Credit analysis-Predictive analysis for TVS data

From the largest cities to the smallest villages, India is filled with ambition and enterprise. As Indians from all walks of life set out to write their growth story, our timely and affordable credit empowers them to bring their dreams alive.

As part of the $8.5 billion TVS Group, we empower Indians from various socio- economic backgrounds with financial products that serve their needs. In doing so, we further the cause of financial inclusion.

Our Two-Wheeler, Used Car, Three-Wheeler, and Tractor Loans are designed for Indians in small towns and the rural heartland, for our nation's growth is powered by their prosperity. Our foray into the Used Commercial Vehicle and Consumer Durable finance is yet another step in this direction.

With over 6.5 million customers, our growth is built on firm foundations. We have won several awards, including the Economic Times best BFSI Brands 2021, Flame Award for Best use of Social Media and best CSR campaign, and the Most Effective Employee Engagement Strategy Award at the World HRD Congress.

Product Portfolio:

Two-Wheeler Loans
No.1 TVS Motor financier with a market share of 49.7%

Used Car Loans
Among the top 3 players in the market

Tractor Loans
Key financier for New Tractors, Used Tractors & Agri-implements

Consumer Durable Loans
9000 dealer points touching 1200 towns.

Used Commercial Vehicle Loans
Asset size of Rs.1000 crore with 1000+ channel partners.

Business Loans
Launched in 2018 with focus on Tier2 and Tier3 customers.

Retailer Loans
Launched in 2020 with focus on small retailers.

InstaCard Programme
Launched in 2020, it offers a continuous credit line to over 1 lakh+ customers

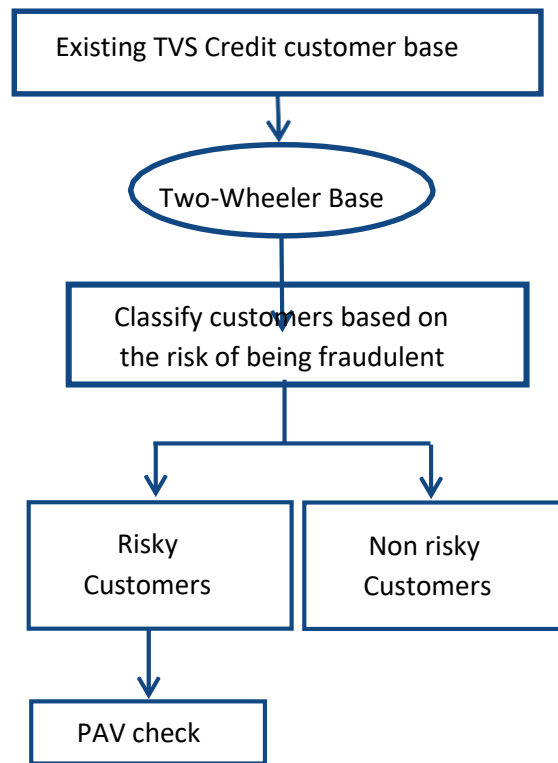## Post Asset Verification (PAV) on Two Wheeler Customer Base

One of the most prominent risk for a company engaged in consumer lending is giving loans to fraudulent customers. A fraudulent customer is someone, who either avails a loan without any intention of repaying it or someone who purposefully gives wrong information at the time of loan application.

One of the activities undertaken by TVS Credit to control fraud at the customer level is Post Asset Verification (PAV) check. In the Post Asset Verification check activity, an employee of TVS Credit visits the customer at his given address soon after the loan has been disbursed to check:

a. If the customer and the asset (Two-Wheeler) that was funded is present at the given address; and
b. If the model of the asset is the same as what is mentioned in the loan application.

Since this check requires an employee to visit the customer's address to verify the details, the cost of this activity is high. It is not feasible for the company to do the PAV check for each and every single customer hence, this activity earlier was carried out only for a small proportion of new Two–Wheeler Loan customers who were chosen at random.

The objective of this case study is to use analytics to identify the segment of customers, who have a higher probability of being fraudulent. This would help the company in reducing the cases of fraud.

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flowchart
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Existing TVS Credit customer base

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Two-Wheeler Base

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Classify customers based on the risk of being fraudulent

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Risky Customers | Non risky Customers

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PAV check

Data Dictionary

Feature	Feature Definition
V1	Customer ID
V2	Date of disbursal of loan
V3	Payment Type
V4	Area Code
V5	Pin code
V6	State
V7	Dealer Type
V8	Product Code (SC: Scooter, MO: Moped, MC: Motorcycle, EB: Electric Bike)
V9	Tenure
V10	Rate of Interest
V11	EMI
V12	Processing Fee
V13	Asset cost
V14	Loan Amount
V15	Gender
V16	Qualification
V17	Employment type (SAL: Salaried, AGR: Agriculture, HOW: Housewife, OTH: Others, STU: Student, SEP: Self-employed, PEN: Pension)
V18	Residence Type (O: Owned, R: Rented, L: Leased)
V19	Age

V20	CIBIL Score
V21	Net Salary
V22	Net Internal Rate of return
V23	Target Variable: 1/0 (1: Fraudulent; 0: Not fraudulent)

Note: Data transformation methods were applied on the numeric variables.