_date'].dt.year == latest_year) & (df['issue_date'].dt.month == latest_month)]

mtd_total_amount_recieved = mtd_data['total_payment'].sum()
mtd_total_amount_recieved_millions = mtd_total_amount_recieved/1000000

print ("MTD Total Amount Recieved: ${:.2f}M".format(mtd_total_amount_recieved_millions))

MTD Total Amount Recieved: $58.07M
```

## Average Interest Rate

```
[38]: avg_interest_rate = df['int_rate'].mean()
print("Average Interest Rate: {:.2f}%".format(avg_interest_rate))

Average Interest Rate: 0.12%
```

## Average Debt-to-Income Ratio (DTI)

```
[39]: avg_dti = df['dti'].mean()*100
print("Average Debt-to-Income Ratio (DTI): {:.2f}%".format(avg_dti))

Average Debt-to-Income Ratio (DTI): 13.33%
```

INFO [2023-01-19T10:12:11.12Z] [127.0.0.1:53414->127.0.0.1:8080]

## Good Loan Metrics

```
[42]: good_loans = df[df['loan_status'].isin(["Fully Paid", "Current"])]  
  
total_loan_applications = df['id'].count()  
  
good_loan_applications = good_loans['id'].count()  
good_loan_funded_amount = good_loans['loan_amount'].sum()  
good_loan_received = good_loans['total_payment'].sum()  
  
good_loan_funded_amount_millions = good_loan_funded_amount / 1000000  
good_loan_received_millions = good_loan_received / 1000000  
  
good_loan_percentage = (good_loan_applications / total_loan_applications) * 100  
  
print("Good Loan Applications:", good_loan_applications)  
print("Good Loan Funded Amount (in Millions): ${:.2f}M".format(good_loan_funded_amount_millions))  
print("Good Loan Total Received (in Millions): ${:.2f}M".format(good_loan_received_millions))  
print("Percentage of Good Loan Applications: {:.2f}%".format(good_loan_percentage))  
  
Good Loan Applications: 33243  
Good Loan Funded Amount (in Millions): $370.22M  
Good Loan Total Received (in Millions): $435.79M  
Percentage of Good Loan Applications: 86.18%
```

## Bad Loan Metrics

```
[43]: bad_loans = df[df['loan_status'].isin(["Charged Off"])]  
  
total_loan_applications = df['id'].count()  
  
bad_loan_applications = bad_loans['id'].count()  
bad_loan_funded_amount = bad_loans['loan_amount'].sum()  
bad_loan_received = bad_loans['total_payment'].sum()  
  
bad_loan_funded_amount_millions = bad_loan_funded_amount / 1000000  
bad_loan_received_millions = bad_loan_received / 1000000  
  
bad_loan_percentage = (bad_loan_applications / total_loan_applications) * 100  
  
print("Bad Loan Applications:", bad_loan_applications)  
print("Bad Loan Funded Amount (in Millions): ${:.2f}M".format(bad_loan_funded_amount_millions))  
print("Bad Loan Total Received (in Millions): ${:.2f}M".format(bad_loan_received_millions))  
print("Percentage of Bad Loan Applications: {:.2f}%".format(bad_loan_percentage))  
  
Bad Loan Applications: 5333  
Bad Loan Funded Amount (in Millions): $65.53M  
Bad Loan Total Received (in Millions): $37.28M  
Percentage of Bad Loan Applications: 13.82%
```

## Monthly Trends by Issue Date for Total Funded Amount

### Monthly Trends by Issue Date for Total Funded Amount

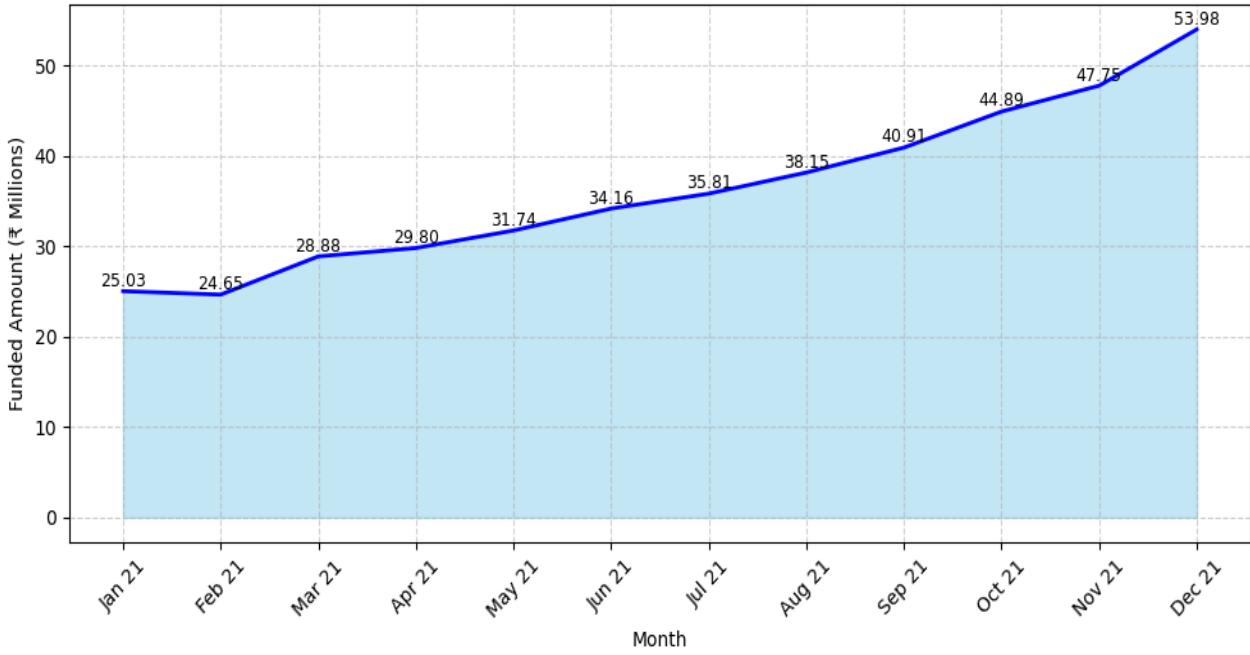
```
[45]: monthly_funded = (
    df.sort_values('issue_date')
        .assign(month_name=lambda x: x['issue_date'].dt.strftime('%b %y'))
        .groupby('month_name', sort=False)[['loan_amount']]
        .sum()
        .div(1000000)
        .reset_index(name='loan_amount_millions')
)

plt.figure(figsize=(10, 5))
plt.fill_between(monthly_funded['month_name'], monthly_funded['loan_amount_millions'], color='skyblue', alpha=0.5)
plt.plot(monthly_funded['month_name'], monthly_funded['loan_amount_millions'], color='blue', linewidth=2)

for i, row in monthly_funded.iterrows():
    plt.text(i, row['loan_amount_millions'] + 0.1, f'{row["loan_amount_millions"]:.2f}',
             ha='center', va='bottom', fontsize=9, rotation=0, color='black')

plt.title('Total Funded Amount by Month', fontsize=14)
plt.xlabel('Month')
plt.ylabel('Funded Amount (₹ Millions)')
plt.xticks(ticks=range(len(monthly_funded)), labels=monthly_funded['month_name'], rotation=45)
plt.grid(True, linestyle='--', alpha=0.6)
plt.tight_layout()
```

Total Funded Amount by Month



### Monthly Trends by Issue Date for Total Amount Received

```
[46]: monthly_received = (
    df.sort_values('issue_date')
        .assign(month_name=lambda x: x['issue_date'].dt.strftime('%b %y'))
        .groupby('month_name', sort=False)[['total_payment']]
        .sum()
        .div(1000000)
        .reset_index(name='received_amount_millions')
)

plt.figure(figsize=(10, 5))
plt.fill_between(monthly_received['month_name'], monthly_received['received_amount_millions'],
                 color='lightgreen', alpha=0.5)
plt.plot(monthly_received['month_name'], monthly_received['received_amount_millions'],
         color='green', linewidth=2)

for i, row in monthly_received.iterrows():
    plt.text(i, row['received_amount_millions'] + 0.1, f"{row['received_amount_millions']:.2f}",
             ha='center', va='bottom', fontsize=9, rotation=0, color='black')

plt.title('Total Received Amount by Month', fontsize=14)
plt.xlabel('Month')
plt.ylabel('Received Amount (₹ Millions)')
plt.xticks(ticks=range(len(monthly_received)), labels=monthly_received['month_name'], rotation=45)
plt.grid(True, linestyle='--', alpha=0.6)
plt.tight_layout()
plt.show()
```

