Dr. Tariq Mahmood

Takaful Data Analysis

DASHBOARD & EDA (PYTHON) QAISAR ALI SHAH

Dear Sir,

Assalam O Alaikum

The following is walkthrough of dashboards (Total 4) for the Takaful dataset assignment. Other than this, I have also performed some EDA in python.

Problem: What are the healthy and unhealthy payment patterns in Takaful policies?

Dashboards

- Executive Summary
- Payment Patterns
- Customer Analysis
- Additional Drilldown

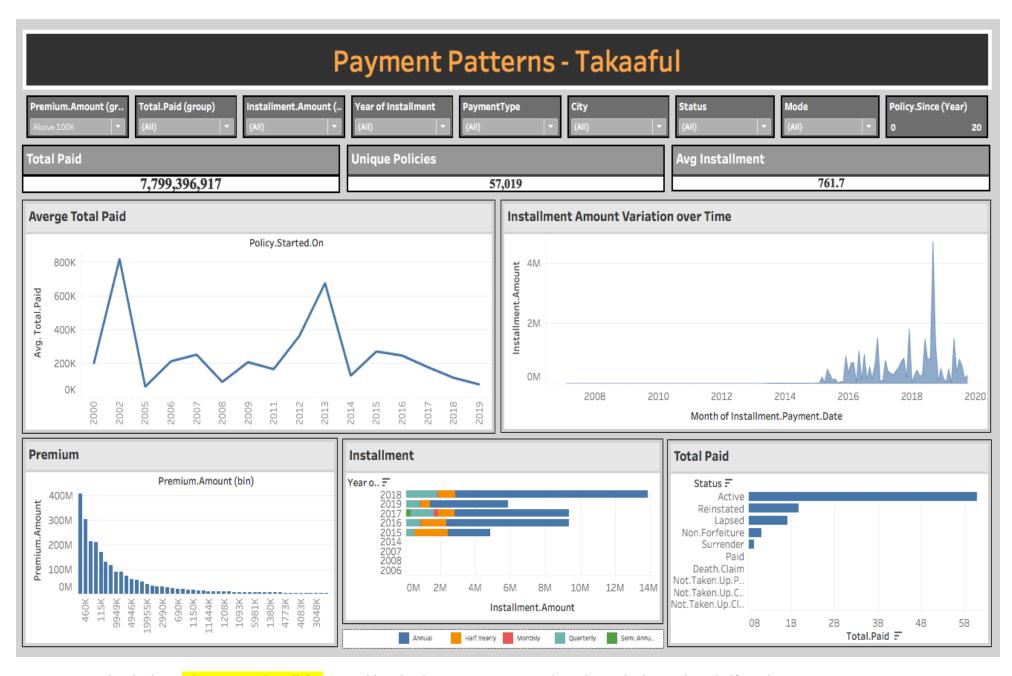
You can find the filters (more than 8) and score cards on every dashboard.

Python EDA (attached separately)

- Categorical variable analysis
- Numerical Variable Analysis
- Binning/Grouping variables
 - New columns added
- Missing Values
- Correlation
 - o Heatmap
 - Scatter Plot

Executive Summary - Takaaful Policy.Since (Year) **Installment Year BasicPlan** Weight Agent Age Group **PaymentType** (AII) **Total Paid Unique Policies** Avg Installment 7,799,396,917 57,019 761.7 **Payment Patterns** Plans of Inusrance **Geographical Patterns** Installment.Payment.Date BasicPlan Super.Savings Afghanistan 8K Avg. Installment.Amount Savings 6K Investment Children 4K Family.Future.Security Puniab Prosperity 2K General.Consumer 0K Gold.Savings Education Pakistan Education.Matrimonial 300K Avg. Total.Paid Hajj.Umrah Rajasthan Life.Insurance Financial.Company Guardianship Individual Bright.Future 100K 1,671,573,974 Collective.Savings 0K 1000M 1500M 2015 Gujarat 113 unknown 2017 Premium.Amount = © 2020 Mapbox © OpenStreetMap

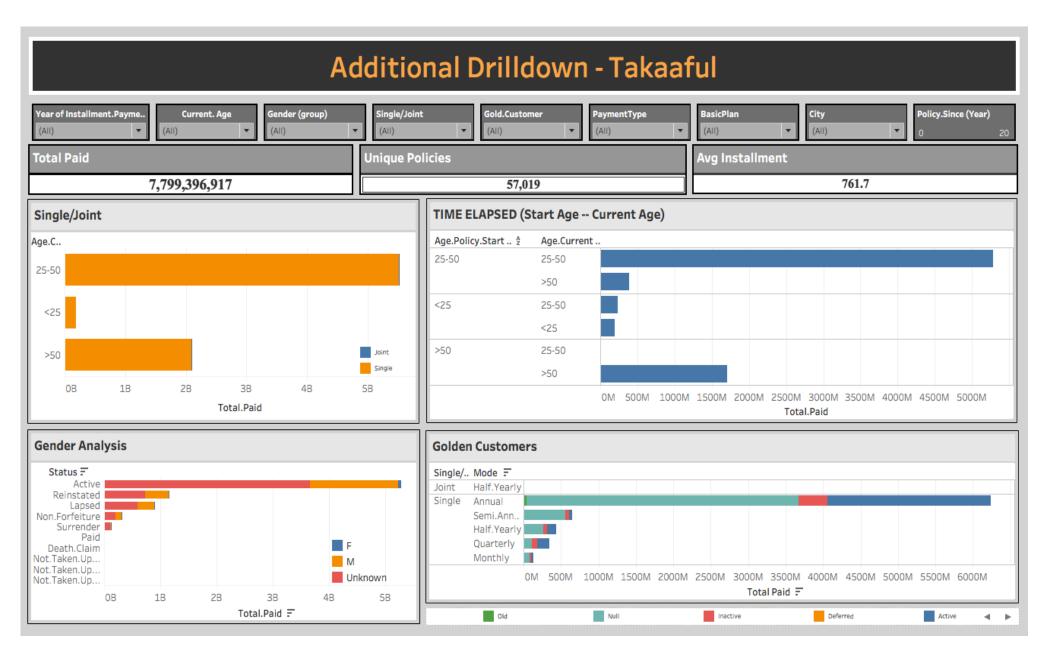
- There has been a spike in payments in 2013, followed by a consistent down-curve
- Customers from Karachi and a few other urban structured cities are outperforming others in total payments.
- Best plans of insurance have been "super saving" and "savings" plan.
- "Financial Company" agents have brought the highest sales.



- People who have taken "Annual" policies are making timely payments compared to others who have taken "half yearly" etc.
- The premium amount distribution shows a right-skewedness
- Active customers are bringing in more money, only few "Death Claims" and "Surrender" status of policies.

Customer Analysis - Takaaful Policy.Since (Year) BasicPlan No. of Assets Current. Age Weight (KG) Status PaymentType (AII) (AII) **Total Paid Unique Policies** Avg Installment 7,799,396,917 57,019 761.7 **Policy Since: Policy Status** TIME ELAPSED (Start Age -- Current Age) Age: No of Assets Age.Policy.Start .. 2 Age.Current (group) Age.Current .. Assets (gro.. 25-50 <25 >50 25-50 Premium.Amount 2B >10 >50 <25 25-50 5-9 1B-<25 0B >50 25-50 5 10 15 20 2B 4B 0B 2B >50 Policy.Since (Year) Total.Paid Total.Paid = Total.Paid 0B 2B 4B Total.Paid Individual Financial.Company **Policy Status** Customer Age: Basic Plan Customer.Age.Current Number of Records 800 600 Lapsed 68.49% 19.07% Bright.Future Collective.Sav.. Family.Future.. General. General ▼ ▶ Children Education Education.Ma..

- Healthy payments by customers who have had the policy for only a few years (0-5 years).
- People making more payments have shown to have less than 4 assets mostly
- Choice of agent for healthy payments remains "Financial Company"



- Time elapsed here tells that customers who aged 25-50 when buying a policy(start.Age), are currently aging between 25-50 and making healthy paymnets.
- "Single" policy customers are making hefty amount of payments
- Most payments are bought by "Male" however the "unknown" group holds the highest number. My assumption is males have more policies.
- Golden customers fall mostly in the 'Null' category, followed secondly by "Active" in the policy group.