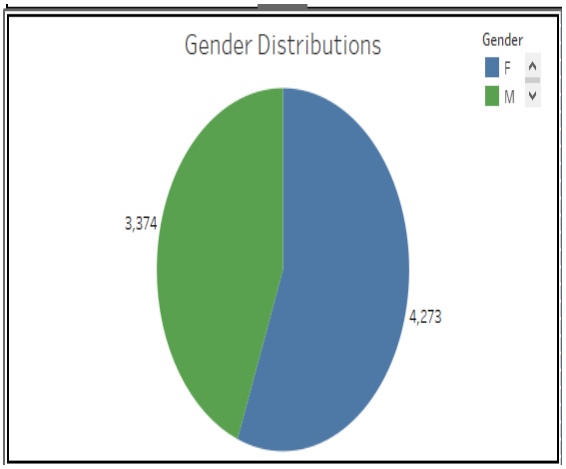
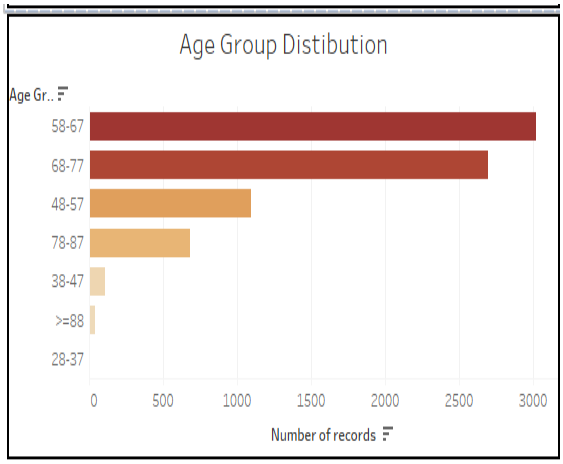
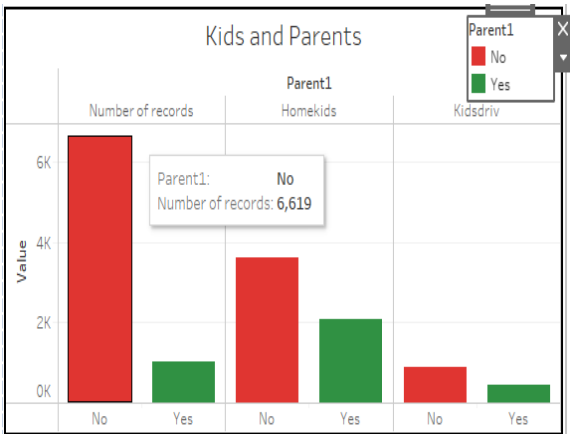
DATA VISUALIZATION TABLEAU TASK

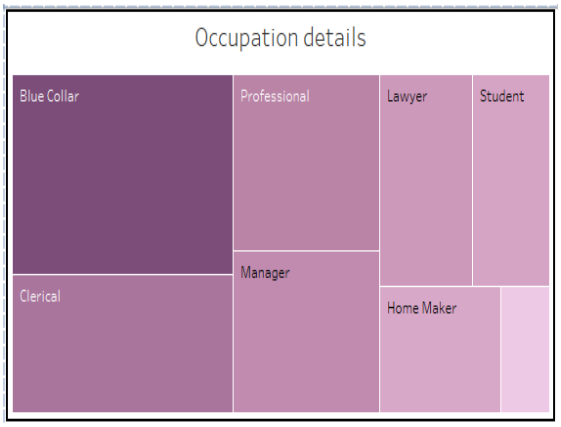
DVT PROJECT

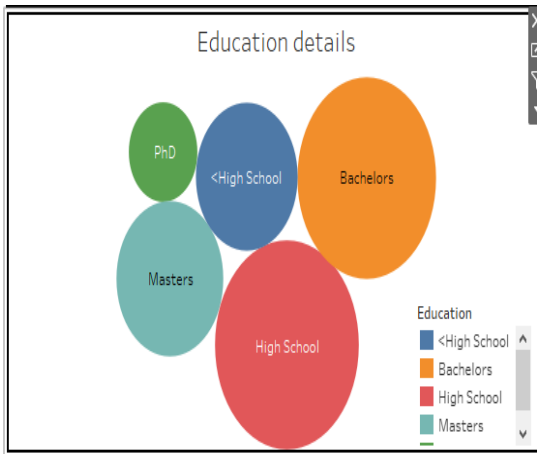
1. Creation of multiple charts and tables for representing useful insights/findings. The charts used should be inline with the objective that you wish to convey to the Senior Management. [Mandatory 8 types of charts/tables from any of the following: text table, bar chart(multiple/stacked/side by side), bubble chart, treemap, Pareto chart, scatterplot, Wordcloud, line plot, histogram, boxplot, circle views, heatmap, highlighted tables. No restrictions on the upper limit of the number of charts/tables to be used]

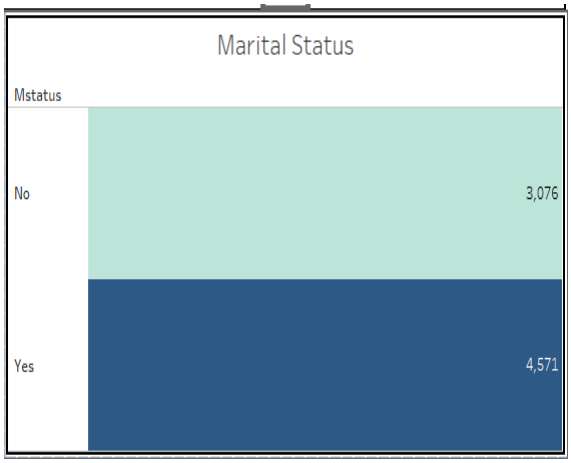


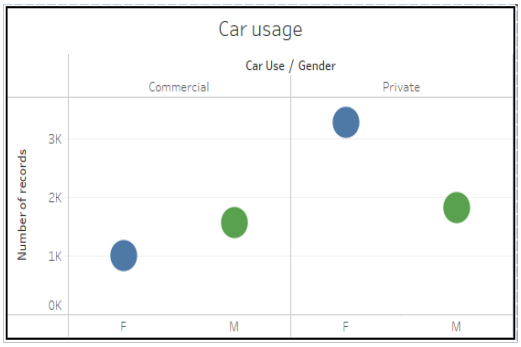












Car Type

Car Type	
Minivan	2,136
Panel Truck	442
Pickup	1,283
Sports Car	920
SUV	2,264
Van	602

DATA UNDERSTANDING:

- **Pie chart**- The Gender distribution shows female customer are more than the male customers.
- **Horizontal Bar chart**- Most of the customers are from the age group of 48-77.
- **Side-by-side Bar Graph**- Most of the parents don't have kids.
- **Tree maps**- Majority of the customers occupation is Blue collar and the minority is doctors.
- **Bubble chart**- Most of the customers have completed high school education and only few customers have completed PhD.
- **Highlight tables**- Majority of the customers are married.
- **Side-by-side circle**- Private cars used by female are higher than the commercial.
- **Text tables**- SUV is the most frequently used car type.

2. Creating a calculated field. The calculated field should add some meaningful value and should be inline with your storyboard which you will create in this project. (Specify where calculated field has been used)

✓ Rank is calculated manually by writing a formula given below to compute the Top N Ranks of the customer based on claim frequency.

RANK_UNIQUE(SUM([Clm Amt]),[Top/Bottom])

✓ Index is created using **INDEX()**

✓ Age is calculated using

if [Birth]>DATEADD('year',-DATEDIFF('year', [Birth],TODAY()),TODAY())THEN DATEDIFF('year',[Birth],TODAY())-1 ELSE DATEDIFF('year',[Birth],TODAY()) END

✓ Age Group is calculated using

IF[Age]>=28 AND [Age]<=37 THEN "28-37" ELSEIF[Age]>=38 AND [Age]<=47 THEN "38-47" ELSEIF[Age]>=48 AND [Age]<=57 THEN "48-57" ELSEIF[Age]>=58 AND [Age]<=67 THEN "58-67" ELSEIF[Age]>=68 AND [Age]<=77 THEN "68-77" ELSEIF[Age]>=78 AND [Age]<=87 THEN "78-87" ELSEIF [Age]>=88 THEN ">=88" END

3. Use of filters, parameter, actions, etc in the charts.

PARAMETERS AND RESPECTIVE CALCULATED FIELDS

✓ Top N- Current value:10

- ✓ Multi-Dimensional View- Education, car type, occupation, gender, parent1, mstatus, urbanicity and car use.
- ✓ Multiple Parameters- Income, old claim and claim amount
- ✓ Claim Categories- contains car age, YOJ, claim frequency, homekids and kidsdriv columns.
- ✓ Claim Amount and Old claim – contains claim amount and old claim amount column.
- ✓ Claim Amount and Claim Frequency – contains claim amount and claim frequency columns.
- ✓ Claim based on multiple categories

  CASE [Claim Categories] WHEN "Car Ages" THEN[Car Age] WHEN "YOJ" THEN [YOJ] WHEN "Claimed Frequency" THEN [Clm Freq] WHEN "Homekids" THEN [Homekids] WHEN "Kidsdriv" THEN [Kidsdriv] END
- ✓ Claim based on multiple dimensions

  CASE [Multi-Dimensional View] WHEN "Education" THEN [Education] WHEN "Car Type" THEN [Car Type] WHEN "Occupation" THEN [Occupation] WHEN "Car Use" THEN [Car Use] WHEN "Gender" THEN [Gender] WHEN "Parent1" THEN [Parent1] WHEN "Mstatus" THEN [Mstatus] WHEN "Urbanicity" THEN [Urbanicity] END
- ✓ Claim Amount and Old claim

  CASE [Parameters].[Claimed & Old Claim] WHEN "Clm Amt" THEN [Clm Amt] WHEN "Oldclaim" THEN [Oldclaim] END
- ✓ Claim Amount and Claim Frequency

  CASE [Claim Amt & Freq] WHEN "Clm Amt" THEN [Clm Amt] WHEN "Clm Freq" THEN [Clm Freq] WHEN "Oldclaim" THEN [Oldclaim] END
- ✓ Top N

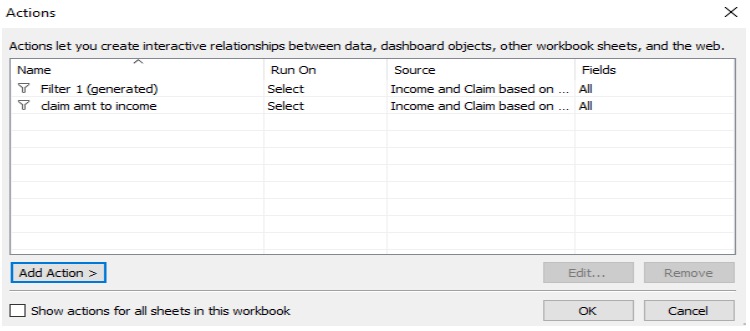
  [Rank]<=[Top N]
- ✓ Multiple Parameters

  CASE [Multi Param] WHEN "Oldclaim" THEN [Oldclaim] WHEN "Income" THEN [Income] WHEN "Clm Amt" THEN [Clm Amt] END

FILTERS:

- ➢ ID
- ➢ Education
- ➢ Occupation
- ➢ Car Type

ACTIONS

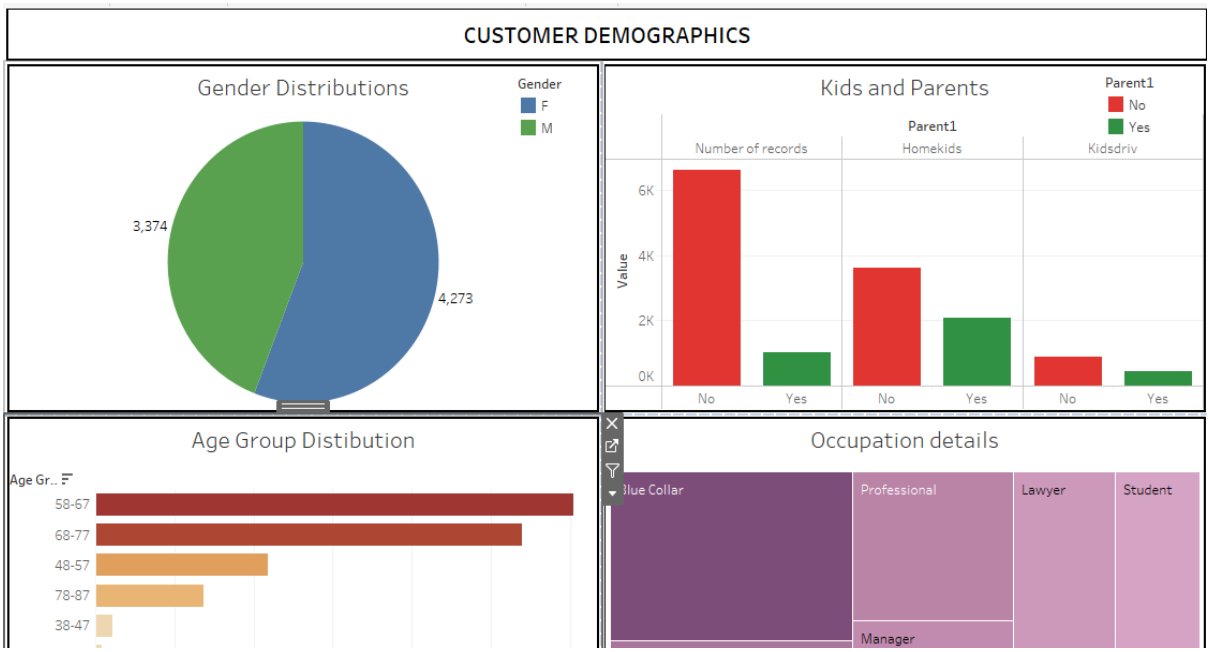


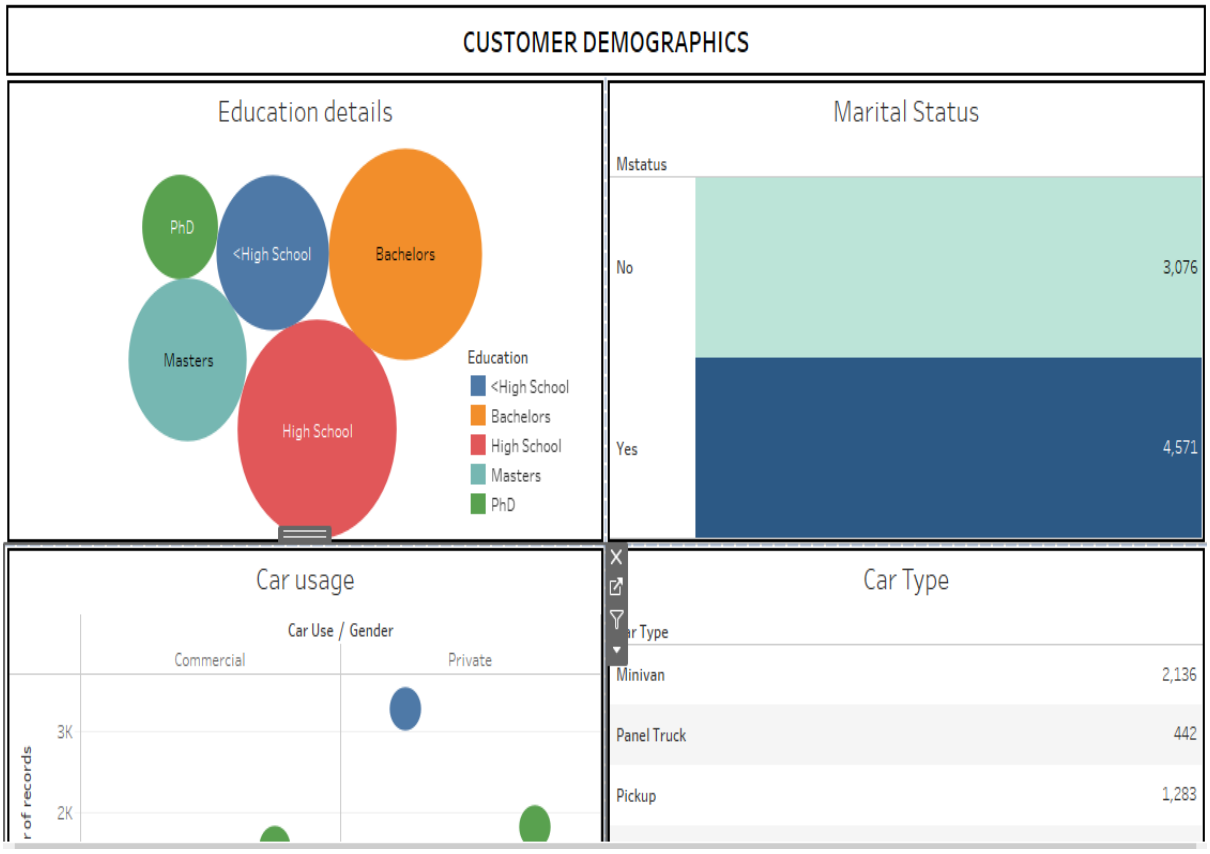
4. Minimal clutter and consistency in use of colours across charts.

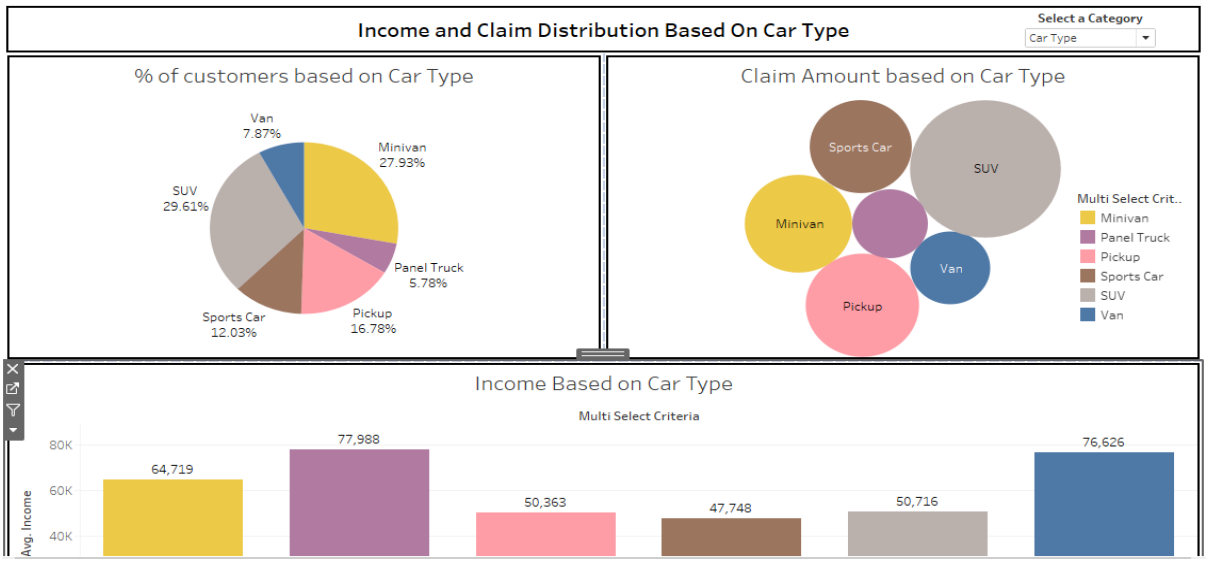
All the charts are made with color code based on various feature. For eg: Chart created based on claimed amount and car age, but the color frequency was given based on the travel time.

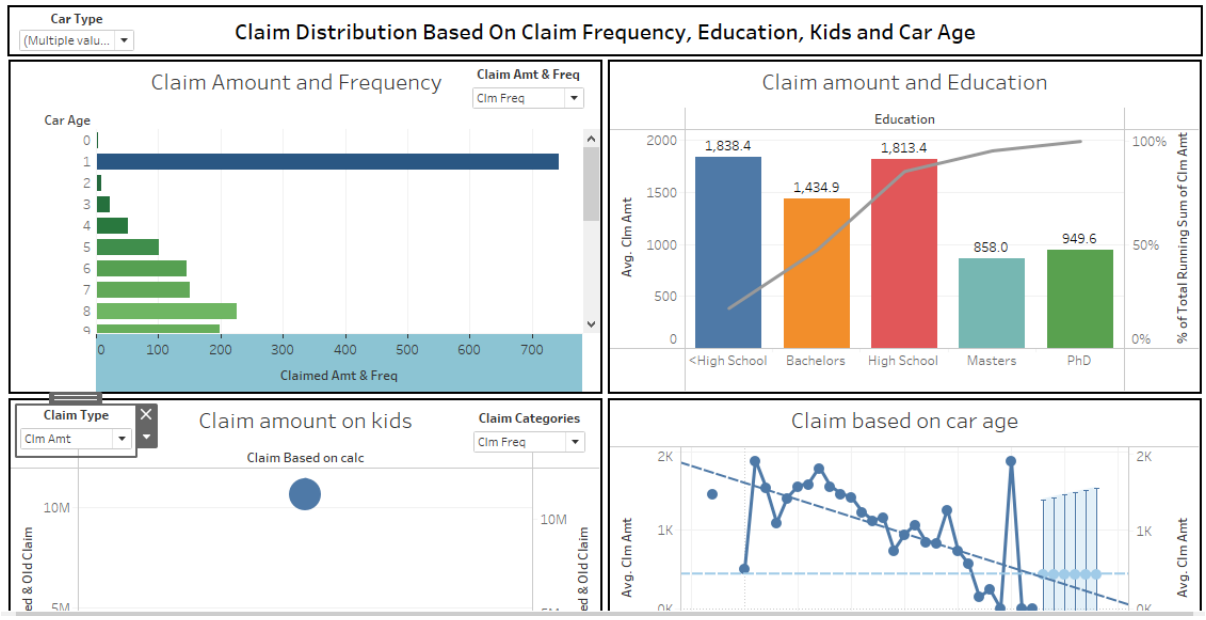
5. Multiple Dashboards creation (At least 5 Dashboards)

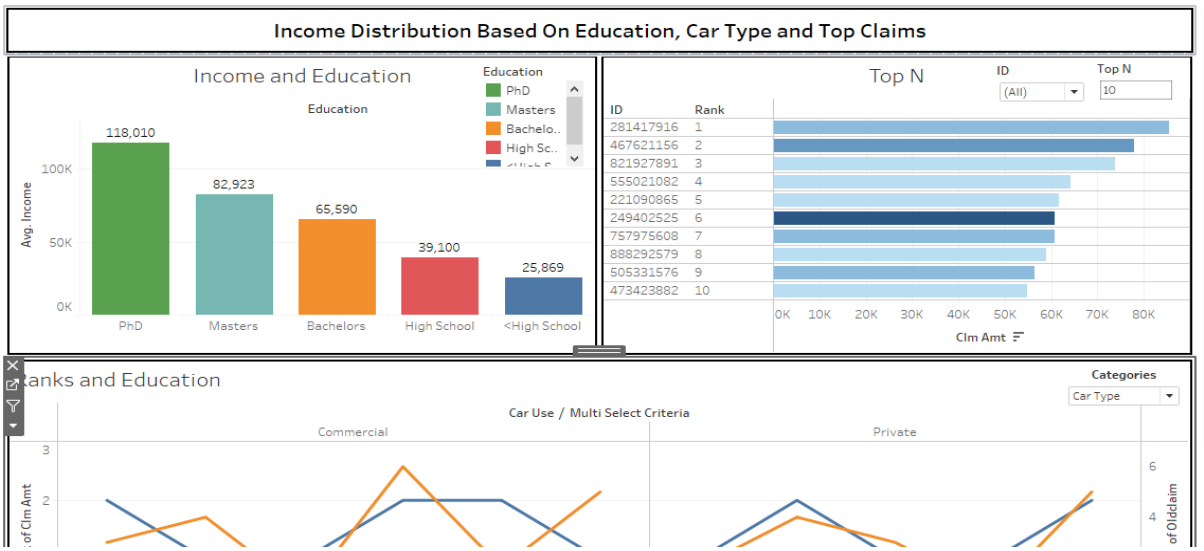
We can download the image of each dashboard using Worksheet->Export

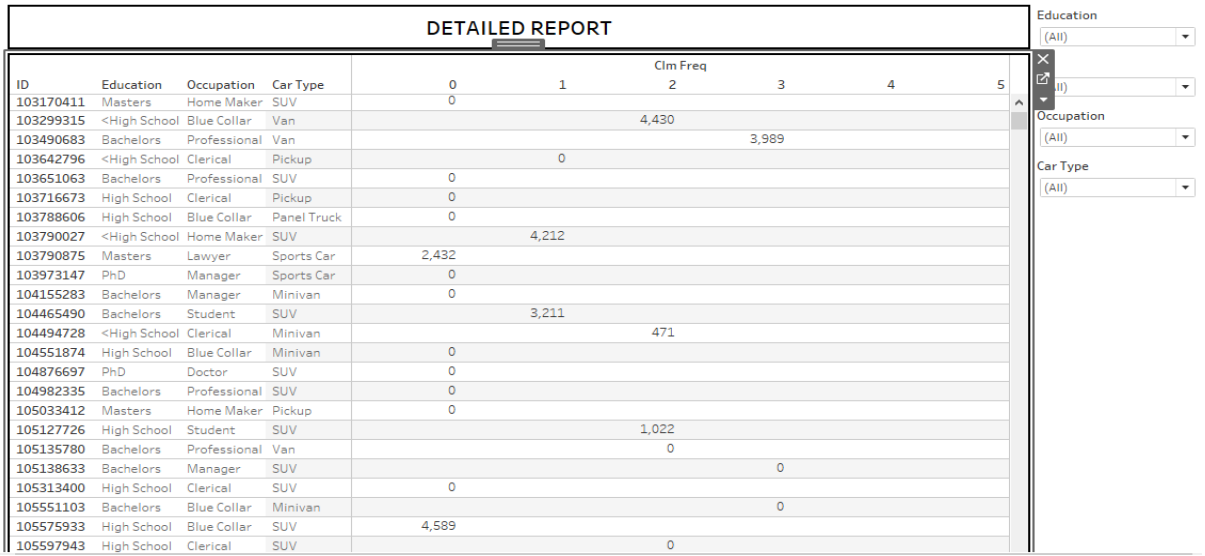





Income and Claim Distribution Based On Car Type
Select a Category
Car Type
% of customers based on Car Type
Van 7.87%
Minivan 27.93%
SUV 29.61%
Panel Truck 5.78%
Sports Car 12.03%
Pickup 16.78%
Claim Amount based on Car Type
Sports Car
SUV
Minivan
Van
Pickup
Multi Select Crit..
Minivan
Panel Truck
Pickup
Sports Car
SUV
Van
Income Based on Car Type
Multi Select Criteria
Avg. Income
80K
60K
40K
64,719
77,988
50,363
47,748
50,716
76,626


Car Type
(Multiple valu...
Claim Distribution Based On Claim Frequency, Education, Kids and Car Age
Claim Amount and Frequency
Claim Amt & Freq
Clm Freq
Car Age
0
1
2
3
4
5
6
7
8
9
0
100
200
300
400
500
600
700
Claimed Amt & Freq
Claim amount and Education
Education
Avg. Clm Amt
2000
1500
1000
500
0
1,838.4
1,434.9
1,813.4
858.0
949.6
100%
50%
0%
% of Total Running Sum of Clm Amt
<High School
Bachelors
High School
Masters
PhD
Claim Type
Clm Amt
Claim amount on kids
Claim Categories
Clm Freq
Claim Based on calc
10M
5M
ed & Old Claim
Claim based on car age
2K
1K
0K
Avg. Clm Amt

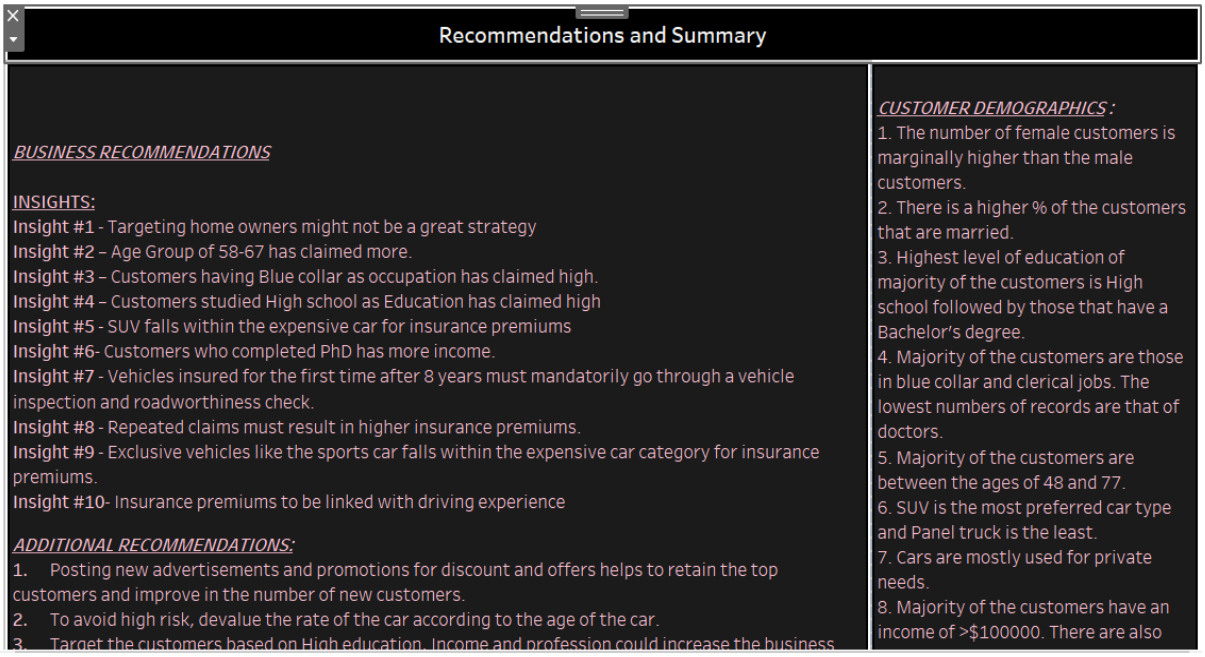

Income Distribution Based On Education, Car Type and Top Claims
Income and Education
Education
PhD
Masters
Bachelo..
High Sc..
Education
Avg. Income
100K
50K
0K
118,010
82,923
65,590
39,100
25,869
PhD
Masters
Bachelors
High School
<High School
Top N
ID
(All)
Top N
10
ID
Rank
281417916 1
467621156 2
821927891 3
555021082 4
221090865 5
249402525 6
757975608 7
888292579 8
505331576 9
473423882 10
0K
10K
20K
30K
40K
50K
60K
70K
80K
Clm Amt
anks and Education
Categories
Car Type
Car Use / Multi Select Criteria
Commercial
Private
of Clm Amt
of Oldclaim



DETAILED REPORT

ID	Education	Occupation	Car Type	Clm Freq 0	1	2	3	4	5
103170411	Masters	Home Maker	SUV	0					
103299315	<High School	Blue Collar	Van			4,430			
103490683	Bachelors	Professional	Van				3,989		
103642796	<High School	Clerical	Pickup		0				
103651063	Bachelors	Professional	SUV	0					
103716673	High School	Clerical	Pickup	0					
103788606	High School	Blue Collar	Panel Truck	0					
103790027	<High School	Home Maker	SUV		4,212				
103790875	Masters	Lawyer	Sports Car	2,432					
103973147	PhD	Manager	Sports Car	0					
104155283	Bachelors	Manager	Minivan	0					
104465490	Bachelors	Student	SUV		3,211				
104494728	<High School	Clerical	Minivan			471			
104551874	High School	Blue Collar	Minivan	0					
104876697	PhD	Doctor	SUV	0					
104982335	Bachelors	Professional	SUV	0					
105033412	Masters	Home Maker	Pickup	0					
105127726	High School	Student	SUV			1,022			
105135780	Bachelors	Professional	Van			0			
105138633	Bachelors	Manager	SUV				0		
105313400	High School	Clerical	SUV	0					
105551103	Bachelors	Blue Collar	Minivan				0		
105575933	High School	Blue Collar	SUV	4,589					
105597943	High School	Clerical	SUV			0			

Education (All)
Occupation (All)
Car Type (All)



Recommendations and Summary

BUSINESS RECOMMENDATIONS

INSIGHTS:
Insight #1 - Targeting home owners might not be a great strategy
Insight #2 – Age Group of 58-67 has claimed more.
Insight #3 – Customers having Blue collar as occupation has claimed high.
Insight #4 – Customers studied High school as Education has claimed high
Insight #5 - SUV falls within the expensive car for insurance premiums
Insight #6- Customers who completed PhD has more income.
Insight #7 - Vehicles insured for the first time after 8 years must mandatorily go through a vehicle inspection and roadworthiness check.
Insight #8 - Repeated claims must result in higher insurance premiums.
Insight #9 - Exclusive vehicles like the sports car falls within the expensive car category for insurance premiums.
Insight #10- Insurance premiums to be linked with driving experience

ADDITIONAL RECOMMENDATIONS:
1. Posting new advertisements and promotions for discount and offers helps to retain the top customers and improve in the number of new customers.
2. To avoid high risk, devalue the rate of the car according to the age of the car.
3. Target the customers based on High education, Income and profession could increase the business

CUSTOMER DEMOGRAPHICS :
1. The number of female customers is marginally higher than the male customers.
2. There is a higher % of the customers that are married.
3. Highest level of education of majority of the customers is High school followed by those that have a Bachelor's degree.
4. Majority of the customers are those in blue collar and clerical jobs. The lowest numbers of records are that of doctors.
5. Majority of the customers are between the ages of 48 and 77.
6. SUV is the most preferred car type and Panel truck is the least.
7. Cars are mostly used for private needs.
8. Majority of the customers have an income of >$100000. There are also

7 dashboards were created.

6. Correct interpretations/insights from each type of chart created. The interpretations should be inline with the storyboard which is to be created in this project. These interpretations can be in the captions of the storyboard or in the plots as well

INSIGHTS:

Insight #1 - Targeting home owners might not be a great strategy

Insight #2 – Age Group of 58-67 has claimed more.

Insight #3 – Customers having Blue collar as occupation has claimed high.

Insight #4 – Customers studied High school as Education has claimed high

Insight #5 - SUV falls within the expensive car for insurance premiums

Insight #6- Customers who completed PhD has more income.

Insight #7 - Vehicles insured for the first time after 8 years must mandatorily go through a vehicle inspection and roadworthiness check.

Insight #8 - Repeated claims must result in higher insurance premiums.

Insight #9 - Exclusive vehicles like the sports car falls within the expensive car category for insurance premiums.

Insight #10- Insurance premiums to be linked with driving experience

ADDITIONAL RECOMMENDATIONS:

1. Posting new advertisements and promotions for discount and offers helps to retain the top customers and improve in the number of new customers.

2. To avoid high risk, devalue the rate of the car according to the age of the car.

3. Target the customers based on High education, Income and profession could increase the business.

SUMMARY

1. The number of female customers is marginally higher than the male customers.

2. There is a higher % of the customers that are married.

3. Highest level of education of majority of the customers is High school followed by those that have a Bachelor's degree.

4. Majority of the customers are those in blue collar and clerical jobs. The lowest numbers of records are that of doctors.

5. Majority of the customers are between the ages of 48 and 77.

6. SUV is the most preferred car type and Panel truck is the least.

7. Cars are mostly used for private needs.

8. Majority of the customers have an income of >$100000. There are also records of customers with no income.

9. Majority of the customers do not have parents.

10.Majority of the customers do not own a house.

INSIGHTS

1. The customers who don't own a home must be from other natives and not from urban city.

2. Increase in education level results in a decrease in the claims.

3. Higher % of claims with high income category is from expensive cars owners.

4. Majority of the claims are above the age of 58, indication of which is an increased risk.

5. SUV is a highly preferred vehicle with a high number of claims and it's a risk profile.

6. First time drivers seems to be of a high risk profile.

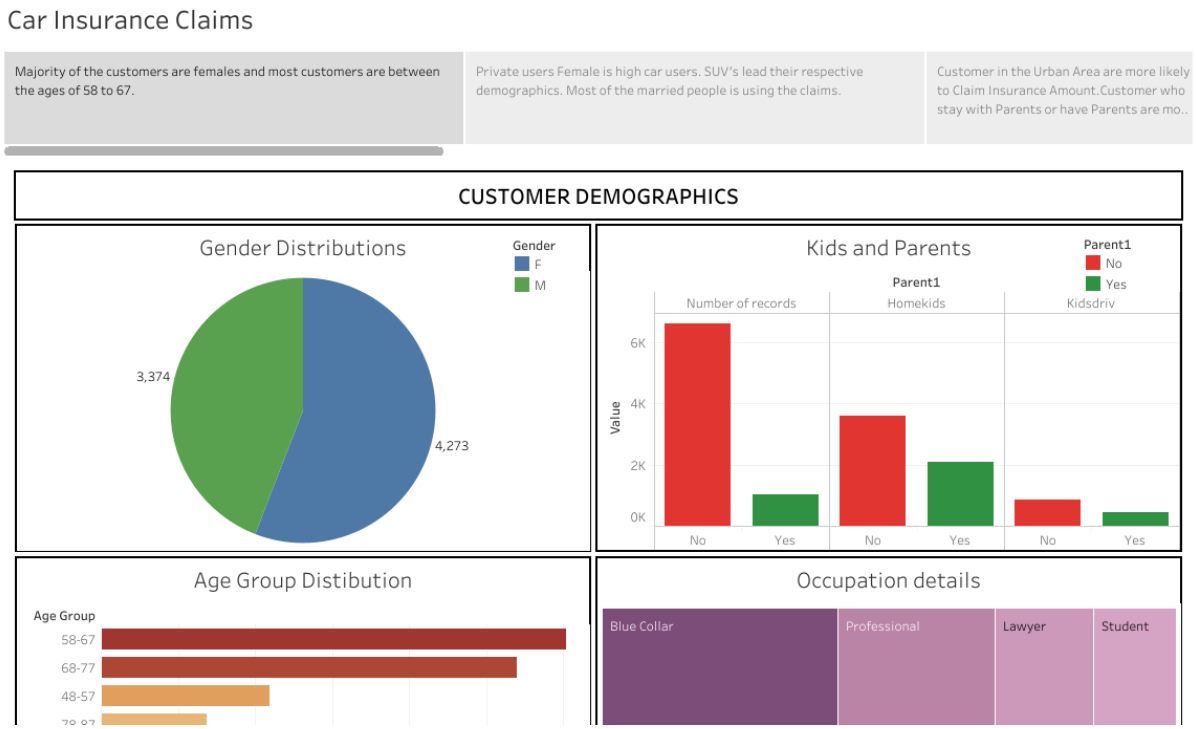
7. Registering for insurance after 9 years, also results in large number of claims.

8. Increased claim frequencies from the same customers indicate high risk.

7. Interactivity among the charts on each Dashboard

The dashboard Income and claim based on multiple categories and dimensions is interactive. Once you click on particular category in a variable, the rest of the following charts will be coming based on the above selection. Also the storyboard is interactive. We can move from one dashboards to the other dashboards by clicking on the story.

8. 1 Storyboard Creation



9. Logical flow to the story represented in the storyboard.

- Initial step is to understand the data by showing the demographics of the customers by Gender, Education, Age, Parents and Kids, Occupation details, Marital status, car usage and car type.
- Followed by visualizing the claim amount, income and % of customers based on Gender, Education, Age, Parents, Urbanicity, Occupation details, Marital status, car usage and car type. We can drill down the level and see.
- The claim distribution is shown for car age based on claim amount and claim frequency.

- Claim amount based on Education level and car age.
- Income based on Education is shown.
- Claim amount and old claim amount is compared based on having kids and parenting, YOJ, Claim frequency and car age.
- Car usage based on multiple categories like Gender, Education, Age, Parents, Urbanicity, Occupation details, Marital status, car usage and car type.
- Top N ranks of the ID is shown to know the top customers.
- Detailed Reports of the data is clearly shown.
- Finally, the insights, summary and business recommendations are given.

10. 1 dashboard which will cover the summary and the recommendations from the insights to be added to the end of the storyboard. This dashboard will be an extra dashboard apart from the mandatory 5 dashboards mentioned in the 5th part of the rubric. At least 5 summary/recommendation points from each dashboard. 1 point for the conclusion. This dashboard has to be a part of the story board created and not to be submitted separately. Note: This will not be evaluated if submitted as a separate dashboard/storyboard.

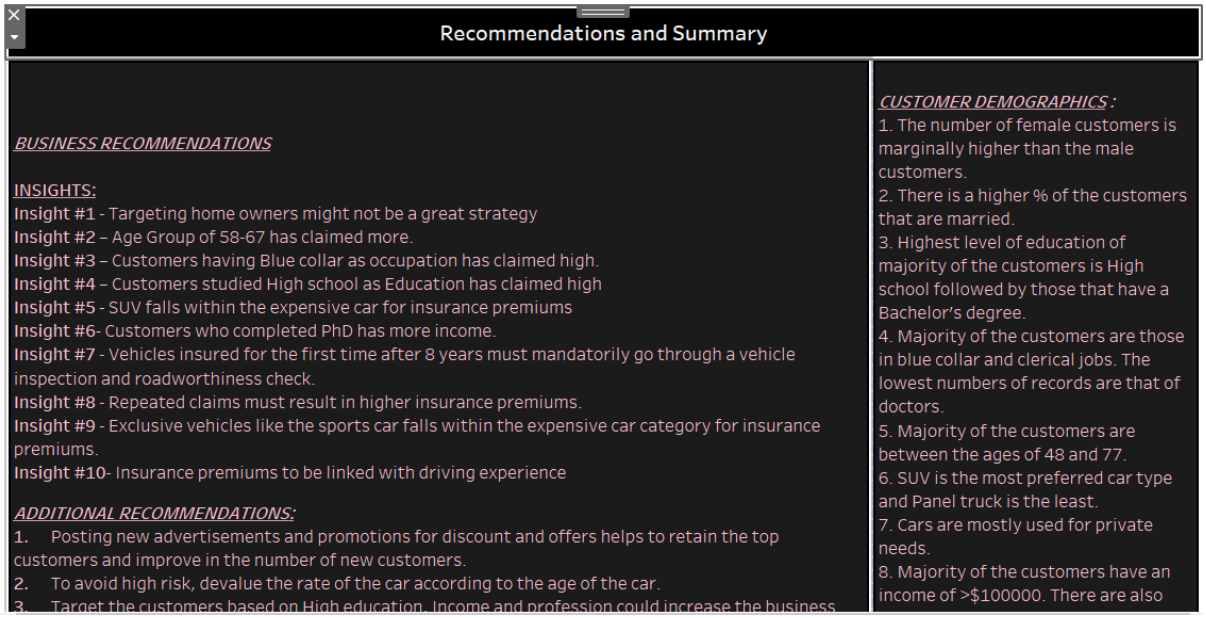


Tableau Public 2020.2 -
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