

# XYZ Business Review

Poojitha Vijjapu



# Overview

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# Introduction

Available information is the performance summary with some of XYZ company's loan performance - summarized by merchant.

Every merchant is paying a 2% MDR (merchant discount rate) to Company XYZ for each transaction.

<i>Column Name</i>	<i>Description</i>
category / Subcategory	merchant's industry
name	name of the merchant
merchant_id	unique identifier for the merchant
actual_repayment_pct	actual percentage of loan volume that is repaid
predicted_repayment_pct	predicted percentage of loan volume that is repaid
num_trxn	number of loans per merchant
auth_amt	total amount of user requests / apply for
loan_amt	total amount of the loan that is issued to the user
fico	score that measures a user's risk, higher score- less risk
term	duration of the loan
apr	annual percentage rate (interest rate charged to the user)

*Column names and their description*



# Data Description

Snippets of the datasets available

merchant\_category\_mapping

category	subcategory	merchant_id
WOMENS_FASHION	Women's Clothing Stores - 448120	78986
HOME_FURNISHINGS	Furniture Stores - 442110	54871
#N/A	Women's Clothing Stores - 448120	86469
OTHER	Musical Instrument and Supplies Stores - 451140	42719
JEWELRY	Jewelry Stores - 448310	40242
WOMENS_FASHION	Women's Clothing Stores - 448120	11801

merchant\_name\_mappi

name	merchant_id
UCXMYZC	42733
OQFYEDO	28833
LVMCHQE	83007
QIGSCCQ	66431
DCZPIEU	61453
GHSPWDG	90024

performance\_dataset

merchant_id	actual_repayment_pct	predicted_repayment_pct	num_trxn	avg_auth_amt	avg_loan_amt	avg_fico	avg_term	avg_apr
78986	0.927466048	0.948424716	6331	491.650278	473.727737	643	8	0.251198
54871	0.983798199	0.978641401	3293	862.99671	862.555109	715	6	0
86469	0.936781581	0.965042373	2670	636.689936	620.229734	664	8	0.214657
42719	0.96174276	0.945634244	570	719.714054	692.877934	655	10	0.257577
40242	0.867272663	0.902407609	317	380.978427	374.832065	626	9	0.160714
11801	0.822480349	0.900832479	309	179.416385	177.013298	645	7	0.24862



# Problem Statement

1. Based on the data, which categories generate the most profit for Company XYZ?
2. What merchant pricing strategy will you come out to increase/decrease MDR for better overall profitability?



# Data Cleaning and Manipulation

## Merging Dataframes

Merged the 3 dataframes based on common values

## Missing Values

Filled missing Category values based on Subcategory values

## Erroneous Values

Replaced some Category values 'Other' based on Subcategory values

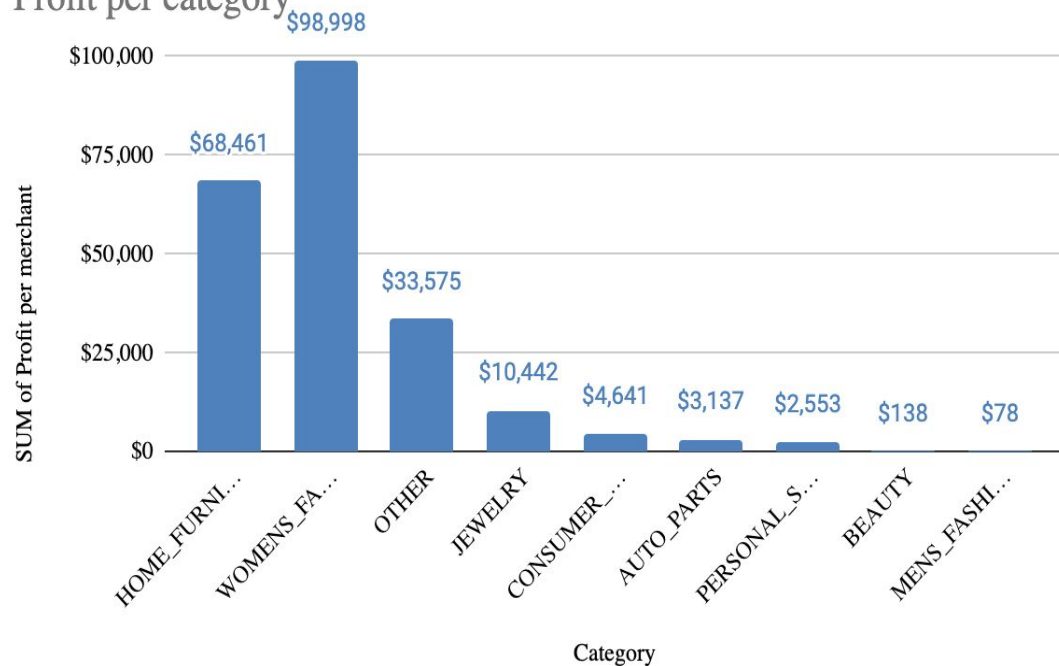
## New Columns

Added new columns - Total Loan Amt, Profit, Profit Bucket, FICO Bucket to perform various required Analysis



# Profit by Category

Profit per category



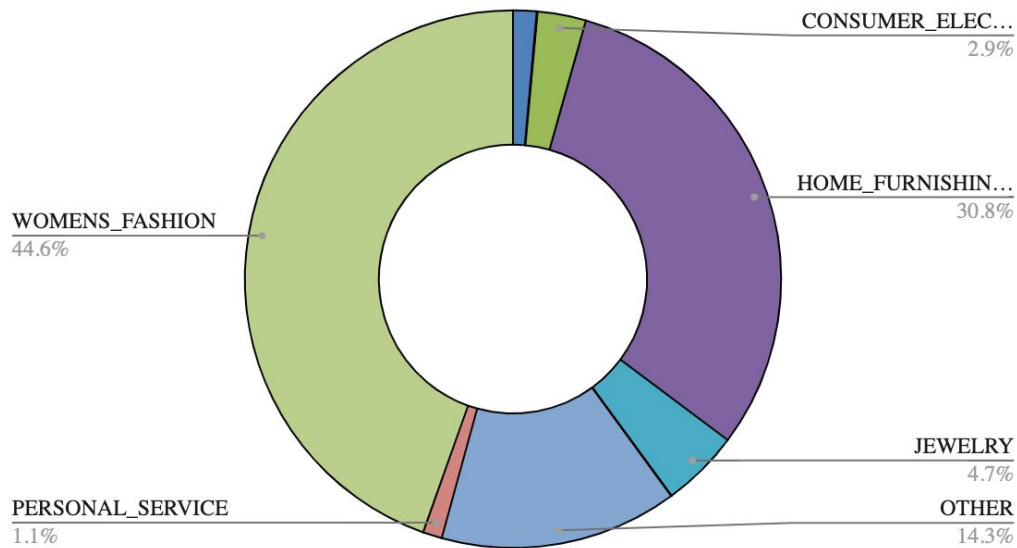
- Top categories that drive profit for XYZ :
  - Womens\_fashion (~\$99k)
  - Home and Furnishings (~\$68k)
  - Other (~\$34k)

*Women's Fashion drives most of the Profit for the company*



# Profit Share by Category

Total Profit by Category



- Profit share by categories
  - Womens\_fashion (~45%)
  - Home and Furnishings (~31%)
  - Other (~15%)
- Top 2 categories drove ~86% of profit driven by both higher # of transactions and Avg Loan amount





# Classifications Created :

- Below are few groupings to note :
  - Fico [Based on US consensus] :
    - Good (>680)
    - Okay (600-680)
    - Bad (<600)
  - Merchant segment :
    - High (>5000 profit; >250k loan amount)
    - Medium (>1000 profit ; >50k loan amount)
    - Small (<1000 profit ; <50k loan amount)



# Initial Findings

- Less number of transactions happen within High segment but drive most of the profit
- Most of the merchants have Good (~24%) or Okay (~72%) Fico score

COUNT of merchant_id Profit Bucket	Fico Bucket			Grand Total
	Bad	Good	Okay	
High			1	3
Medium			5	17
Small		5	28	84
Grand Total		5	34	104



# Profit distribution

<i>Profit Bucket</i>	Good	Okay	Bad	Grand Total
High	25.59%	45.49%		71.08%
Medium	4.92%	13.91%		18.83%
Small	2.96%	7.07%	0.07%	10.09%
<b>Grand Total</b>	<b>33.46%</b>	<b>66.47%</b>	<b>0.07%</b>	<b>100.00%</b>

Currently the profit is highly skewed toward high segment merchants with Okay Fico score



# Recommendations

- Incentivize High sized merchants with Good fico score by ***reducing the MDR*** so we still capture most profit from these High Life time users
- Increase the MDR for Medium sized merchants with Okay Fico score as its risky and we are processing more transactions for less profit (given small loan amount)
- Bring in tiered approach to MDR by accounting for risk/reward
  - High sized merchants with Good Fico get the best MDR
  - Incentivize Medium sized merchants with Good Fico to become High sized by offer lower MDR's (Low risk & High Reward)
  - Repayment % can be additional gauge to see if we can update merchants through segments before Fico updates
    - Ex : If medium merchant with okay fico has better repayment rate move them to good fico bucket and offer that MDR