

POWER BI PROJECT

BANK CUSTOMER SEGMENT



I N N O M A T I C S
R E S E A R C H L A B S

PROJECT INTRODUCTION

BANK Customer Segment Analysis

This Power BI project analyzes bank transaction data to uncover customer segmentation, transaction behavior, and risk profiles.

Using fields like:

Transaction ID, Customer ID, Transaction Amount, Account Balance, Customer DOB, Cust Location, Transaction Time, Age, RFM Score, Credit Score.

The dataset enables insights into demographics, revenue patterns, and credit risk. The goal is to transform raw data into strategic actions that drive profitability and minimize exposure.

EXECUTIVE SUMMARY

Objective:

Segment customers to maximize revenue and minimize credit risk.

Approach: Exploratory analysis, segmentation, profitability and risk scoring, actionable recommendations.

Key outcomes: Customer segments with revenue and risk profiles, peak transaction patterns, top high-value high-risk customers

DATA OVERVIEW

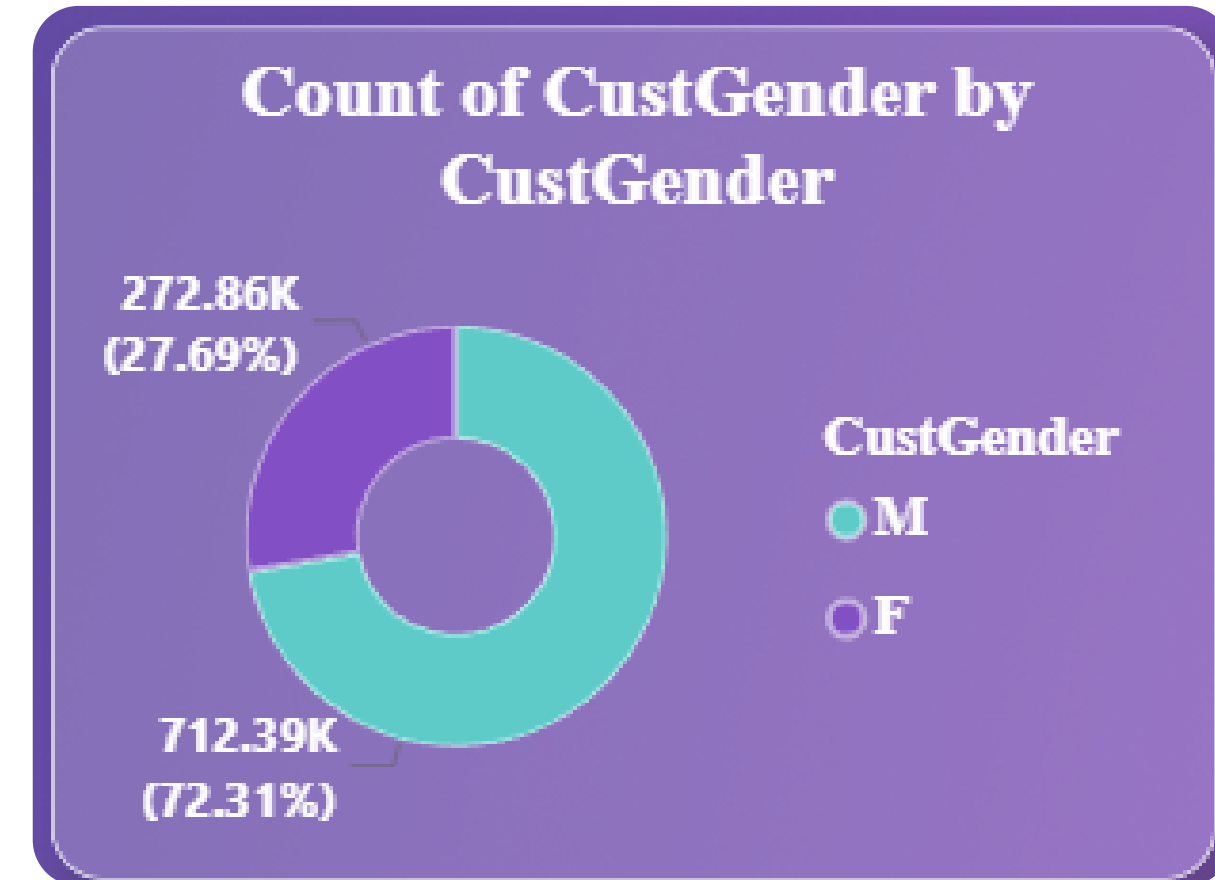
- **Source :** Bank Customer Segment Dataset.
- **Key fields :** Transaction ID, Customer ID, Customer DOB, Cust Gender, Cust Location, Cust Account Balance, Transaction Date, Transaction Time, Transaction Amount.
- **Derived Key fields :** Age, RFM Score, Customer Segment, Credit Score, Risk Level etc.
- **Volume summary:** Total transactions and customer counts used for analysis.

METHODOLOGY AND TOOLS

- **Tool :** Power BI for visualization and interactive reporting.
- **Data prep:** Age calculation from DOB; transaction aggregation; RFM and credit score scaling; risk labeling.
- **Visuals used:** Cards; bar charts; pie charts; scatter plots; line charts; tables; slicers; matrix; funnel and waterfall where applicable.

CUSTOMER DEMOGRAPHICS SNAPSHOT

- **Total customers:** 839K.
- **Average age:** 30.
- **Unique locations:** 8,164.
- **Gender split:** Male 72.5% ; Female 27.5%.
- **Top locations:** Mumbai; Bangalore;
Delhi; Gurgaon; Noida.



Count of CustomerID by CustLocation

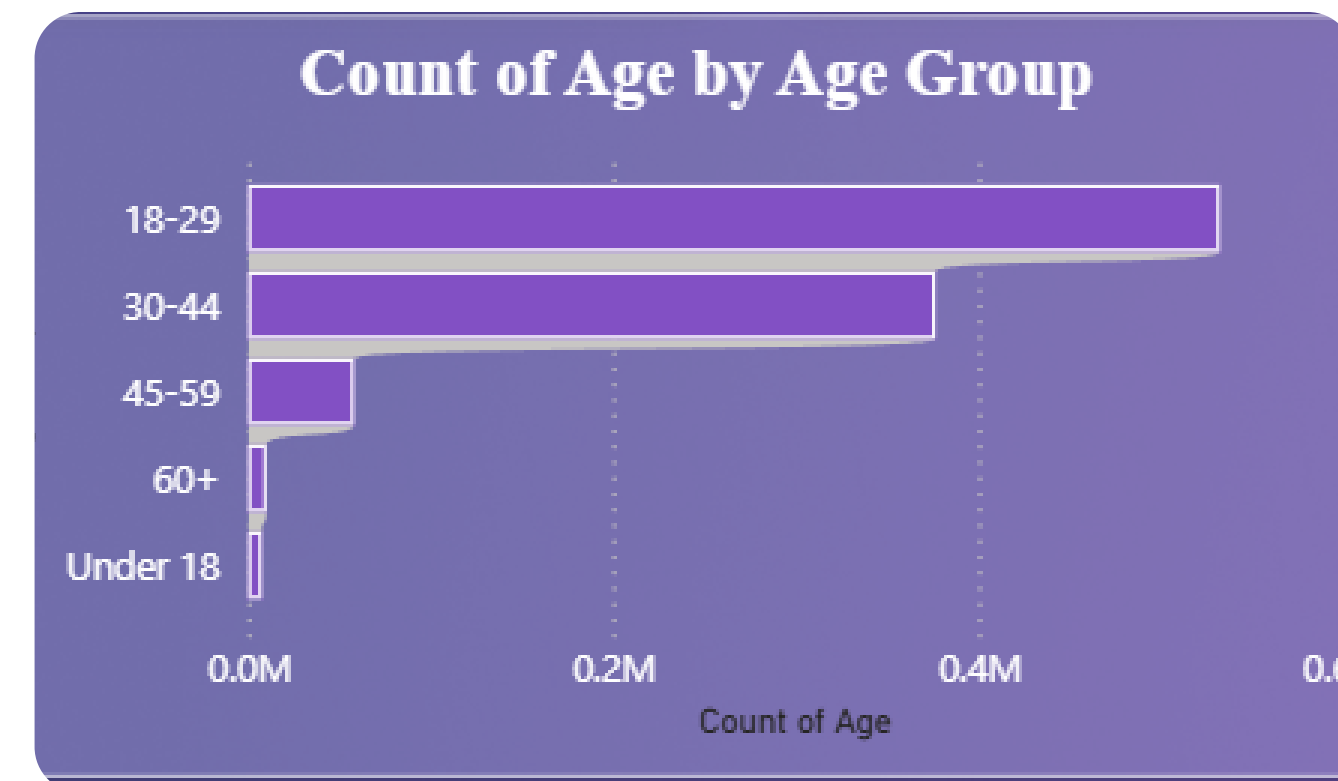
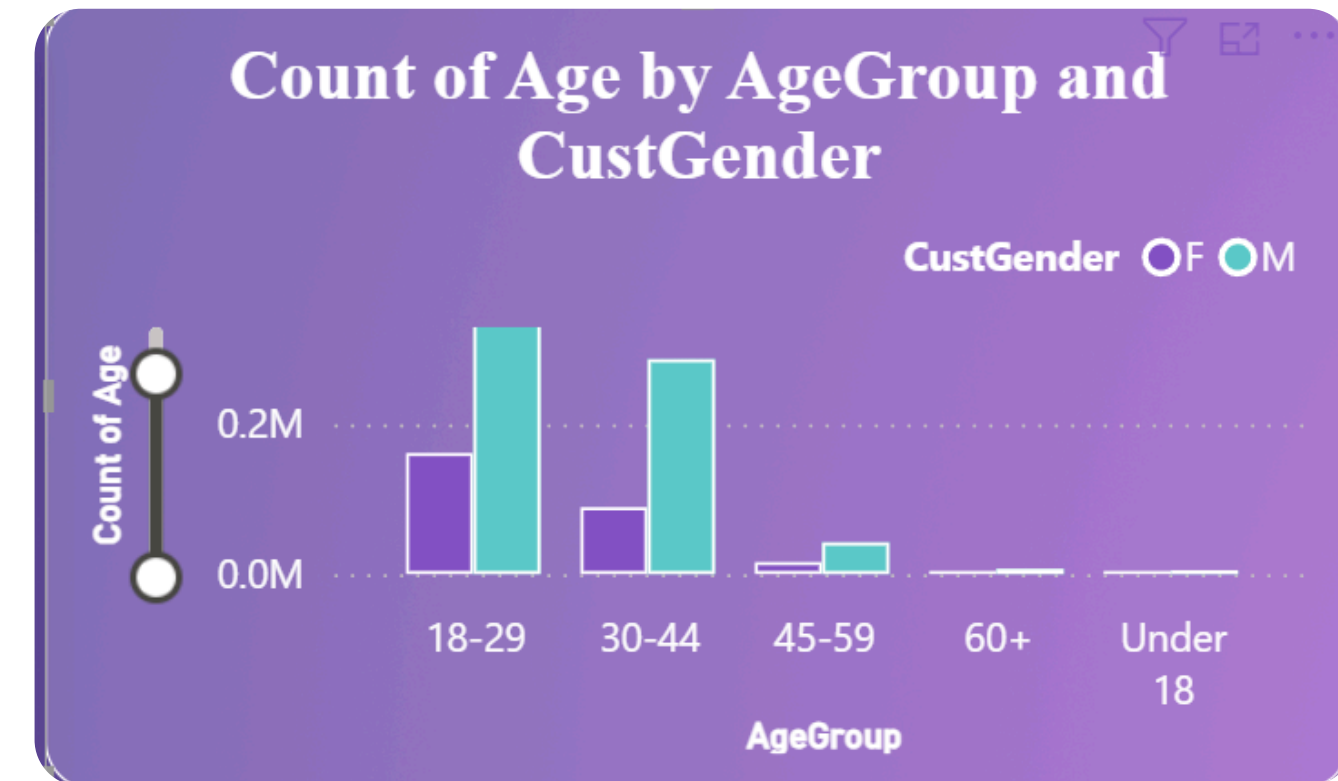
Delhi	Mumbai	Bangalore	...
140.08K	107.62K	76.69K	
		Gurgaon	
		69.65K	3...

AGE AND GENDER DISTRIBUTION

Age groups analyzed: 0-18; 19-30; 31-45; 46-60; 60+.

Distribution insight: Majority concentrated in 19-30 and 31-45 groups.

Gender by age group: Male-dominant across most age bands with variation in younger cohorts.



TRANSACTION VOLUME AND VALUE

- **Total amount:** ₹1.43bn.
- **Total transactions:** 985K to 1.56M depending aggregation used.
- **Average transaction:** ₹1.45K.
- **Highest single transaction:** Highlight top transaction value in dataset.

839K

Total Customers

30

Average Age

8129

Unique Locations

₹ 1.43bn

Total Amount

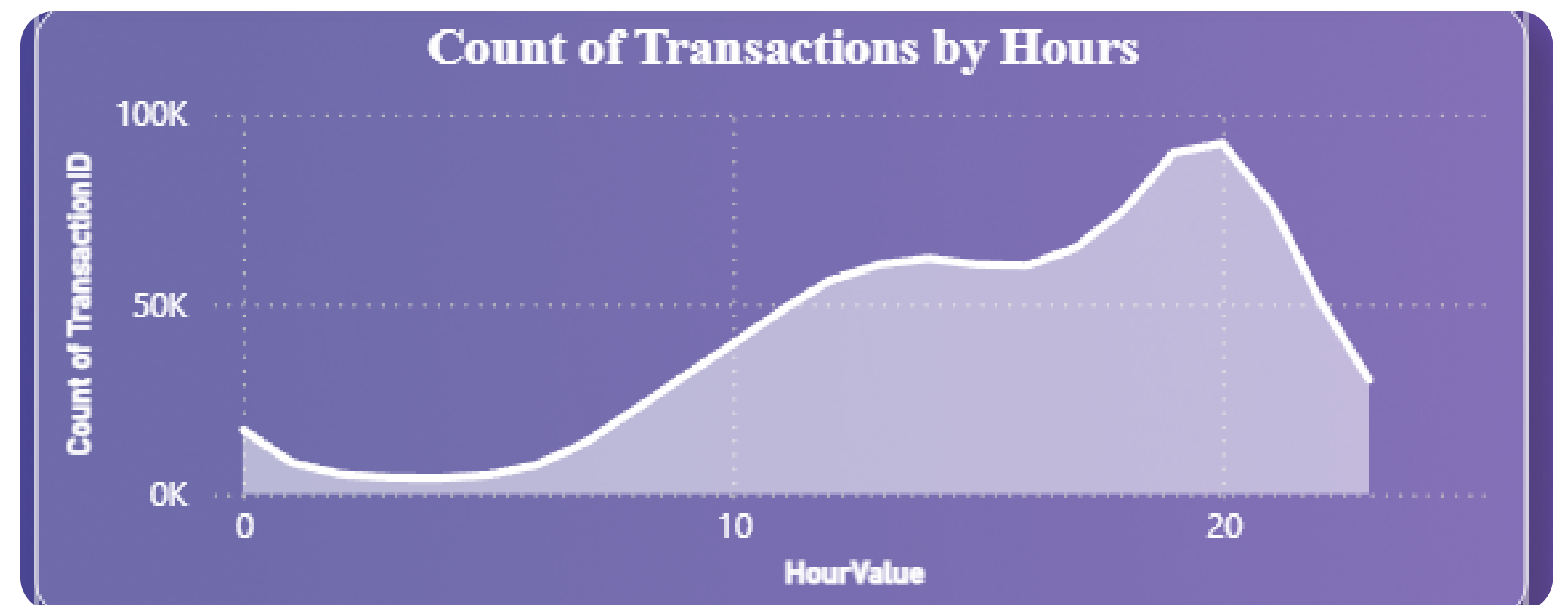
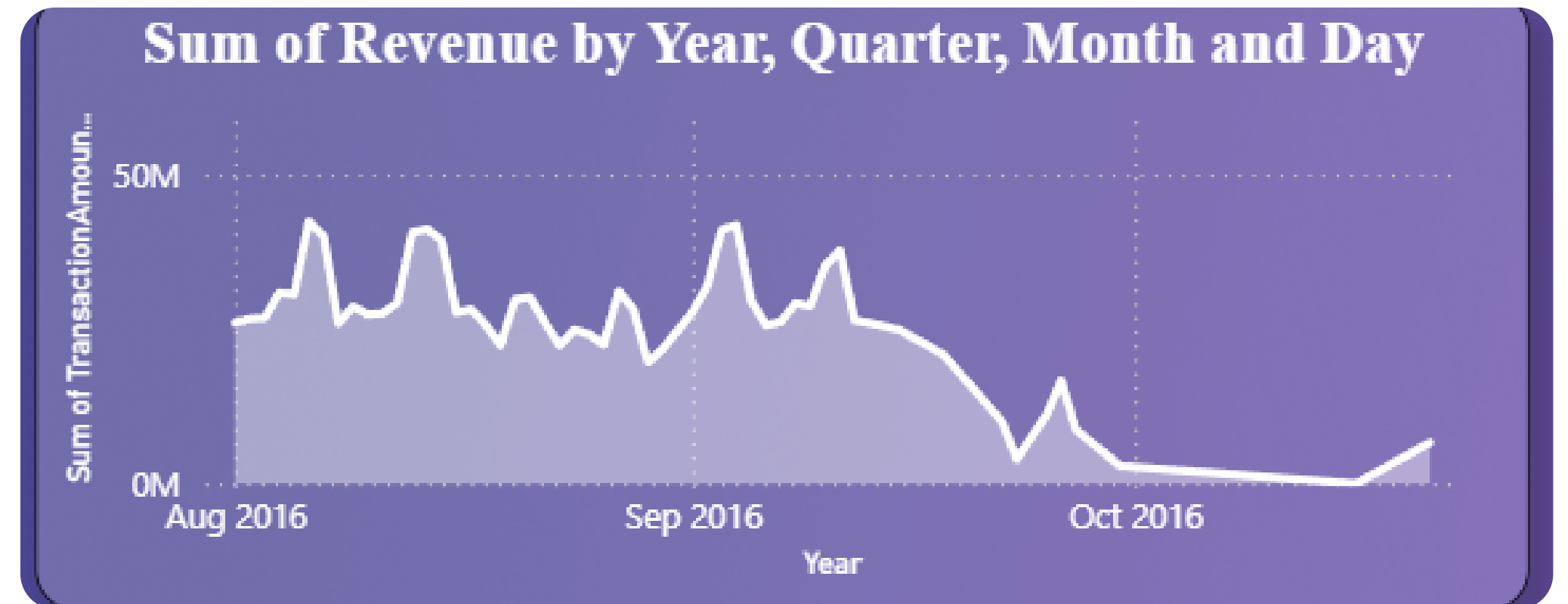
985K

Total Transactions

CustomerID	Gender	Amount	CustLocation	Age
C1012121	M	1,00,000.00	Kharar	31
C1117318	M	1,00,000.00	Anand	33
C1232875	M	1,00,000.00	Kolkata	44
C1249153	M	1,00,000.00	Delhi	22

TRANSACTION TEMPORAL PATTERNS

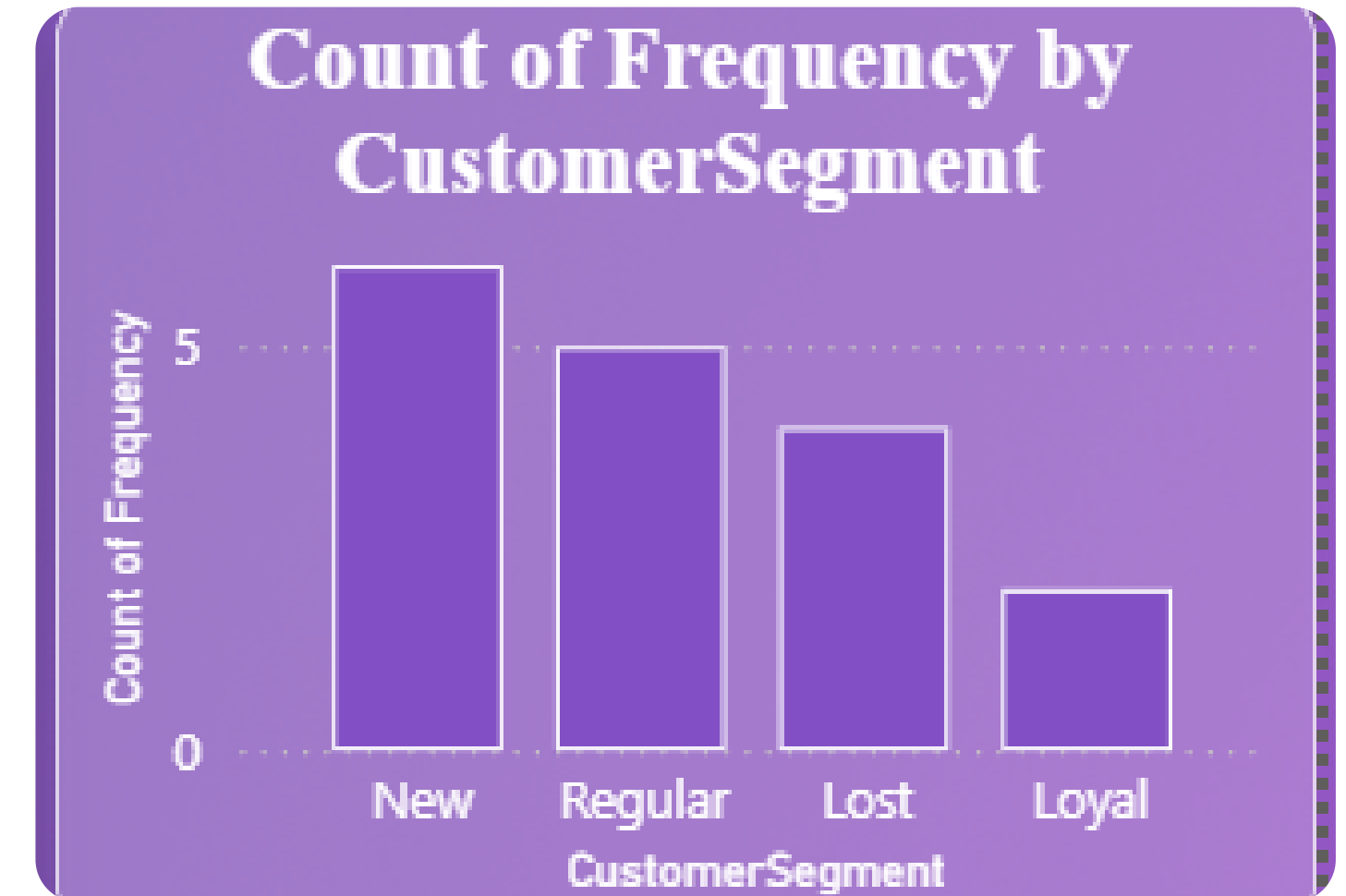
- **Monthly trend:** Revenue trend across months August to October with daily granularity.
- **Hourly pattern:** Transactions peak during core banking hours shown in hourly counts.
- **Day-of-week insight:** Consistent daily activity with identifiable weekday patterns.



CUSTOMER SEGMENTS

DEFINITION

- **Segments:** Loyal; New; Regular; Lost.
- **Segmentation logic:** Frequency and recency thresholds and revenue contribution.
- **Segment counts:** Loyal customers 30; Lost customers 23K; Revenue from new customers ₹1.22bn.



30

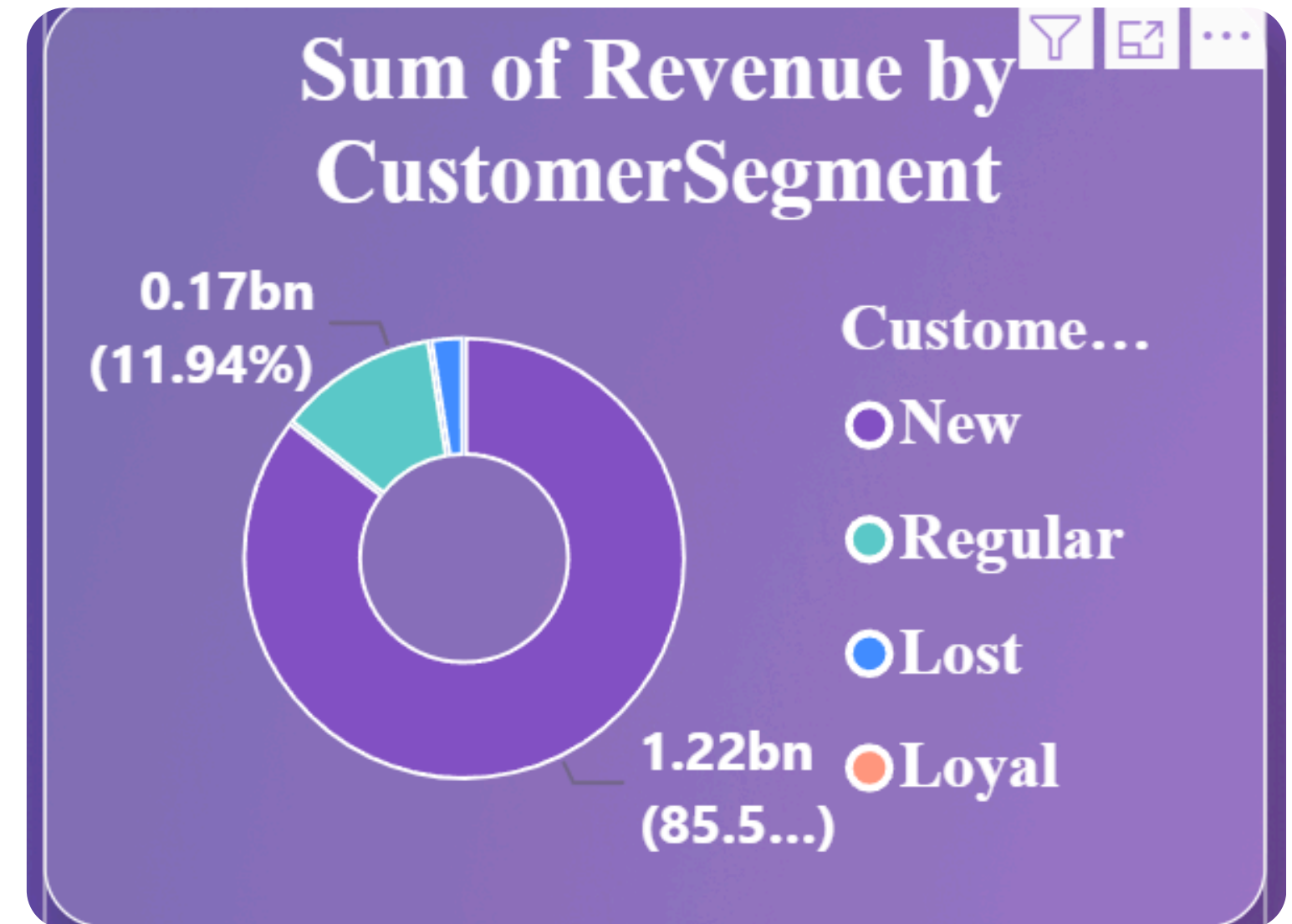
LoyalCustomer

23K

LostCustomer

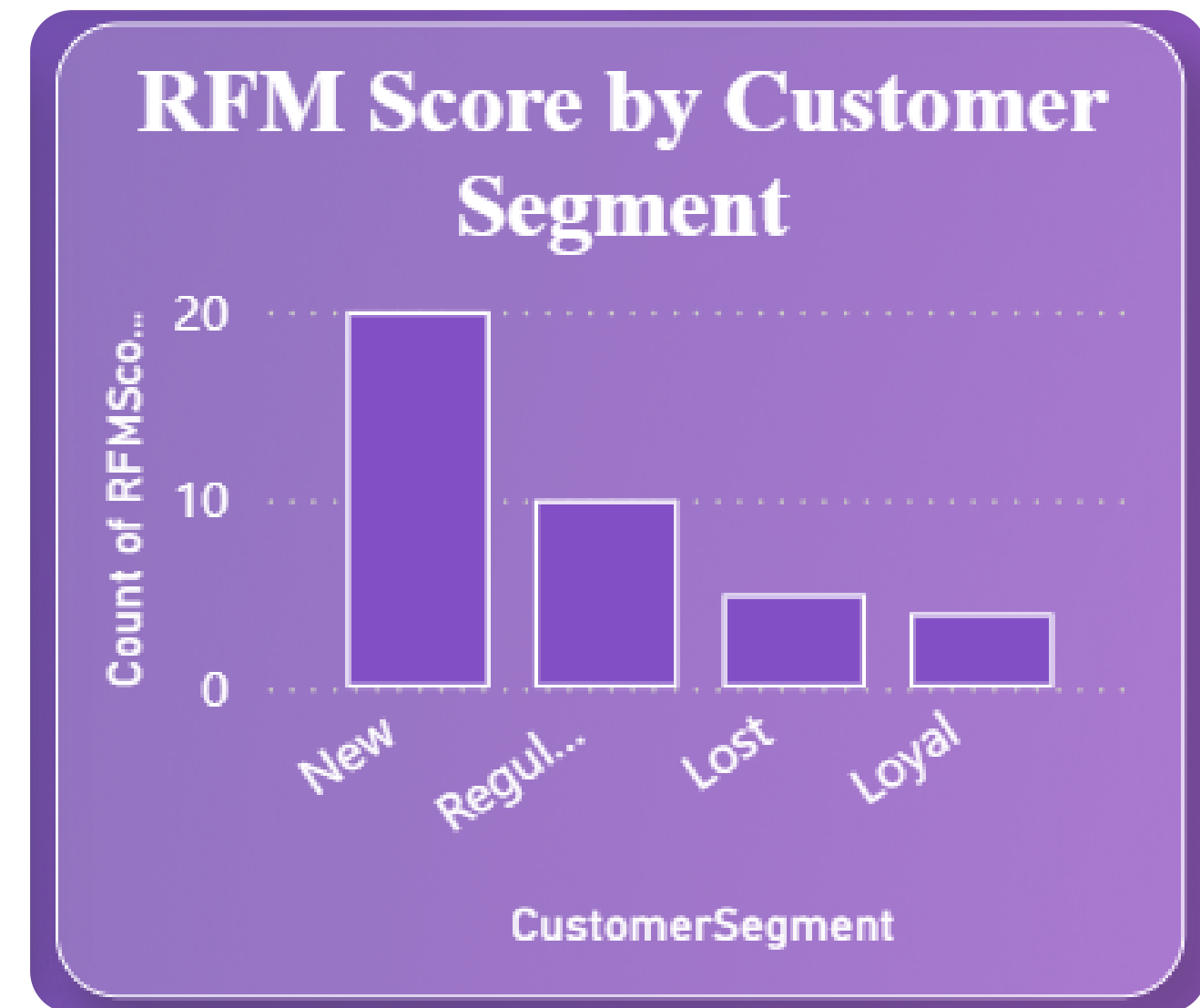
REVENUE BY SEGMENT

- **Revenue distribution:** New and Loyal segments generate majority of revenue.
- **Average revenue per customer:** Highest in Loyal segment.
- **Frequency vs revenue:** Regular segments show moderate frequency but lower per-customer revenue.



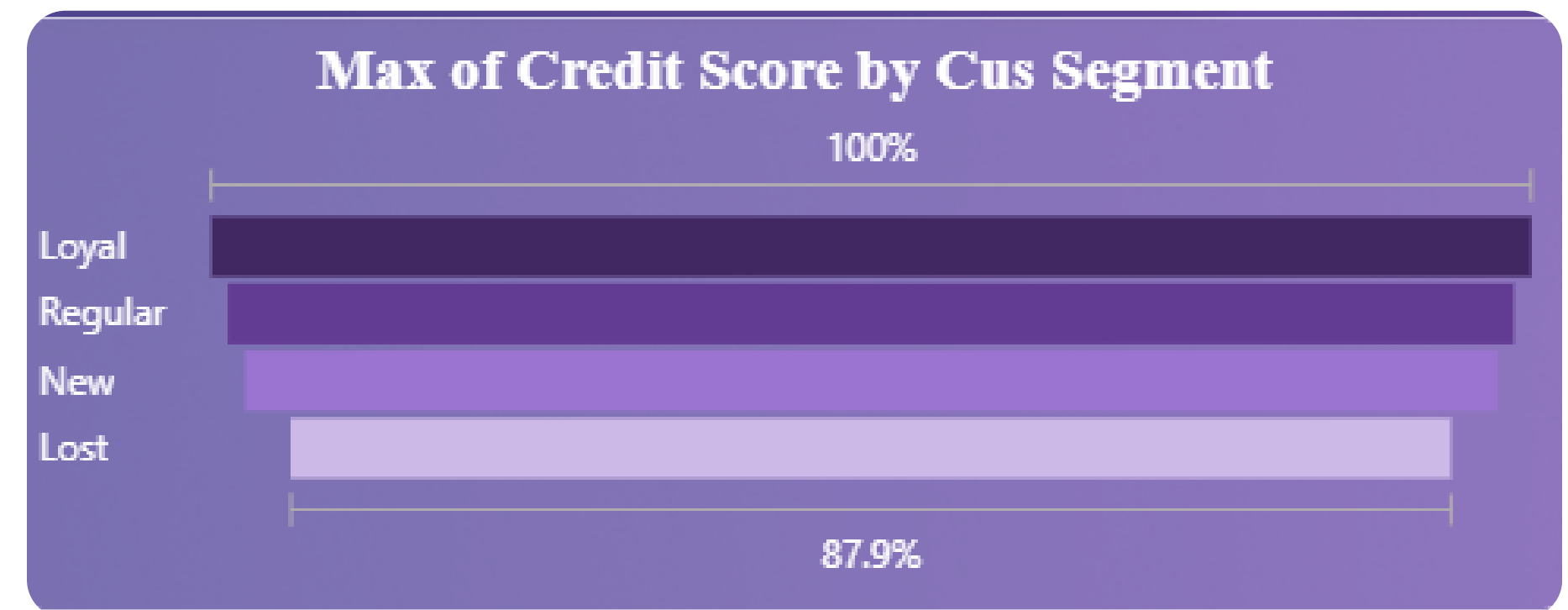
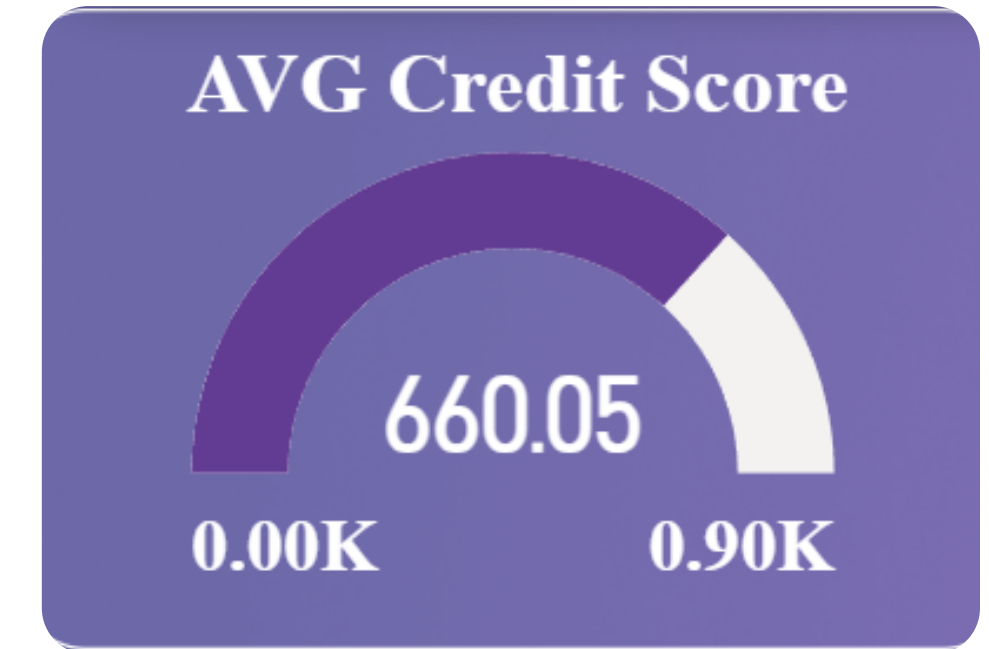
RFM AND SEGMENT BEHAVIOR

- **RFM findings:** High-frequency high-recency customers align with Loyal segment.
- **Age group concentration:** New segment skewed to younger age brackets.
- **Actionable insight:** Upsell opportunities targeted at Regular customers with rising frequency.



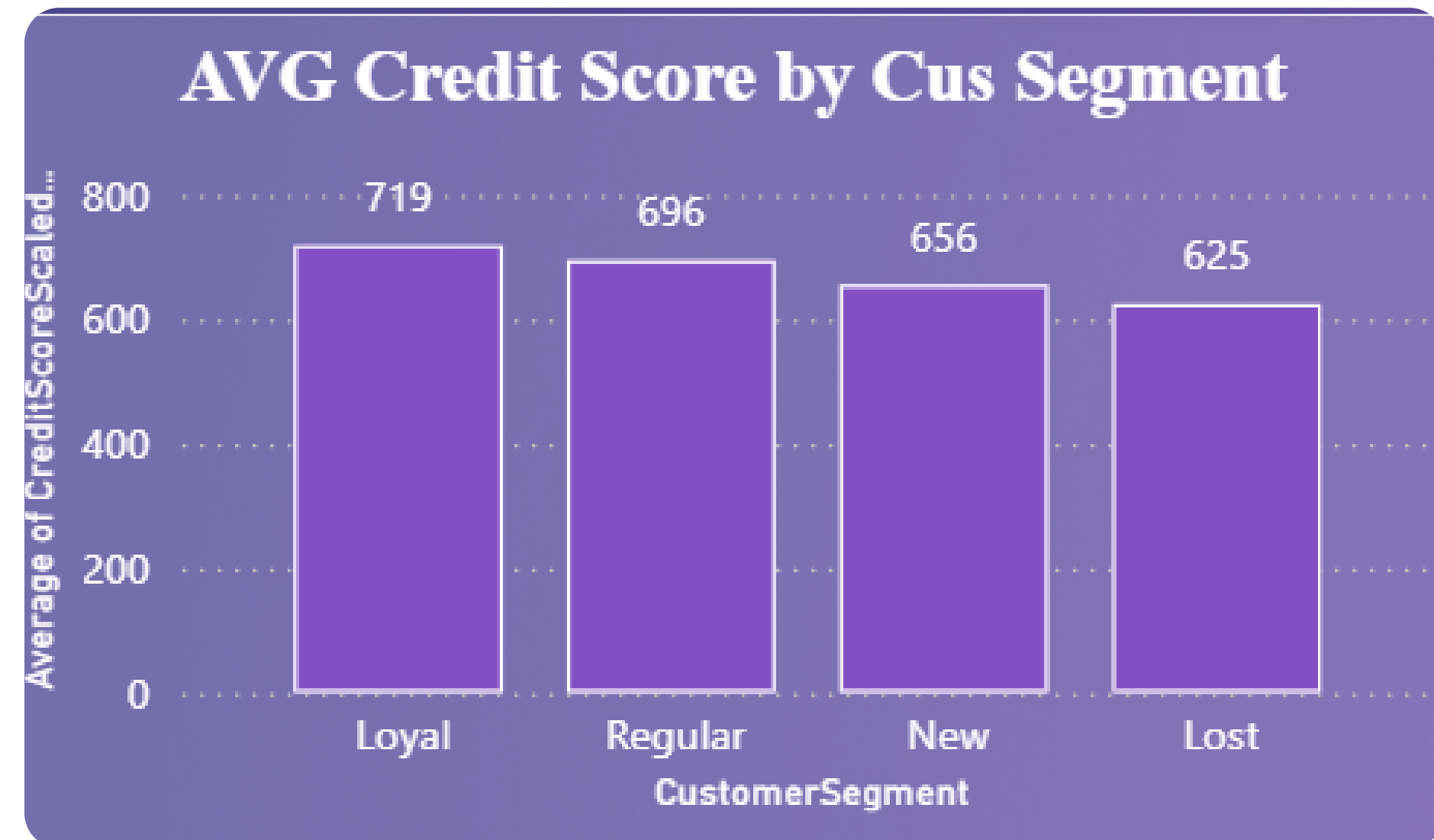
PROFITABILITY AND RISK INDICATORS

- **Avg credit score:** 660.05.
- **High-risk customers:** 160K.
- **Avg account balance:** ₹106.03K.
- **Total monetary by customer:** ₹1.91bn.
- **Risk distribution:** High risk largest by customer count; Low risk holds highest account balance sum.



HIGH-VALUE HIGH-RISK CUSTOMERS

- **Top 10 list:** Identify customers with top revenue and high risk across filters.
- **Characteristics:** Elevated account balances with below-average credit scores.
- **Immediate action:** Personalized credit review and targeted cross-sell with safeguards.



Bank Customer Segment

Customer Demographic Analysis

839K

Total Customers

30

Average Age

8129

Unique Locations

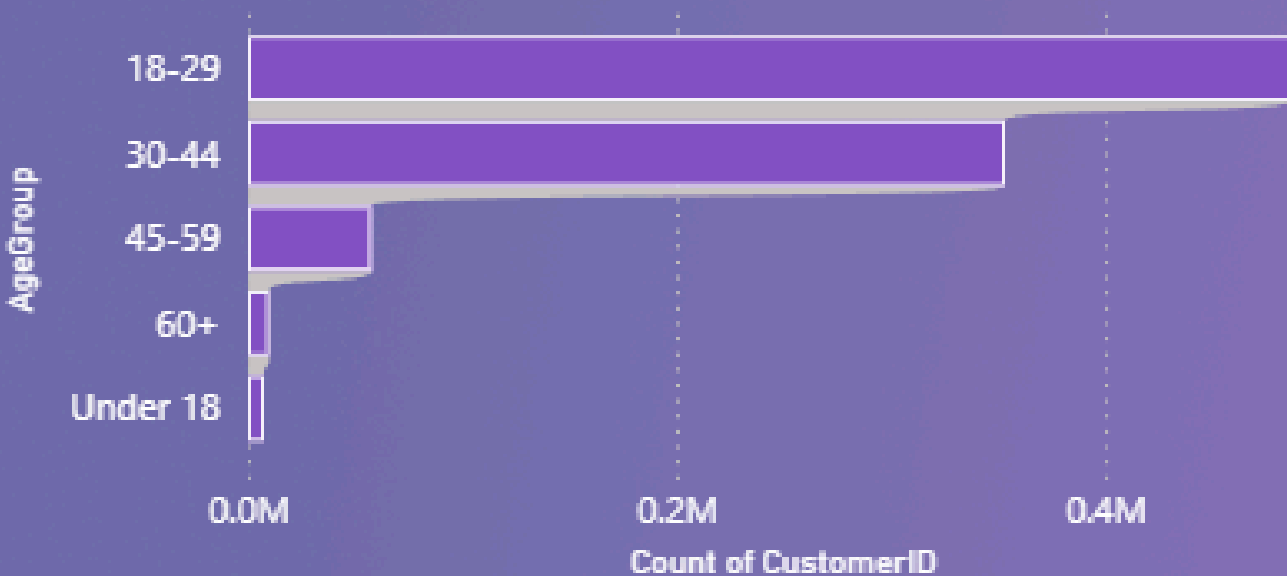
₹ 1.43bn

Total Amount

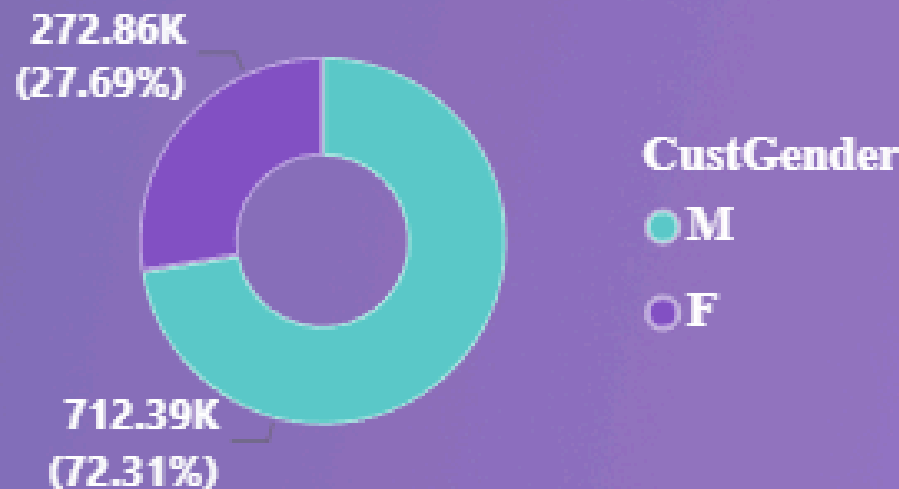
985K

Total Transactions

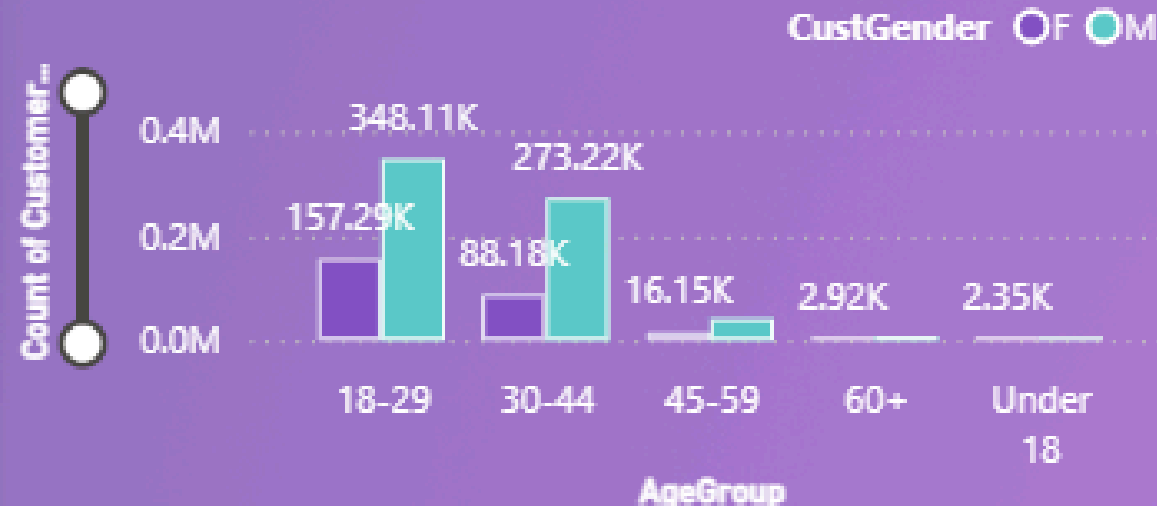
Count of Age by Age Group



Count of CustGender by CustGender



Count of CustomerID by AgeGroup and CustGender



CustomerID	Gender	Amount	CustLocation	Age
C1010024	M	5,000.00	Kolkata	51
C1010064	M	3,000.00	Delhi	28
C1010065	M	500.00	Barabanki	31
C1010128	M	200.00	Kolkata	35

Count of CustomerID by CustLocation

Delhi	Mumbai	Bangalore	...
140.08K	107.62K	76.69K	3...
		Gurgaon	
		69.65K	

Transaction Behavior Insights

₹ 1.43bn

Total Amount

₹ 1.45K

Avg TransactionAmount

₹ 1.56M

Max Transaction

16.00K

Average Account Balance

Month

☐ August

☐ October

☐ September

Day

Friday ☐

Monday ☐

Saturday ☐

Sunday ☐

Thursday ☐

Tuesday ☐

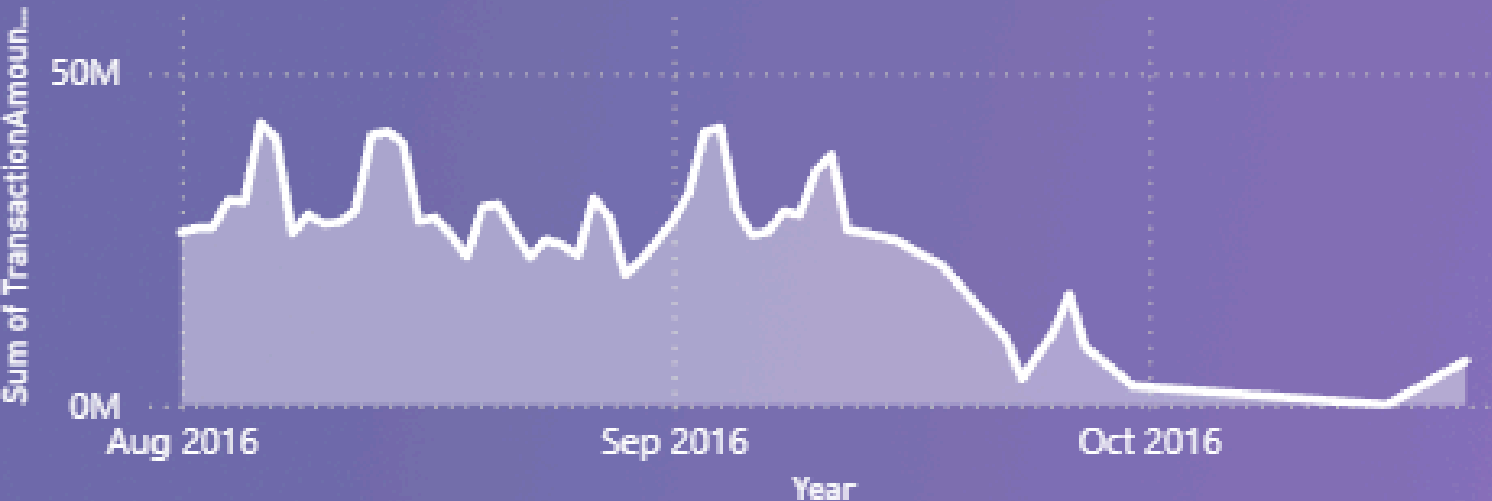
Wednesday ☐

Date

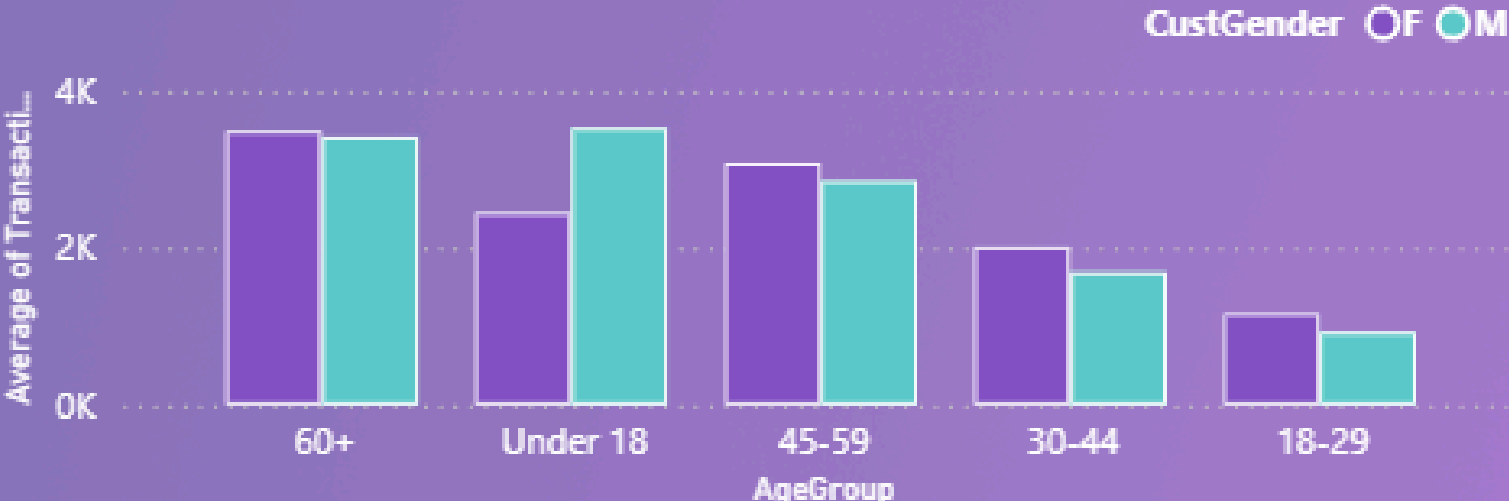
01-08-2016

21-10-2016

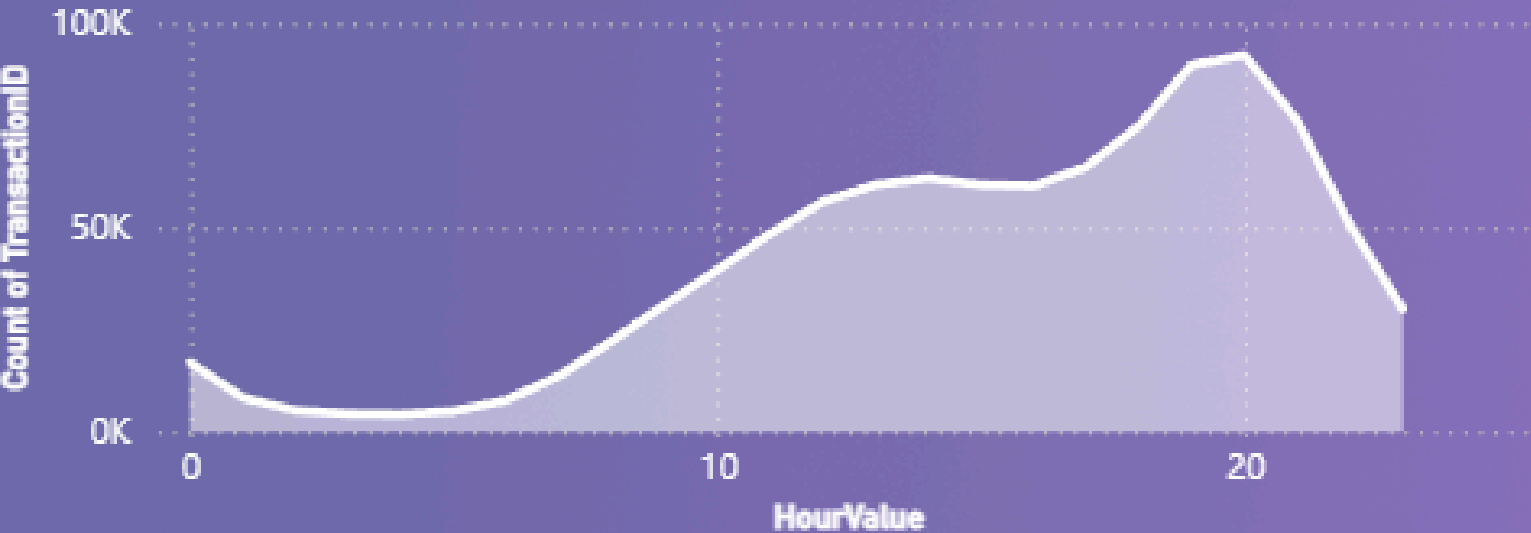
Sum of Revenue by Year, Quarter, Month and Day



Avg of Revenue by Age Group and Cust Gender



Count of Transactions by Hours



HourValue	Friday	Monday	Saturday	Sunday	Thursday	Tuesday	Wednesday
0	2027	2765	2580	2942	2319	2145	
1	981	1308	1320	1495	1160	999	
2	635	764	685	908	768	748	
3	543	672	601	743	647	572	
4	567	578	622	599	662	612	
5	652	785	656	623	792	743	
6	1052	1224	1020	967	1195	1132	
Total	125195	145675	140423	163178	141814	136090	13

Customer Segmentation Analysis

839K

Total Customers

30

LoyalCustomer

1.22bn

Revenue From New Cus

839K

New Customer

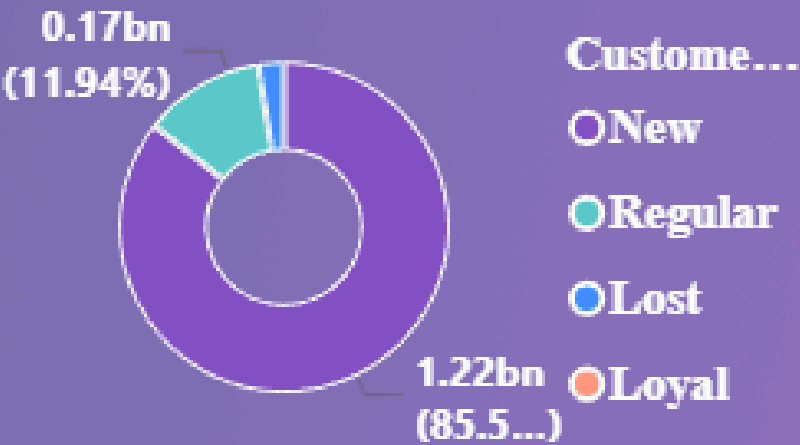
23K

Lost Customer

Avg Revenue by CustomerSegment



Sum of Revenue by CustomerSegment



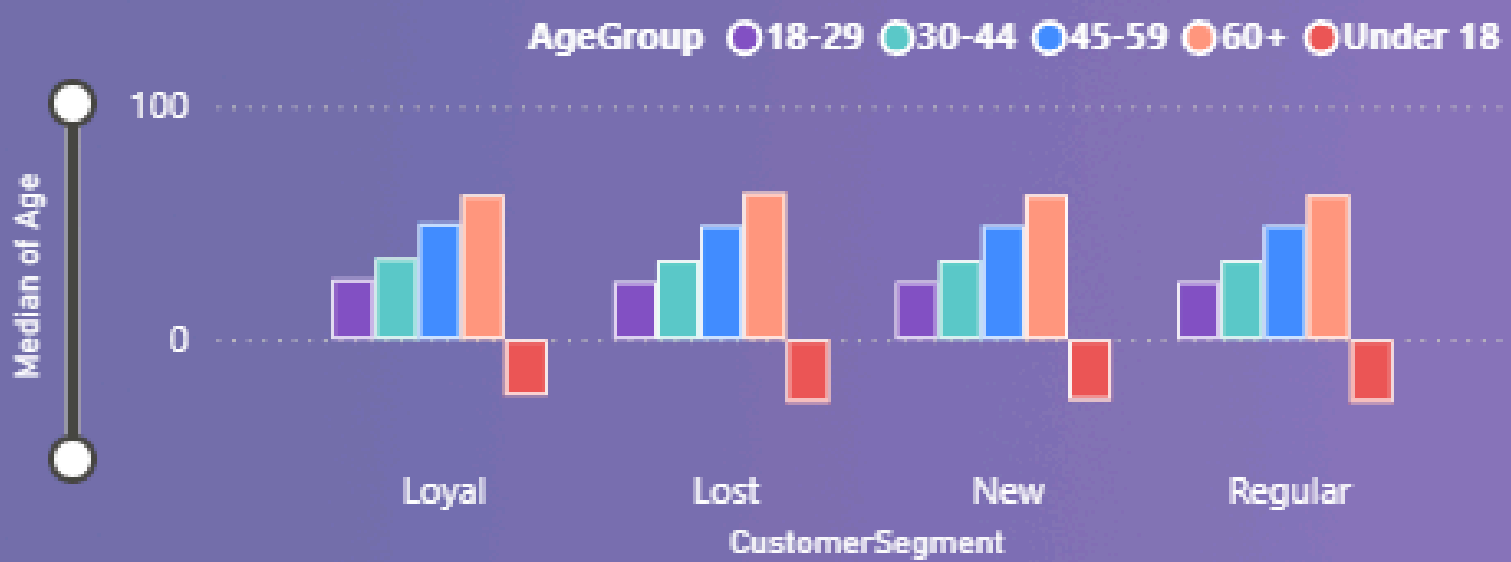
RFM Score by Customer Segment



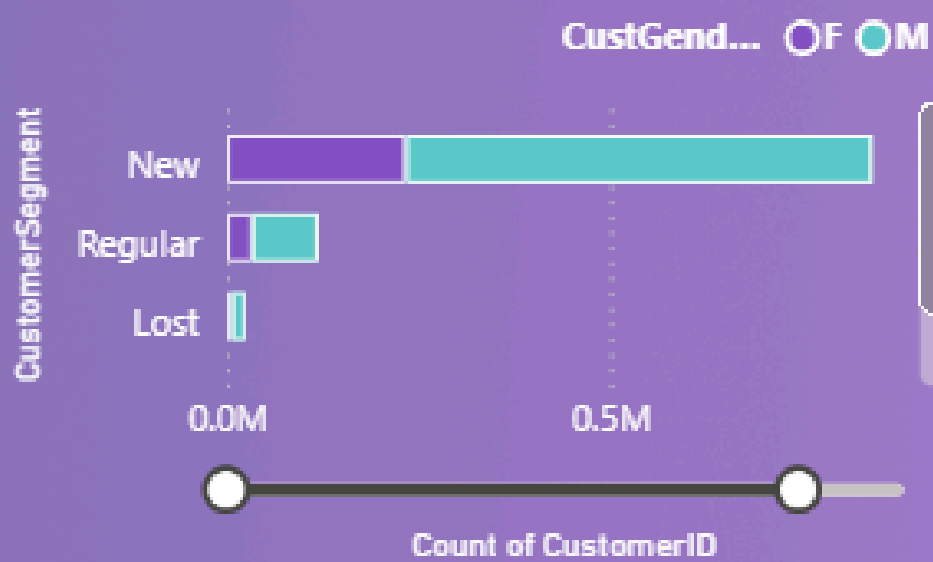
Count of Frequency by CustomerSegment



Median of Age by CustomerSegment and AgeGroup



Customers vs Customer segment



Cus Segment

Lost ☐

Loyal ☐

New ☐

Regular ☐

RiskLevel

High Risk ☐

Low Risk ☐

Medium Ri... ☐

Profitability & Risk Indicator

AVG Credit Score



160K

HighRiskCustomers

₹ 106.04K

Avg Account Balance

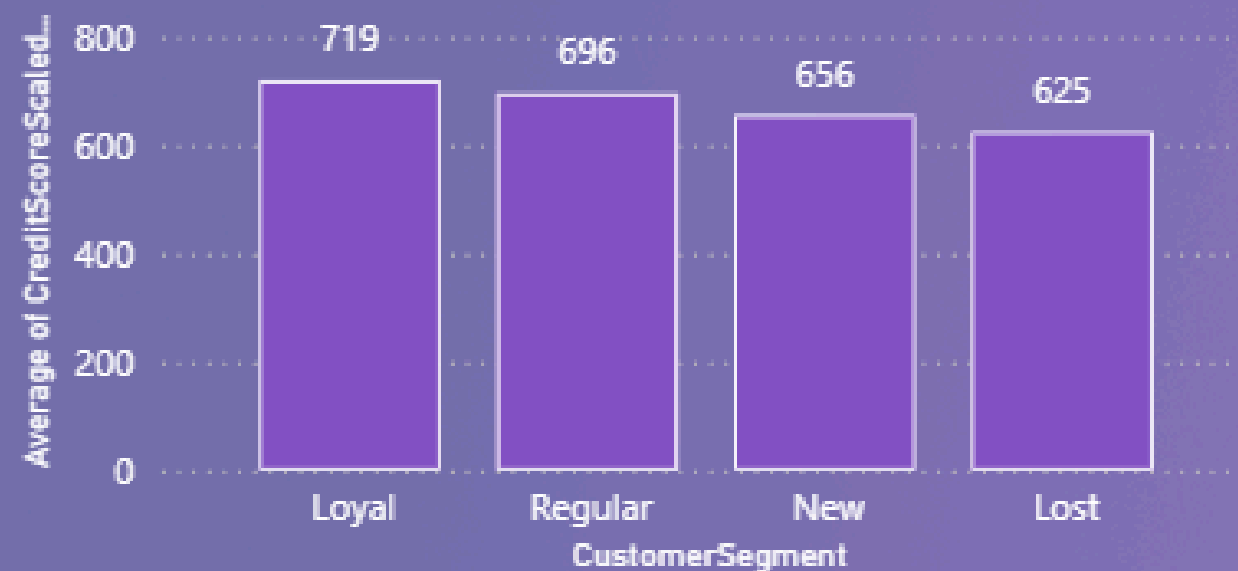
₹ 1.43bn

Total Amount

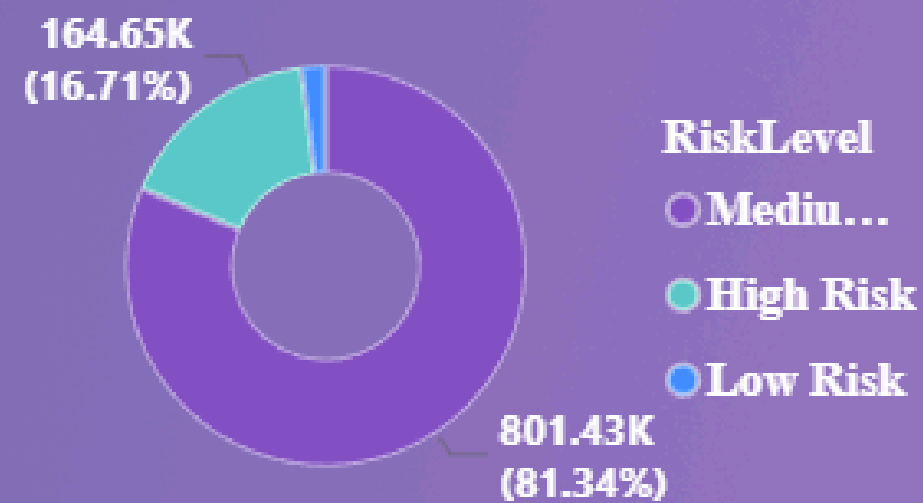
1.91bn

TotalMonetaryByCustomer

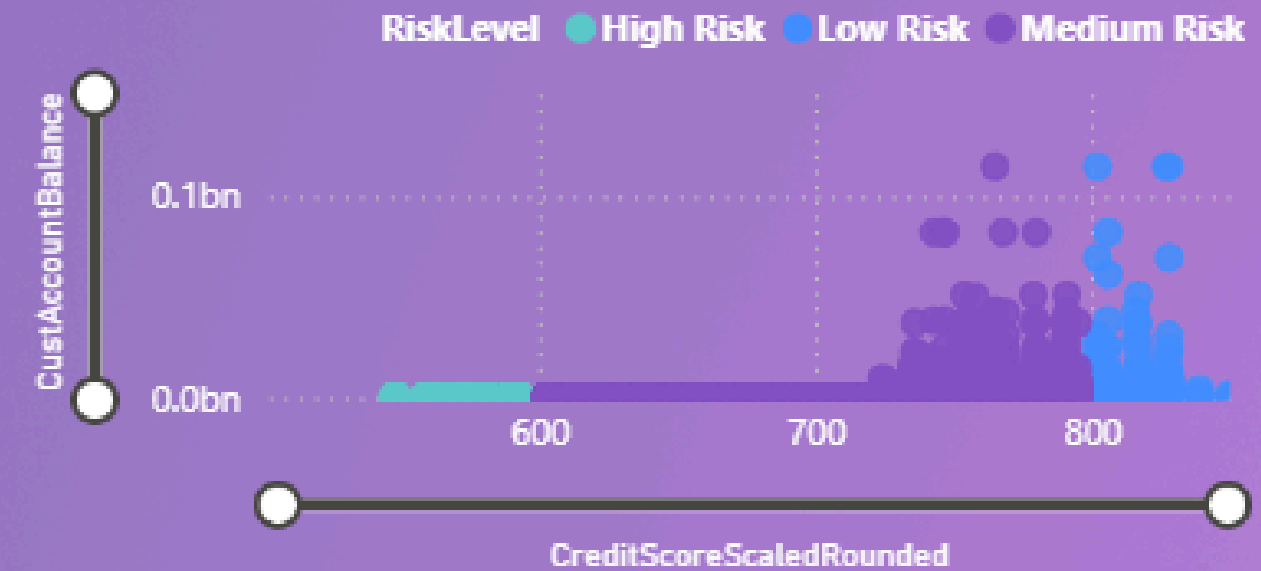
AVG Credit Score by Cus Segment



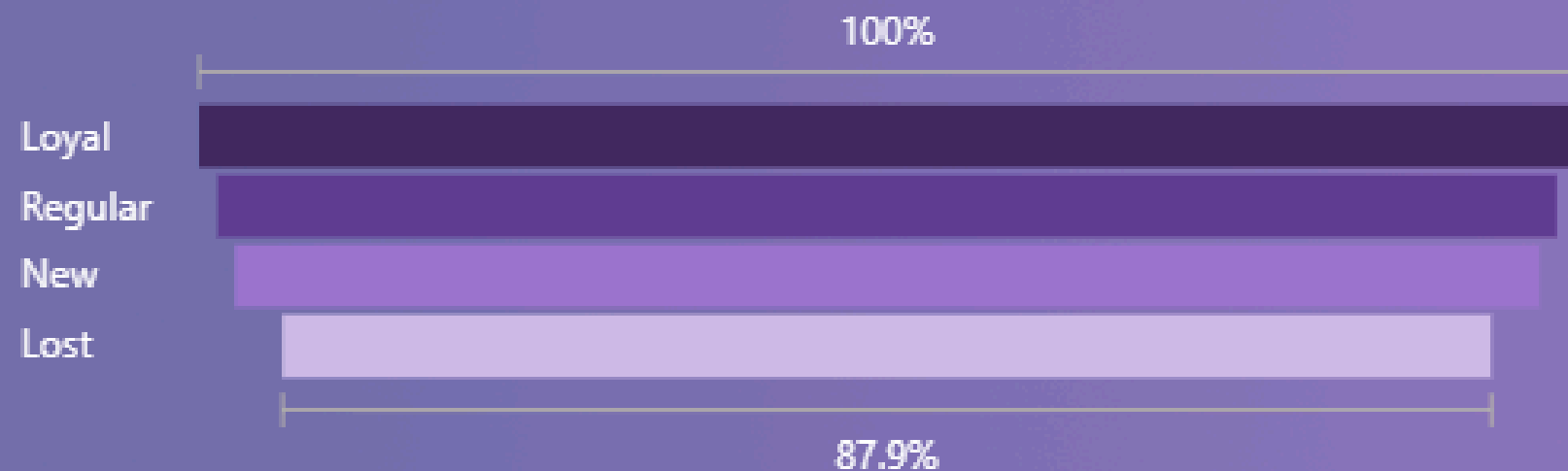
Customer Count by Risk Level



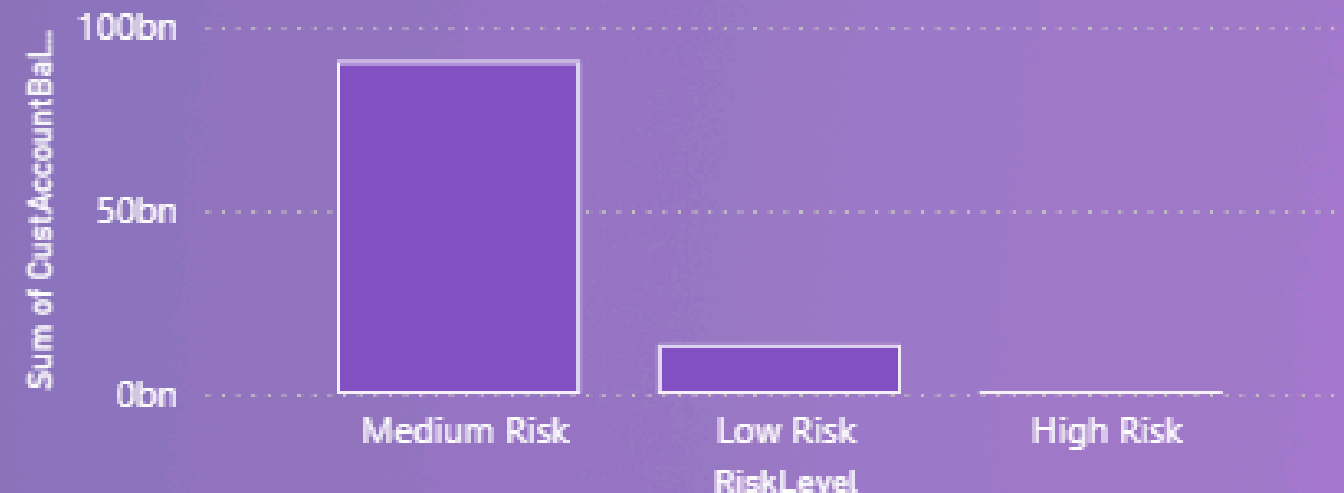
Relation b/w Acc Bal & Credit Score



Max of Credit Score by Cus Segment



Sum of ACC-BAL by Risk Level



RiskLevel

High Risk ☐

Low Risk ☐

Medium Risk ☐

RECOMMENDED BUSINESS STRATEGIES

- **Risk Mitigation:** Implement tiered monitoring for high-value high-risk customers and stricter credit limits.
- **Revenue Growth:** Launch targeted offers for Regular customers to convert to Loyal.
- **Customer Retention:** Reactivation campaigns for Lost customers with attractive onboarding incentives.
- **Operational:** Hourly staffing alignment based on peak transaction times to improve service.
- **Data and Governance:** Periodic credit score recalibration and centralized risk dashboard for ongoing monitoring.

CONCLUSION AND NEXT STEPS

- **Summary:** Segmentation reveals where revenue and risk concentrate enabling focused actions.
- **Immediate next steps:** Deploy targeted campaigns; create automated alerts for high-risk exposures; run pilot for cross-sell to Regular customers.
- **Long term:** Integrate external credit data; refine RFM model; periodic dashboard refresh and executive review cadence.