

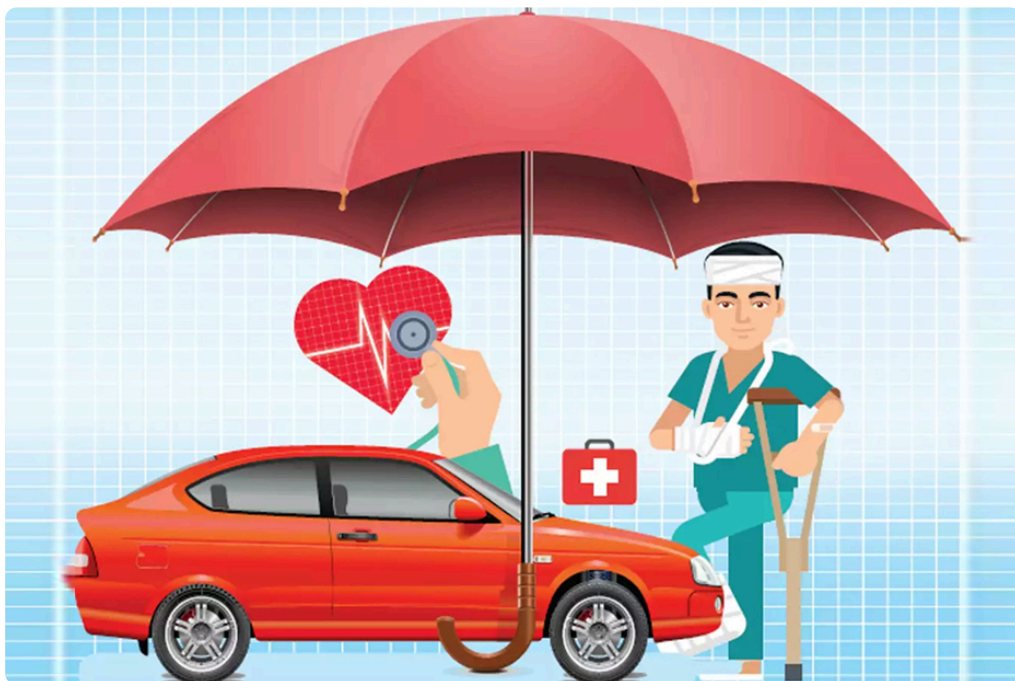
## Dashboard

Select Page

Introduction



The `use_column_width` parameter has been deprecated and will be removed in a future release. Please utilize the `use_container_width` parameter instead.



## Introduction

Welcome to our Health Insurance Cross-Sell Dashboard! 🏥



Wondering what is the relation between Health and Vehicle insurance? 🤔

Our company is a Health insurance company who is looking to improve their revenue model by expanding into a new sector: Vehicle Insurance.

### Objectives

- Analyse the potential customer base for Vehicle Insurance.
- Predict the selling price of Vehicle Insurance that will benefit the revenue model most.

No. of Rows

5



View from top (head) or bottom (tail)



Head



Tail

	id	Gender	Age	Driving_License	Region_Code	Previously_Insured	Vehicle_Age	Vehicle_Da
0	1	Male	44	1	28	0	> 2 Years	Yes
1	2	Male	76	1	3	0	1-2 Year	No
2	3	Male	47	1	28	0	> 2 Years	Yes
3	4	Male	21	1	11	1	< 1 Year	No
4	5	Female	29	1	41	1	< 1 Year	No

(Rows,Columns)

(381109, 12)

Key Variables

- Gender of the customer
- Age of the customer
- Does the customer possess a Driving License
- Region of the customer
- Does the customer possess a Health insurance
- Age of the Vehicle
- Did the customer damage vehicle in past
- How much does customer pay for premium (INR)
- How long has the customer been associated with the company

From all these variables we wim to predict a price that the customers would be willing to pay for Vehicle Insurance.

Analysing the relationships between such as 'Vehicle Damage' and 'Previously\_insured' with 'Response' will help us define our target audience.

Analysing relationships between 'Region' and 'Age' with 'Price' will help us define a price point.

Description of Data

	id	Age	Driving_License	Region_Code	Previously_Insured	Annual_Premium	Policy_
count	381109	381109	381109	381109	381109	381109	
mean	190555	38.8226	0.9979	26.3888	0.4582	30564.3896	
std	110016.8362	15.5116	0.0461	13.2299	0.4983	17213.1551	
min	1	20	0	0	0	2630	
25%	95278	25	1	15	0	24405	
50%	190555	36	1	28	0	31669	
75%	285832	49	1	35	1	39400	
max	381109	85	1	52	1	540165	

Descriptions for all quantitative data (rank and streams) by:

Count

- Mean
- Standard Deviation
- Minimum
- Quartiles
- Maximum

Missing Values

Null or NaN values.

Percentage of total missing values: 0.0

	0
Age	0
Driving_License	0
Region_Code	0
Previously_Insured	0
Vehicle_Age	0
Vehicle_Damage	0
Annual_Premium	0
Policy_Sales_Channel	0
Vintage	0
Response	0

We have less then 30 percent of missing values, which is good. This provides us with more accurate data as the null values will not significantly affect the outcomes of our conclusions. And no bias will steer towards misleading results.

Completeness

The ratio of non-missing values to total records in dataset and how comprehensive the data is.

Total data length: 381109

Completeness ratio: 12.0

	0
id	381109
Gender	381109
Age	381109
Driving_License	381109
Region_Code	381109
Previously_Insured	381109
Vehicle_Age	381109
Vehicle_Damage	381109
Annual_Premium	381109
Policy_Sales_Channel	381109

We have completeness ratio greater than 0.85, which is good. It shows that the vast majority of the data is available for us to use and analyze.

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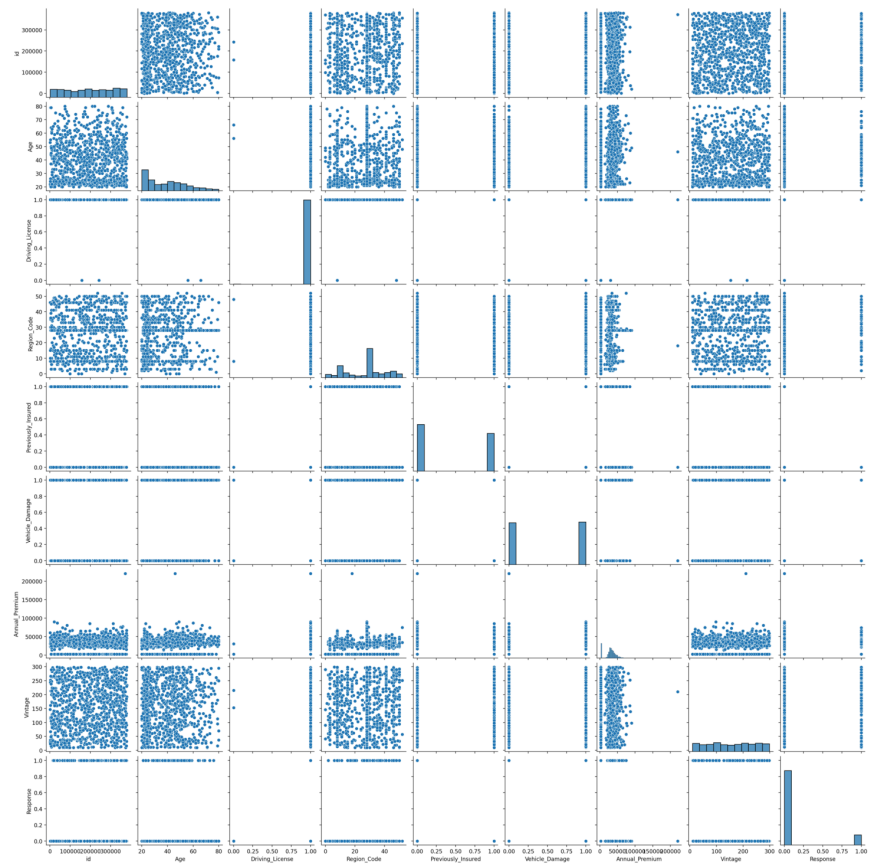
Visualization



# Visualization

SNS Plot Bar Chart Line Chart Pie Plot

## SNS plot



Dashboard

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Visualization

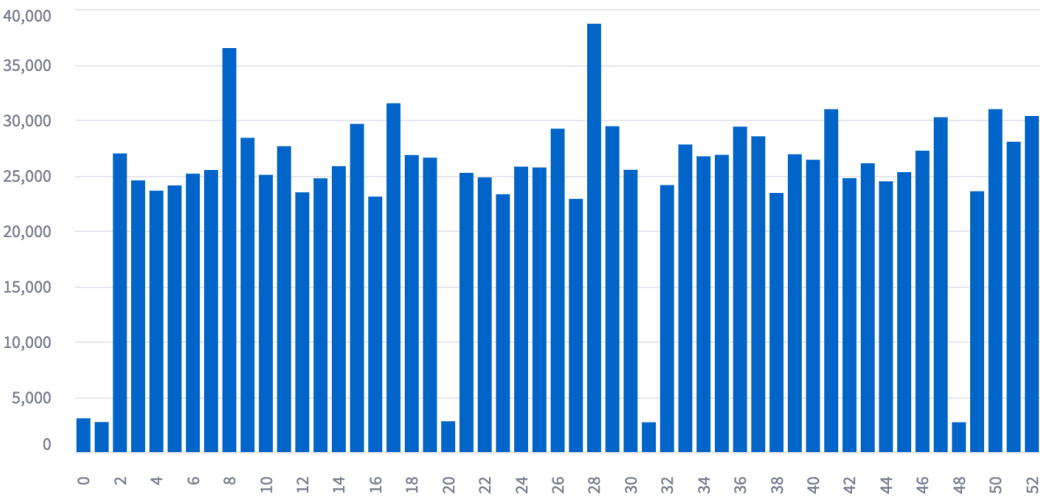
# Visualization

SNS Plot Bar Chart Line Chart Pie Plot

Select x-variable:

Region\_Code

## Region\_Code vs Price (INR)



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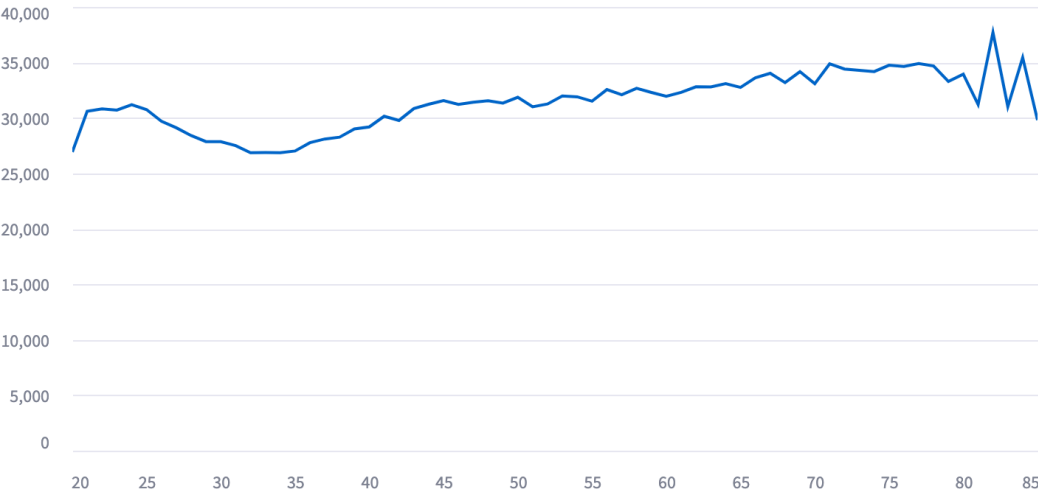
Visualization



# Visualization

SNS Plot   Bar Chart   **Line Chart**   Pie Plot

## Age vs Price



## Dashboard

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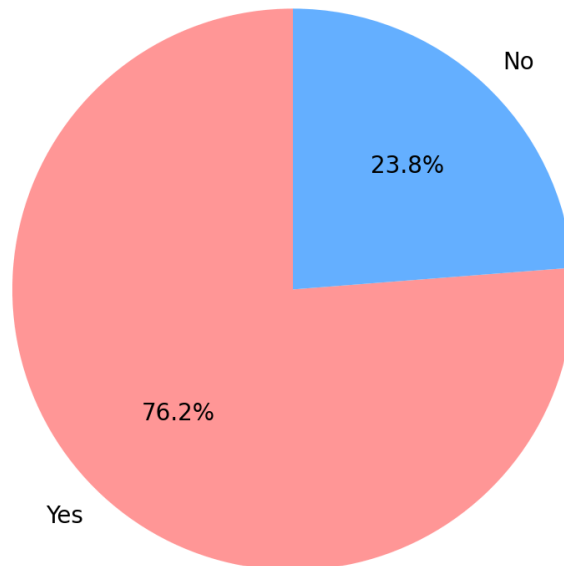
Visualization



# Visualization

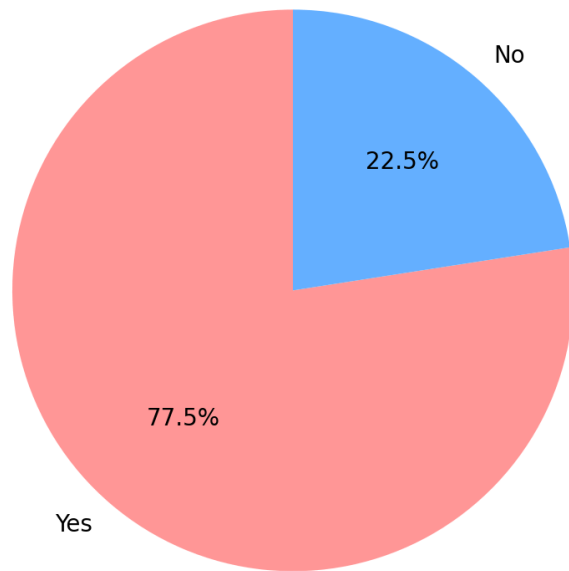
SNS Plot Bar Chart Line Chart **Pie Plot**

## Response distribution by Vehicle Damage



## Response Distribution by Not Previously Insured



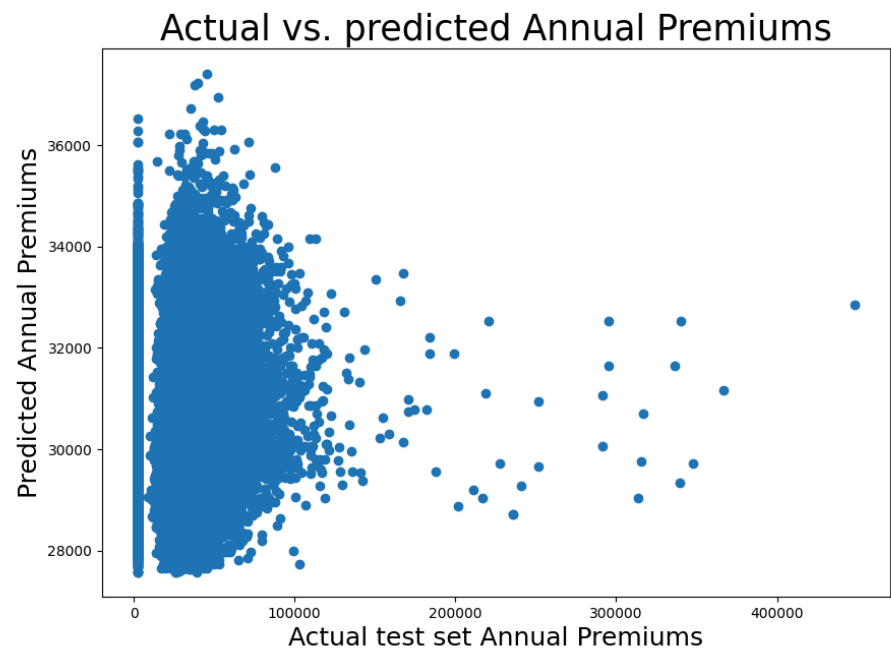


Dashboard

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Prediction

Prediction



Evaluation

	Coefficient
Age	79.297
Region_Code	-17.2199
Driving_License	-2472.3146
Vehicle_Damage	839.0392
Previously_Insured	1435.4466

MAE: 11971.948747223443

MSE: 288877744.4592813

RMSE: 16996.403868444682