

A hand with a silver ring on the ring finger is shown stopping a black domino from falling. A chain of other black dominoes is visible in the background, some standing and some falling, illustrating the concept of a chain reaction or domino effect.

Insurance Loss

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Insurance Loss

01 Business Question

- ✓ Questions about business on insurance

02 Insurance Loss Data

- ✓ This section provides data on policyholders, vehicles and losses.

03 Policyholders Profile

- ✓ The policyholders profile contained in the data includes age, driving experience, marital status, gender, and the number of vehicles owned.

04 Vehicle Profile

- ✓ Vehicle profile consists of fuel type and vehicle age.

05 Conclusions

- ✓ Recommendations for businesses to manage insurance.

01. Business Question



How is the policyholders and vehicle profile on the data available?



What are the recommendations for reducing losses in insurance companies?

02. Insurance Loss Data

Policy.Number	A..	Years.of.Driving.Experience	Number.of.Vehicles	Gender	Married	Vehicle.Age
<int>	<int>	<int>	<int>	<chr>	<chr>	<int>
150024	24	5	1	M	Married	11
144880	31	10	1	F	Single	6
133742	56	37	1	M	Married	0
151282	52	31	1	F	Married	15
174407	20	3	1	M	Single	15
142548	29	8	1	M	Married	9
183396	36	19	1	F	Single	0
106838	67	49	1	F	Married	15
137434	69	48	1	M	Single	5
192628	16	0	1	F	Single	14

1-10 of 15,290 rows | 1-7 of 9 columns

Previous 1 2 3 4 5 6 ... 100 Next

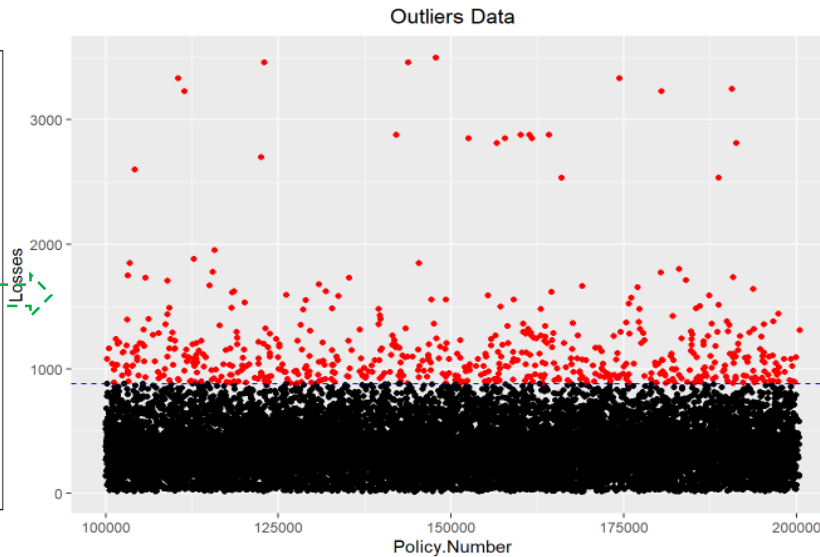
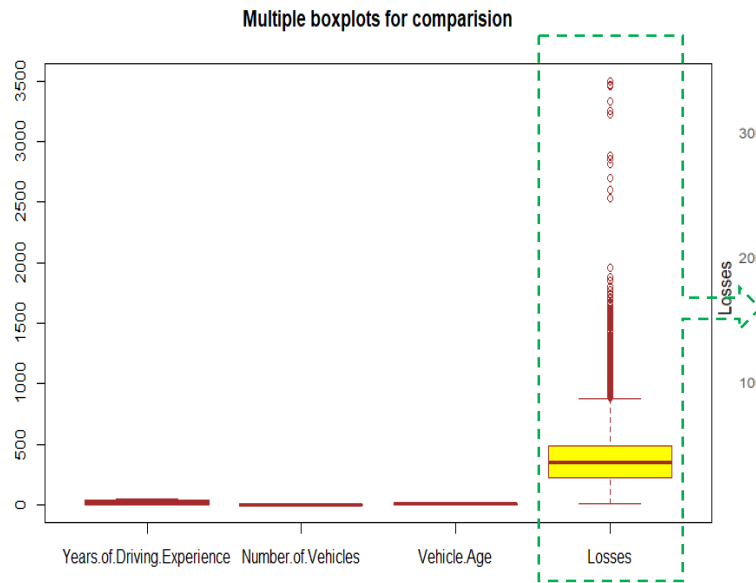
Dimensions

The data consists of 15,290 rows and 9 columns.

Columns name

"Policy.Number", "Age", "Years.of.Driving.Experience", "Number.of.Vehicles", "Gender", "Married", "Vehicle.Age", "Fuel.Type", and " Losses ".

02. Insurance Loss Data



```
[1] "Policy.Number : 0"  
[1] "Age : 0"  
[1] "Years.of.Driving.Experience : 0"  
[1] "Number.of.Vehicles : 0"  
[1] "Gender : 0"  
[1] "Married : 0"  
[1] "Vehicle.Age : 0"  
[1] "Fuel.Type : 0"  
[1] "Losses : 0"
```

Outliers in the data

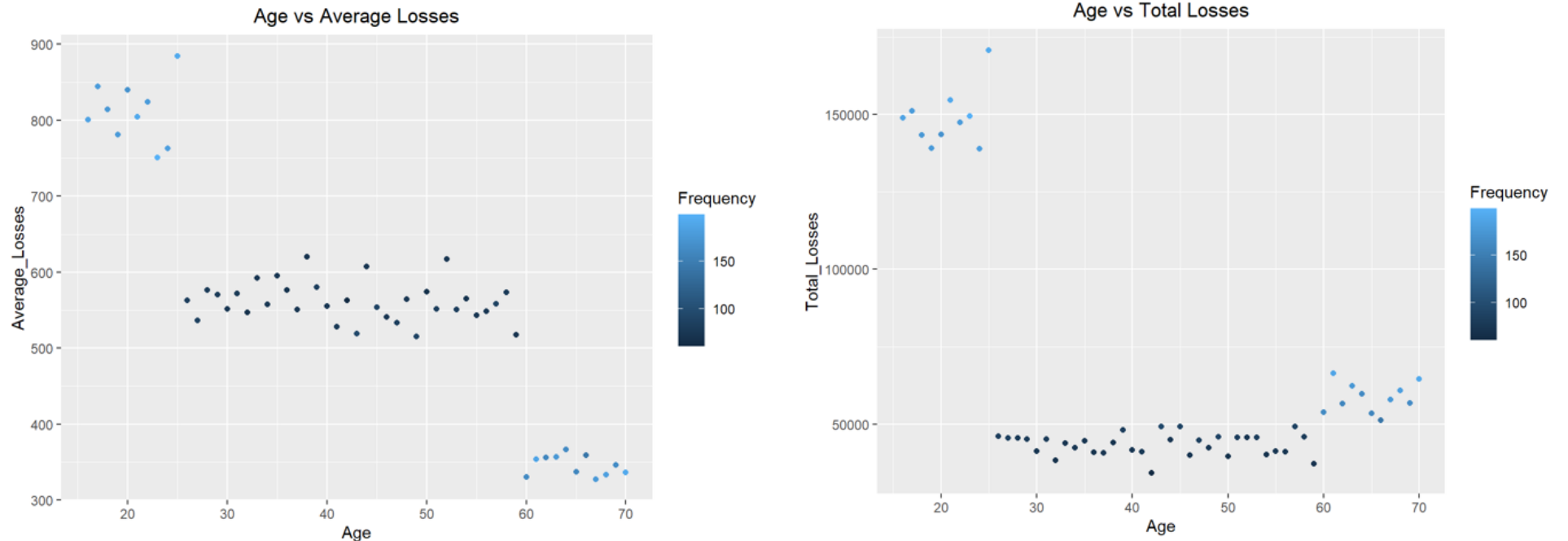
There are 585 outliers in the Losses column.

Missing value in the data

There is no missing value in the data.

03. Policyholders Profile

Age vs Losses

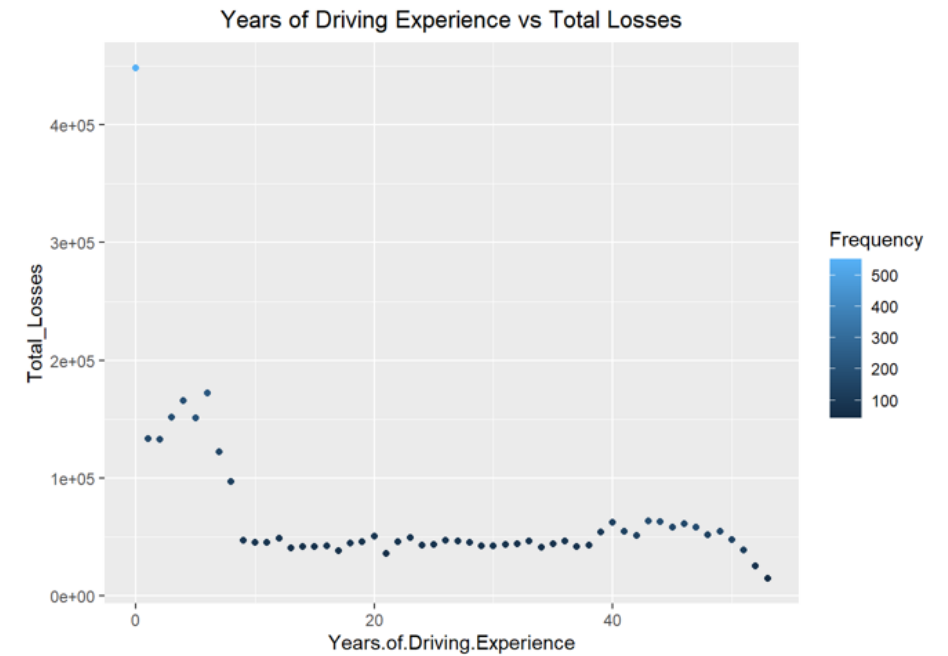


Based on this case, the insurance company can increase the premium through personal accident costs for drivers and passengers in the extended coverage aspect. Companies can charge personal accident costs to policyholders less than 26 years old, higher than other ages. This is not only supported based on graphs, but also data from the Directorate General of Land Transportation of the Ministry of Transportation in 2020 which explains that age under 30 contributes to the highest number of accidents . (<https://otomotif.kompas.com/read/2021/03/10/153100715/usia-produktif-penyumbang-kecelakaan-terbesar-di-jalan-raya>)

The company can also provide personal accident costs for policyholders over 59 years of age, which is higher than other ages but does not exceed policyholders who are less than 26 years old. This is because elderly policyholders are more prone to accidents due to their body condition, such as hypertension, diabetes, and others.

03. Policyholders Profile

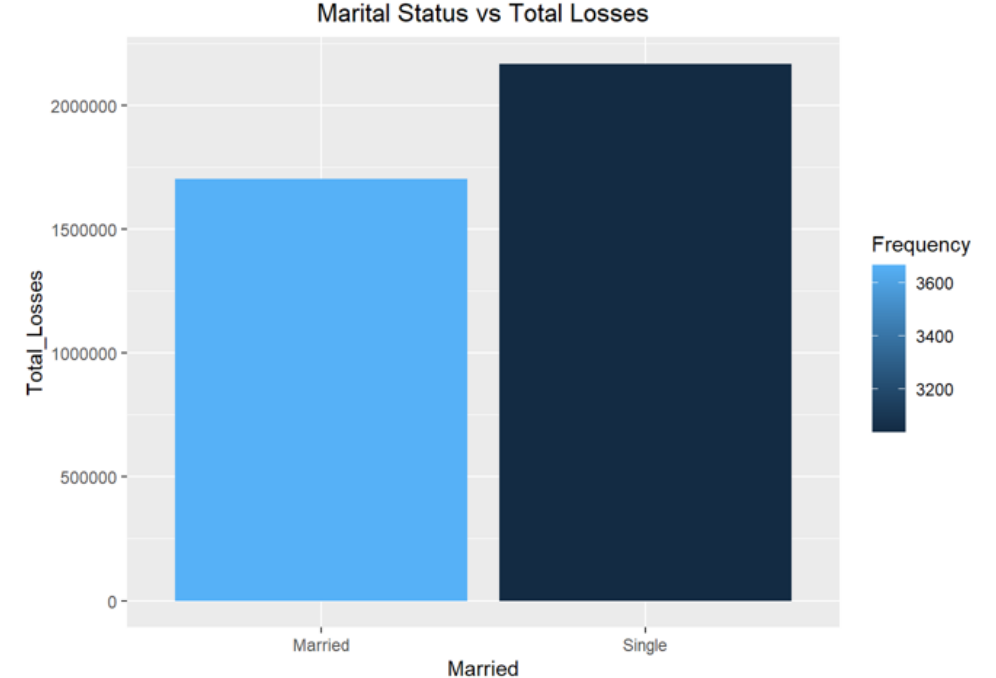
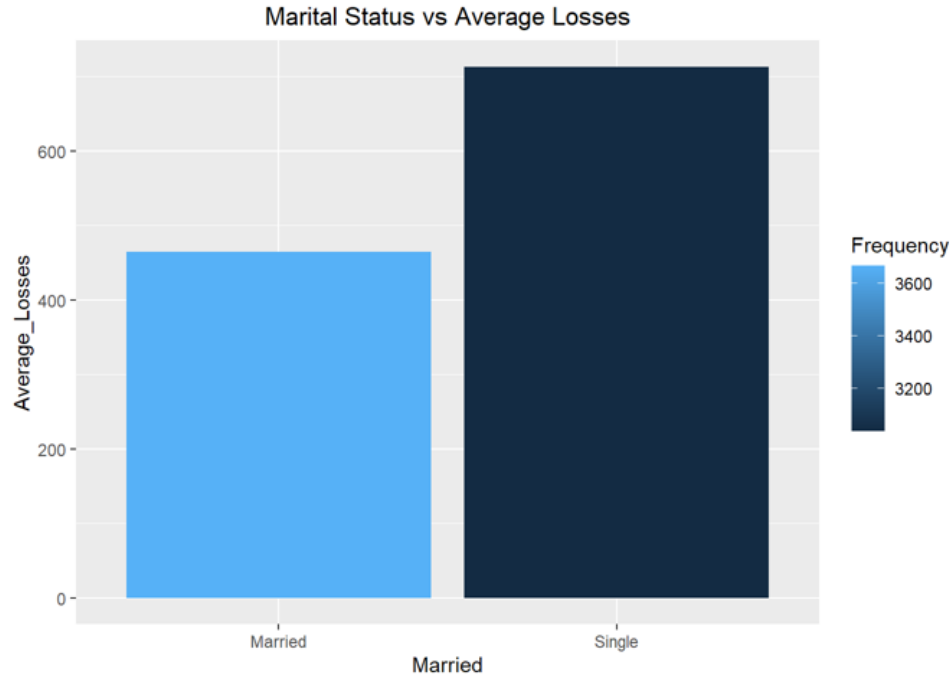
Years of Driving Experience vs Losses



Insurance companies can increase the premiums for policyholders with less than 9 years of driving experience by providing additional costs for personal accidents in the extended aspect of insurance. This action is highly recommended for policyholders with 0 years of driving experience who are prone to accidents due to at least experience in driving in different circumstances.

03. Policyholders Profile

Marital Status vs Losses

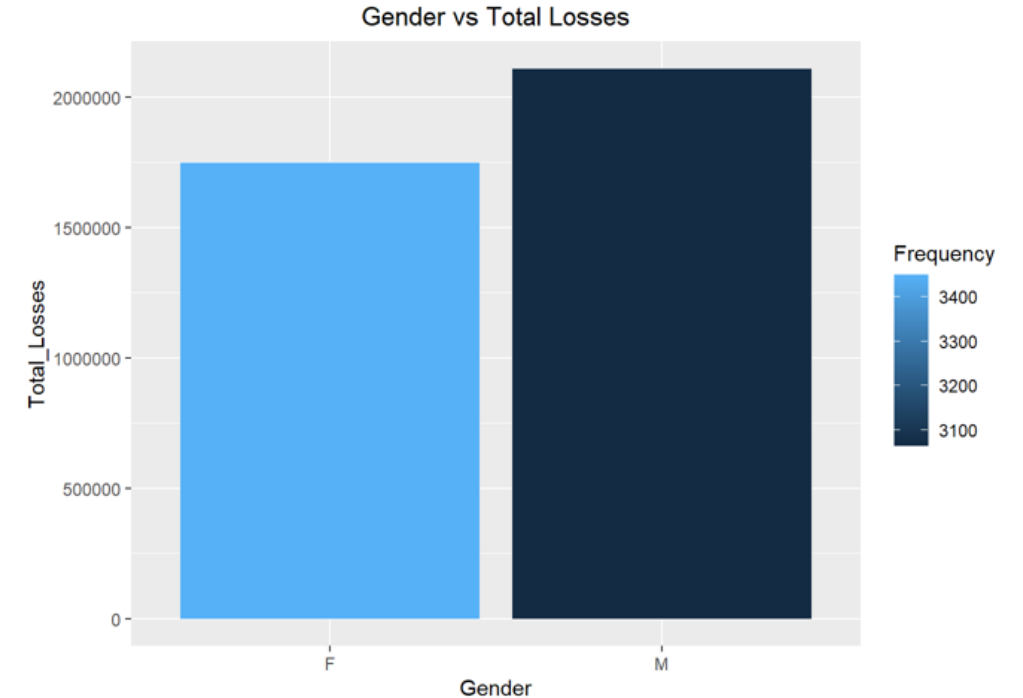
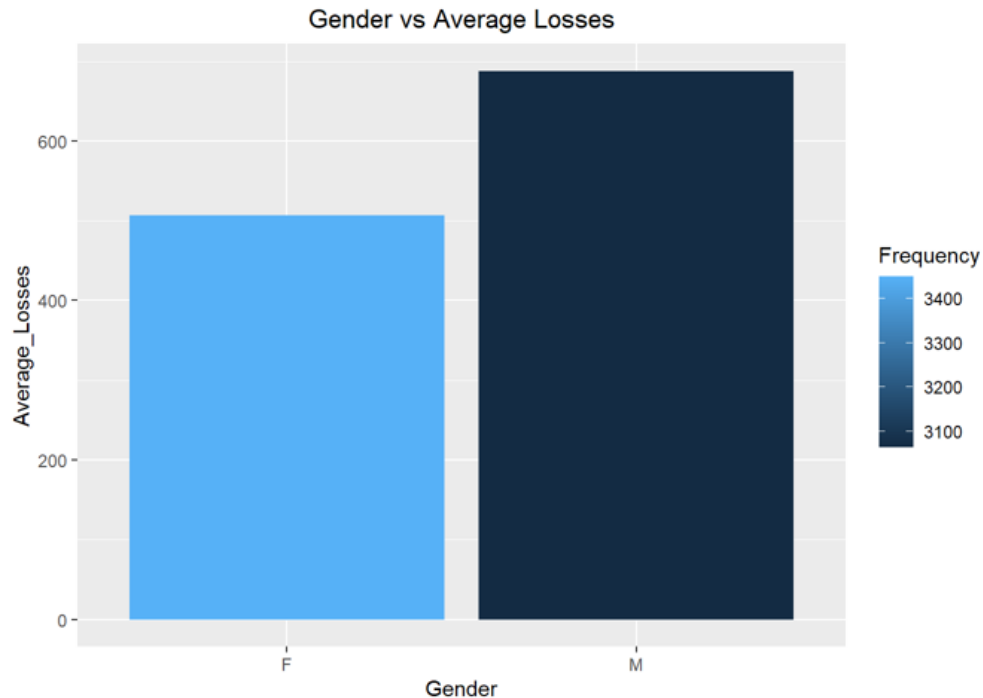


In the two graphs, it can be seen that the largest frequency contributing to losses comes from married policy owners, but for average losses and total losses are owned by policy owners who are still single.

Based on this problem, the insurance company can reduce the amount of loss by increasing the premium from the cost of expanding the insurance (personal accident costs). Additional charges for personal accident costs for policyholders who are still single can be done by the company.

03. Policyholders Profile

Gender vs Losses

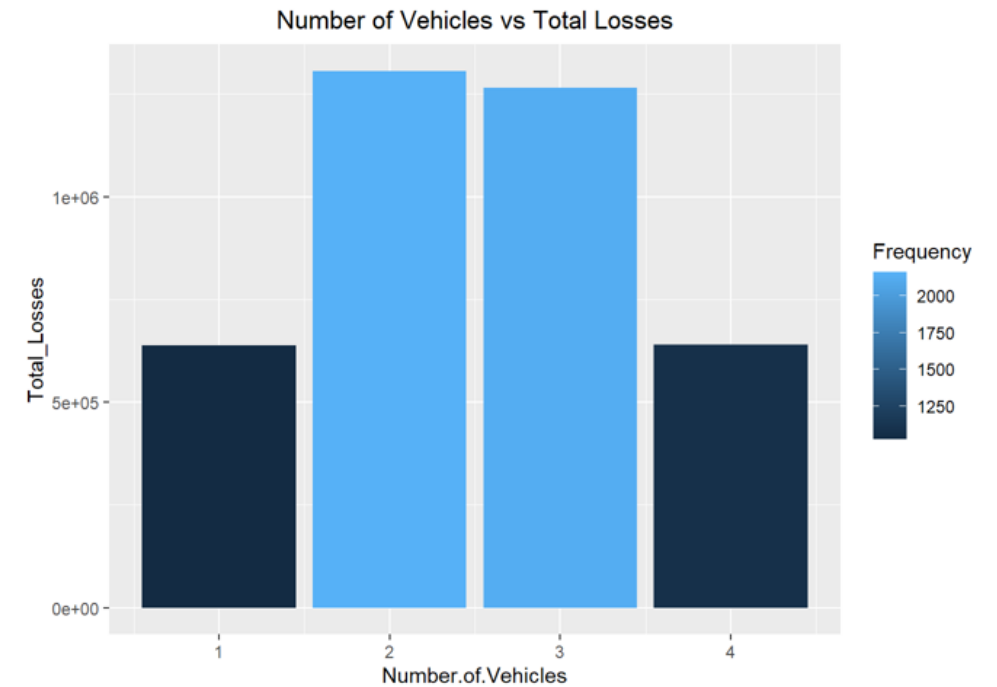
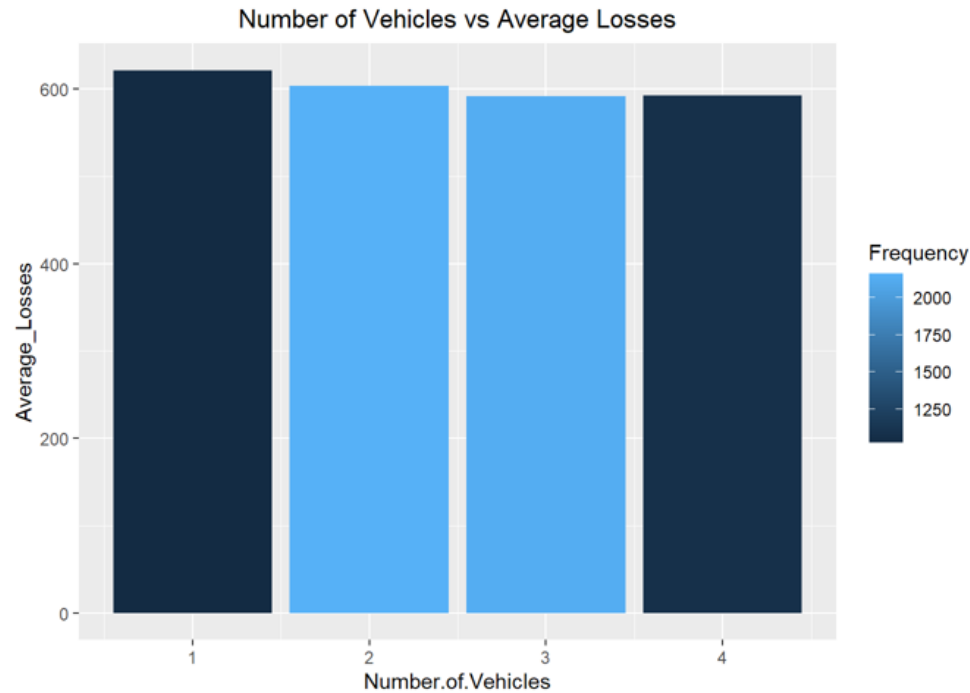


In the two graphs, it can be seen that the most frequent contributors to losses are female policy owners, while the most average losses and total losses are contributed by male policy owners.

Insurance companies can increase the cost of personal accidents in the aspect of extending coverage for male policyholders. This is done apart from the data available, that men are more prone to accidents (for example accidents due to illegal racing and the motorcycle community which is predominantly carried out by men).

04. Vehicle Profile

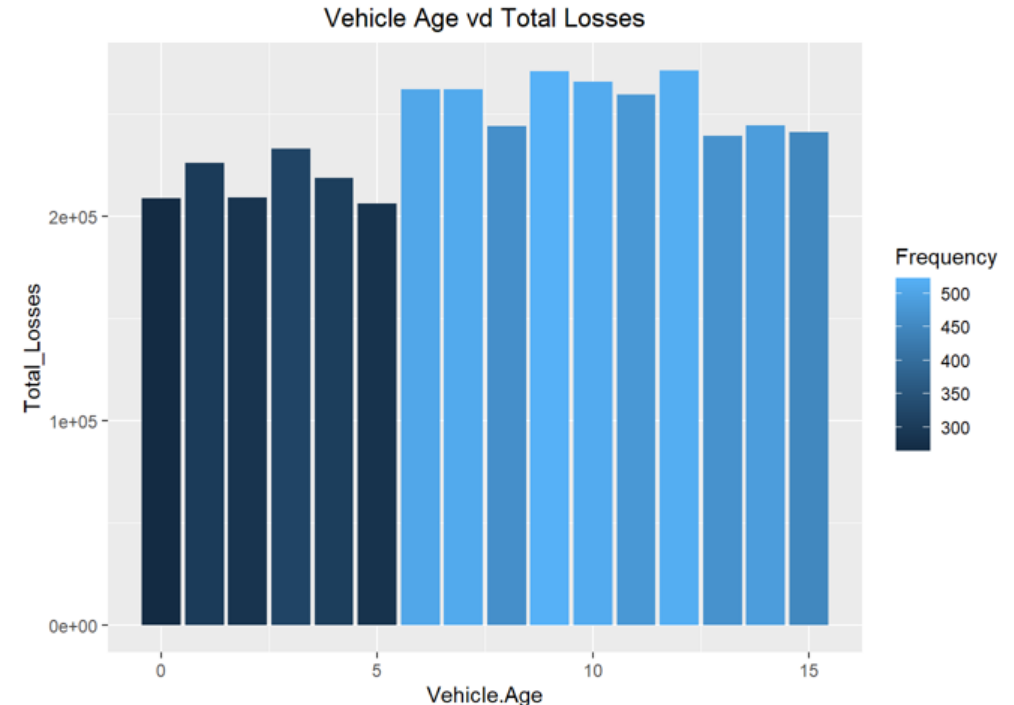
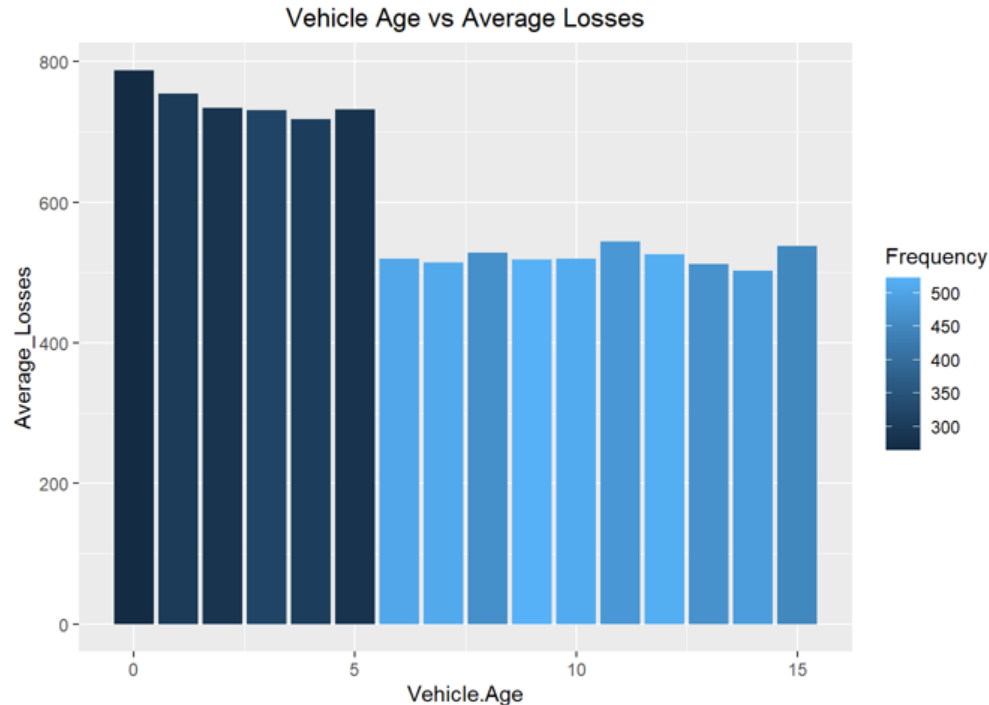
Number of
Vehicles
vs
Losses



In the two graphs, it can be seen that the most frequent loss contributors are policy owners who own 2 to 3 vehicles. This condition also applies to the largest contributor to average losses and total losses.

04. Vehicle Profile

vehicle Age
VS
Losses

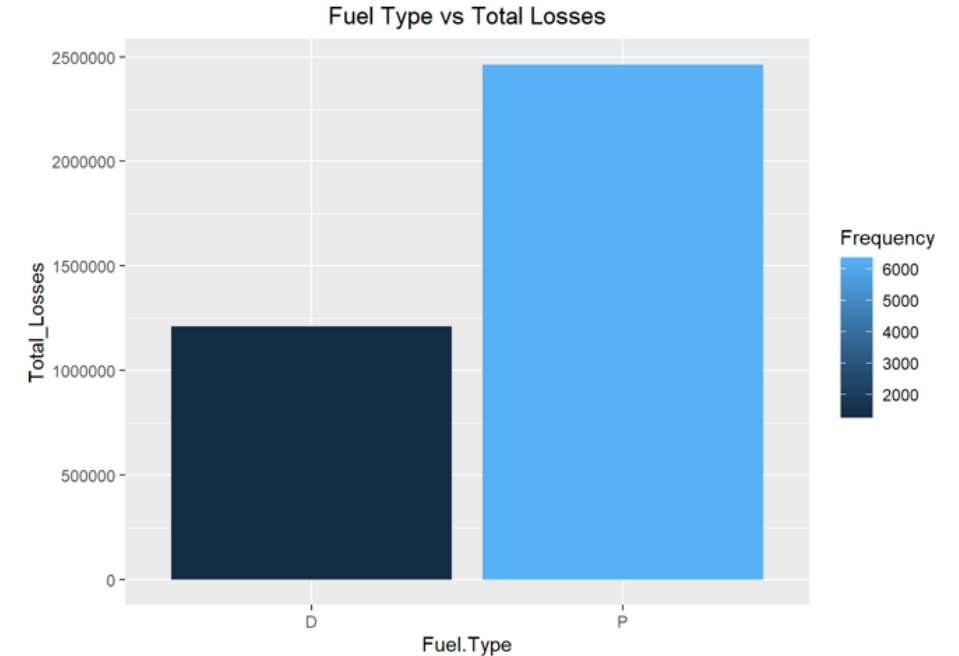
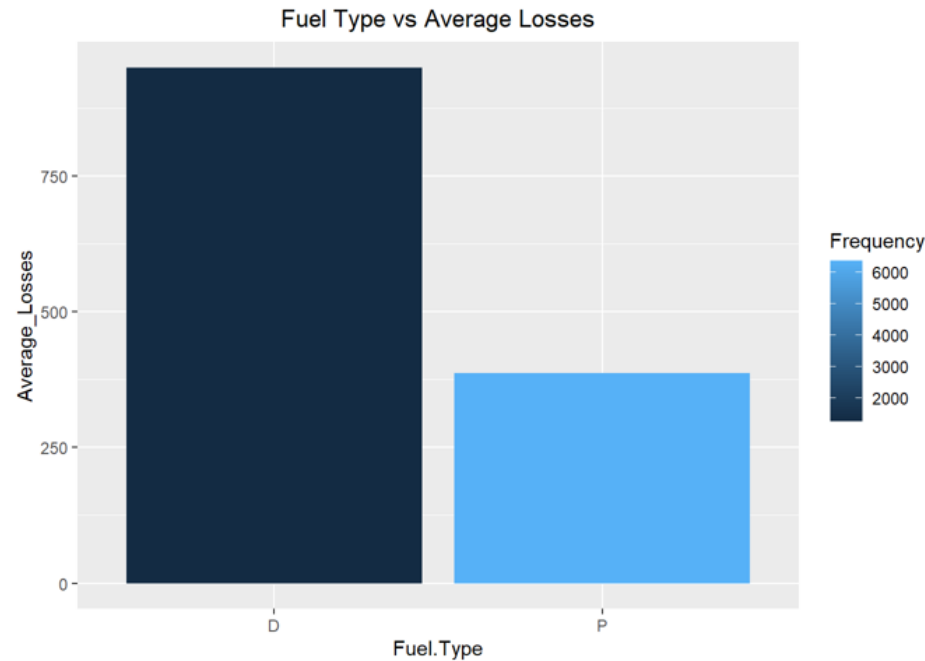


In the two graphs, it can be seen that the most frequent contributors to the estimation come from vehicles that are more than 5 years old. This also applies to the largest total losses which also occurred in vehicles over 5 years old. However, the highest average losses are owned by vehicles that are less or equal to 5 years old.

In this case, the company can increase the premium loading cost (vehicle age > 5 years) in the aspect of expanding the guarantee, so that it can increase the policy owner's premium. The company can also increase the cost of the authorized repair shop for vehicles that are more than 5 years old.

04. Vehicle Profile

Fuel Type vs Losses



In the two graphs, it can be seen that the most frequency and total losses from fuel types that contribute to losses are from propane (P) type fuels. Meanwhile, the highest average losses were contributed by diesel type (D).

In this case, to reduce losses due to this, the company can add an authorized shop service fee for vehicles with fuel type in the form of propane (P).

05. Conclusions



Increase the premium according to certain criteria

Efforts to increase premiums can be made through extended cover



Increase the cost of personal accident for drivers and / or passengers for policyholders who are less than 26 years old. This is because in addition to having the highest frequency and rate of losses, it is also in accordance with the conditions of accidents in Indonesia with the average age of drivers that occur between the ages of 20. and 29.

Increasing the cost of personal accidents for drivers and / or passengers on policyholders can also be based on less than 9 years of driving experience. This action is very suitable for policyholders who have driving experience for 0 years.

The gender aspect can also be used, for example, male policyholders have a higher personal accident cost than women. This is because most of the drivers who have an accident are male



Increase the cost of loading premium (vehicle age > 5 years)



Increase the cost of authorized repair shops on fuel of type propane (P)



Increase the cost of Riot, Strike, Civil Commotion (RSCC)



Eliminate policy extensions on certain criteria



Policy extension cancellation can be done when the policy owner has claimed more than the reasonable limit (e.g. 300%, 400%, or others)

