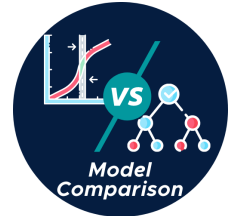
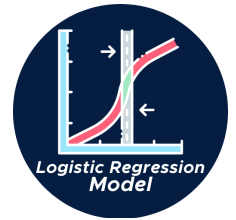


CarPro Report by Amelia Rahmanita 44296 (UAS Adv. BDA 529B)

Creation Date: Monday, December 19, 2022 08:33:55 PM

Author: amelia.rahmanita@student.umn.ac.id

CarPro's Company Dashboard



By:
Amelia
Rahmanita
(00000044296)



CARPRO's General Fraud Data Overview

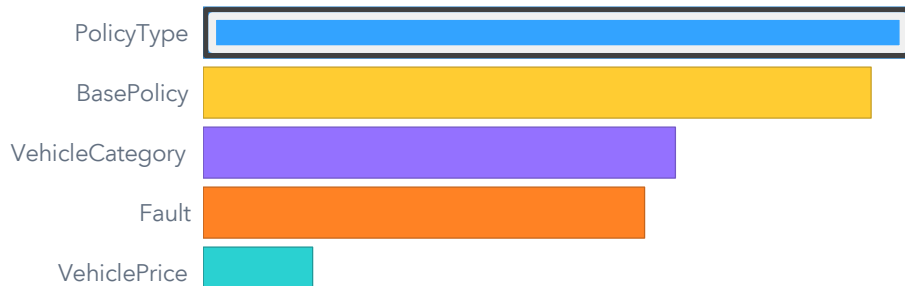


What are the characteristics of FraudFound?

FraudFound has a 5.99% chance (923 of 15K) of being Yes. It's the least common FraudFound value.

No	Yes
----	-----

What factors are most related to FraudFound?



What are the groups based on PolicyType by the chance of FraudFound being Yes?

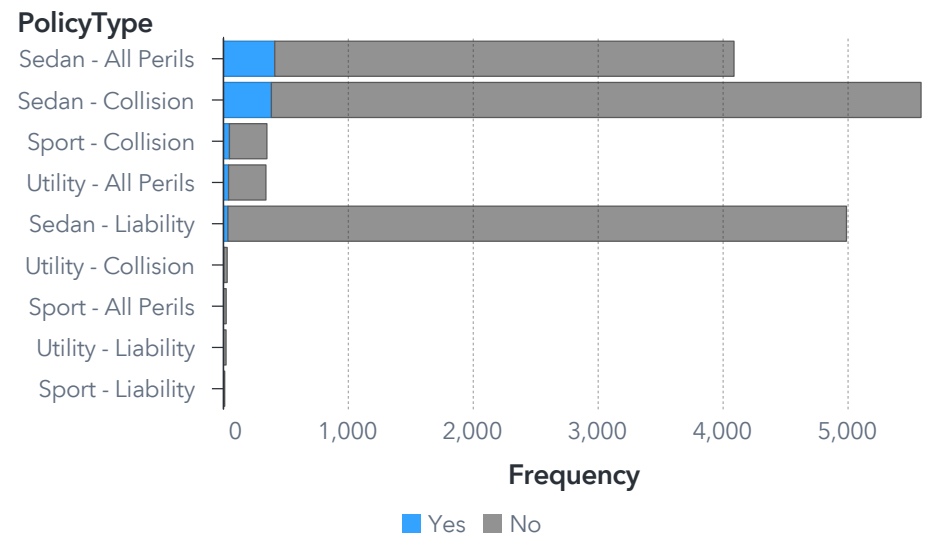
8.54%

If PolicyType is Sedan - All Perils, Sedan - Collision, Sport - Collision, Utility - All Perils, or Utility - Collision, then FraudFound has a 8.54% chance (887 out of 10K cases) of being Yes.

0.72%

If PolicyType is Sedan - Liability, Sport - All Perils, Sport - Liability, or Utility - Liability, then FraudFound has a 0.72% chance (36 out of 5K cases) of being Yes.

What is the relationship between FraudFound and PolicyType?



When PolicyType is Sedan - All Perils or Sedan - Collision, the total count of Yes is a high value; when PolicyType is Sport - Collision, Utility - All Perils, Sedan - Liability or Utility - Collision, the total count of Yes is a low value. The most common PolicyType value is Sedan - Collision.



CARPRO's Predict Fraudulent Claims Page



What values for the most important factors should be used to predict?

Fault

Policy Holder	Third Party
---------------	-------------

AgeOfPolicyHolder

PolicyType

RepNumber

Month

AgeOfVehicle

MonthClaimed

PolicyNumber

WeekOfMonth

What is the prediction for FraudFound?

No

The predicted FraudFound, No, is the most common FraudFound value in observed cases. Most observed cases (94.01%) are No. The prediction is based on an automatically selected Decision Tree model.

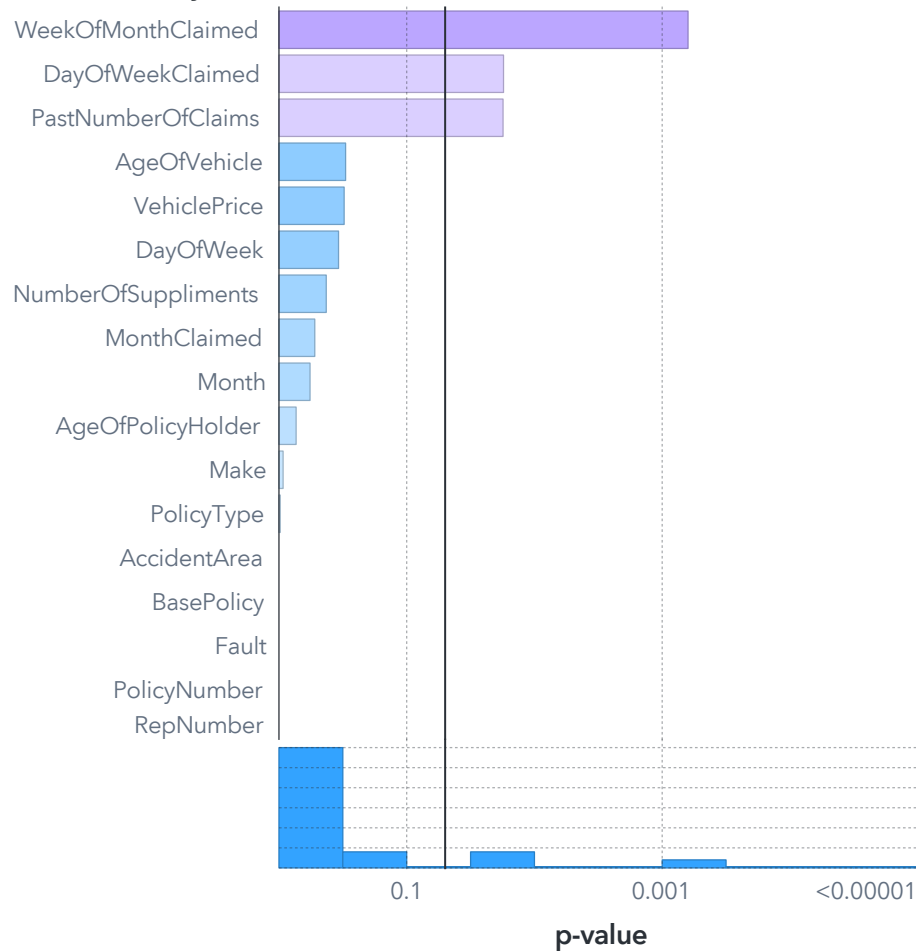


CARPRO's Predictive Model using Logistic Regression

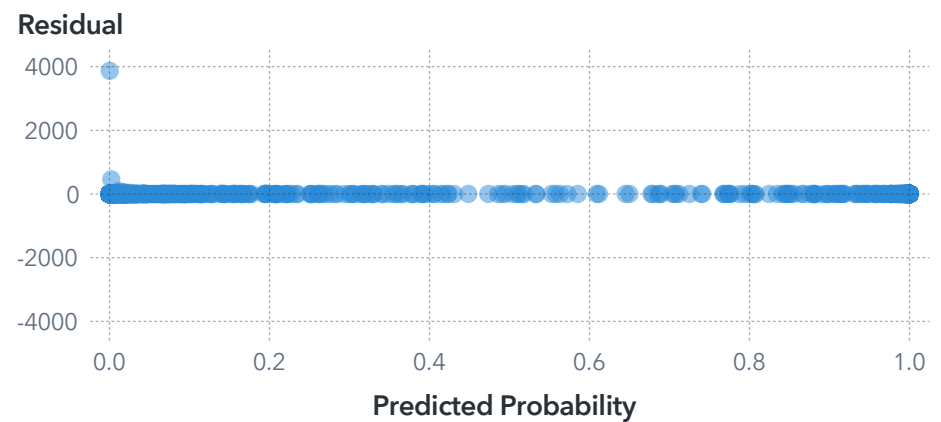


Logistic Regression **FraudFound** (event=Yes) KS (Youden) **0.9523** Observations Used **1,846**

Fit Summary



Residual Plot



Confusion Matrix

Observed			
		No	Yes
		No	Yes
No		909	14
Yes		33	890

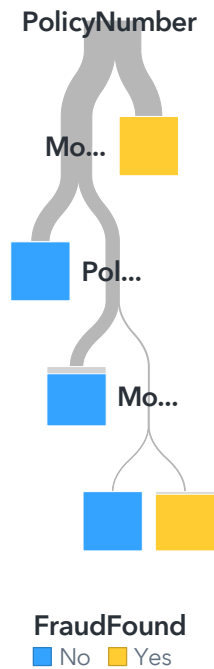


CARPRO's Predictive Model using Decision Tree

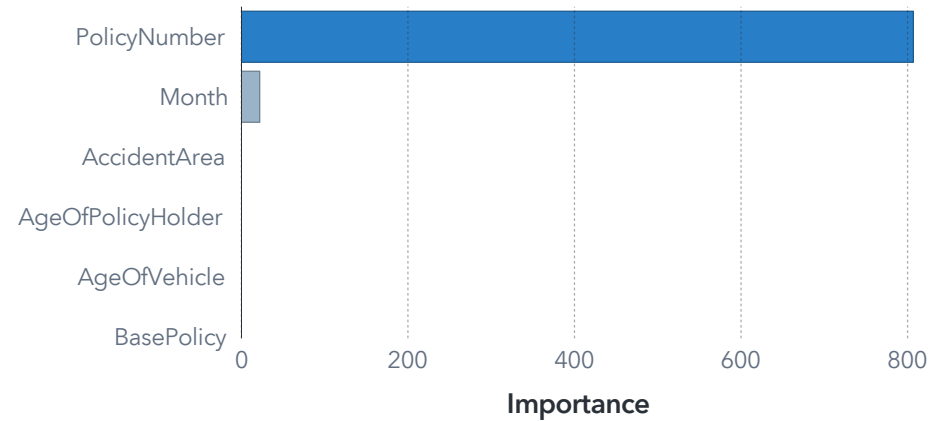


Decision Tree **FraudFound** (event=Yes) KS (Youden) **0.9426** Observations Used **1,846**

Tree



Variable Importance



Confusion Matrix

Observed			
	No	Yes	Predicted
	No	Yes	
No	922	1	
Yes	52	871	

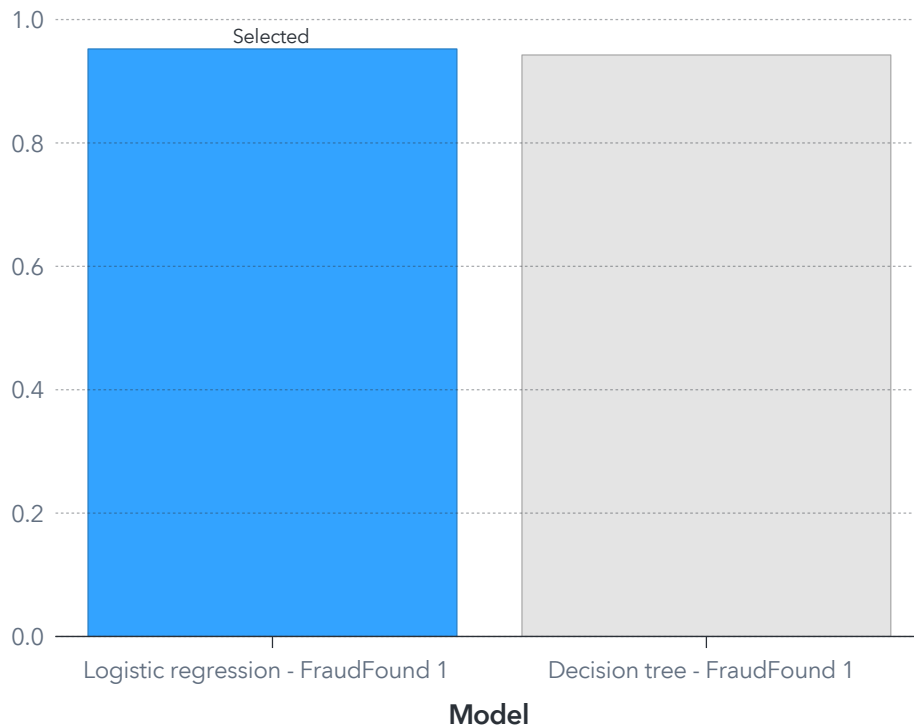


CARPRO's Predictive Models Comparison



Model Comparison **FraudFound** (event=Yes)

Fit Statistic
KS (Youden)



Confusion Matrix

		Observed			
		Yes		No	
		890	33	871	52
Predicted	Yes	14	909	1	922
	No				
Model		Logistic regression - FraudFound 1		Decision tree - FraudFound 1	

COMPARISON RESULT: The best predictive model for CarPro Company is the model built using **Logistic Regression**.

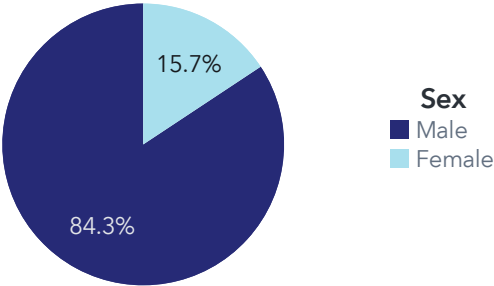
Logistic



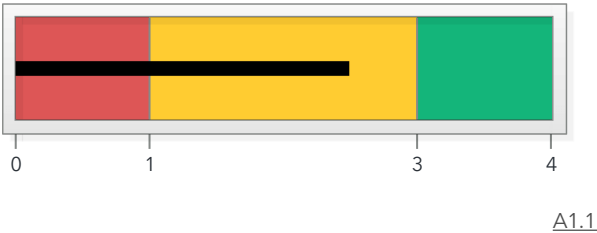
CARPRO's Auto Insurance Customer Data Dashboard



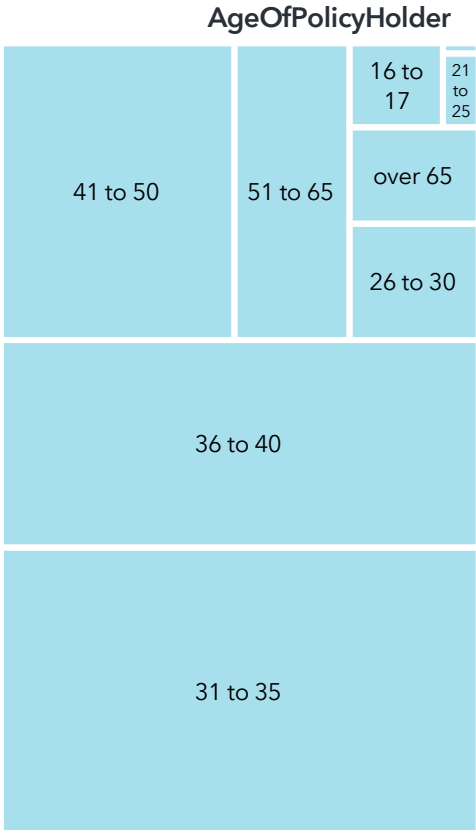
CarPro's Policy by Customer Sex
Frequency



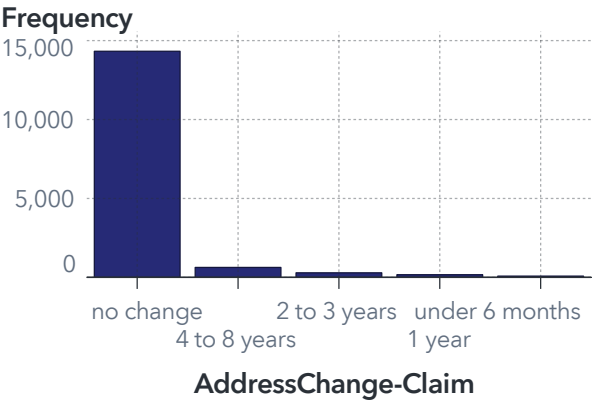
Average of Customer Driver Rating
2.4878080415



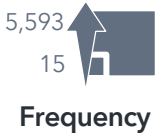
CarPro's Policy by Customer Age Group



CarPro's Policy by Customer Address Change
Frequency

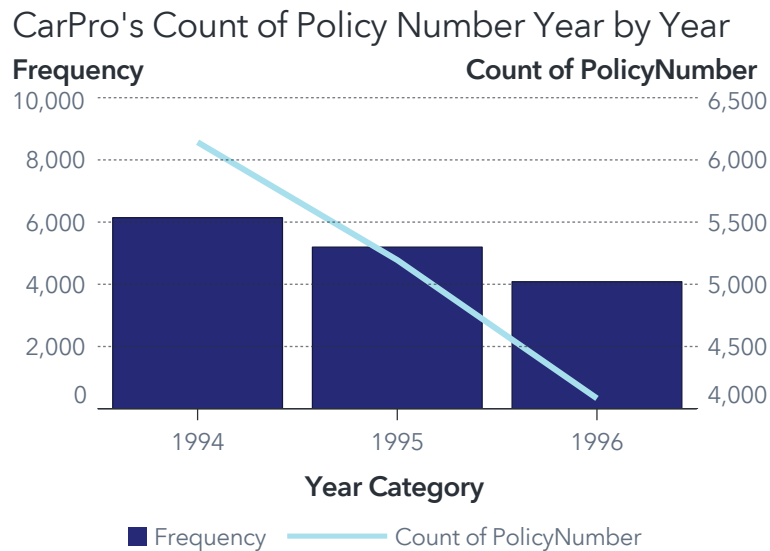


CarPro's Policy by Customer Marital Status





CARPRO's Auto Insurance Policy Dashboard



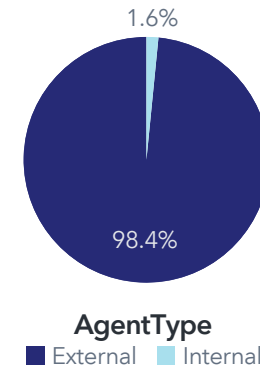
Count of PolicyNu...

15K

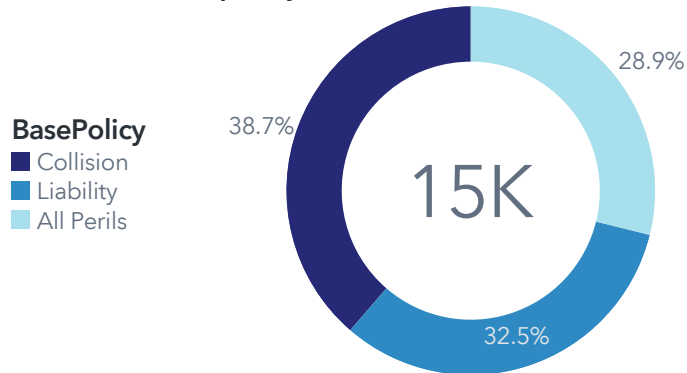
Deductible

6.3M

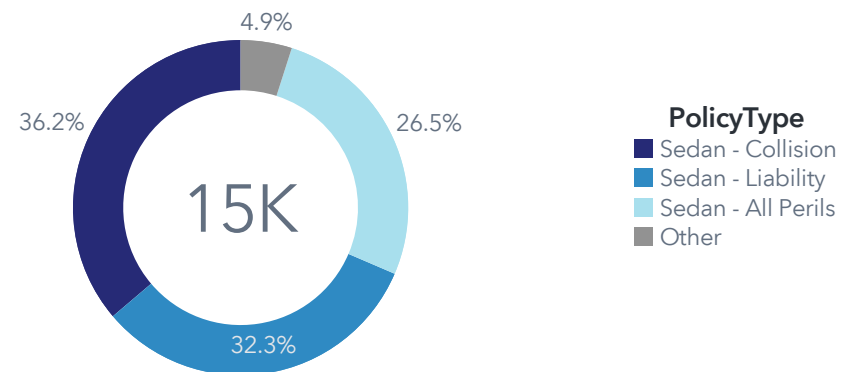
CarPro's Agent Type
Frequency



CarPro's Base Policy
Frequency



CarPro's Policy Type
Frequency

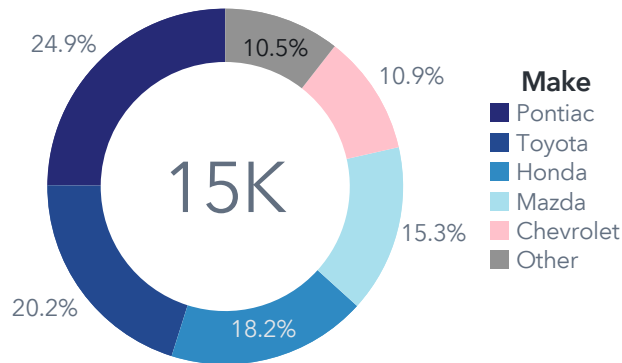




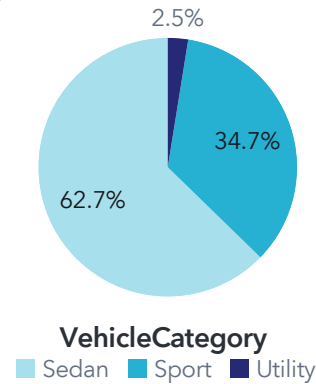
CARPRO's Auto Insurance Car Data Dashboard



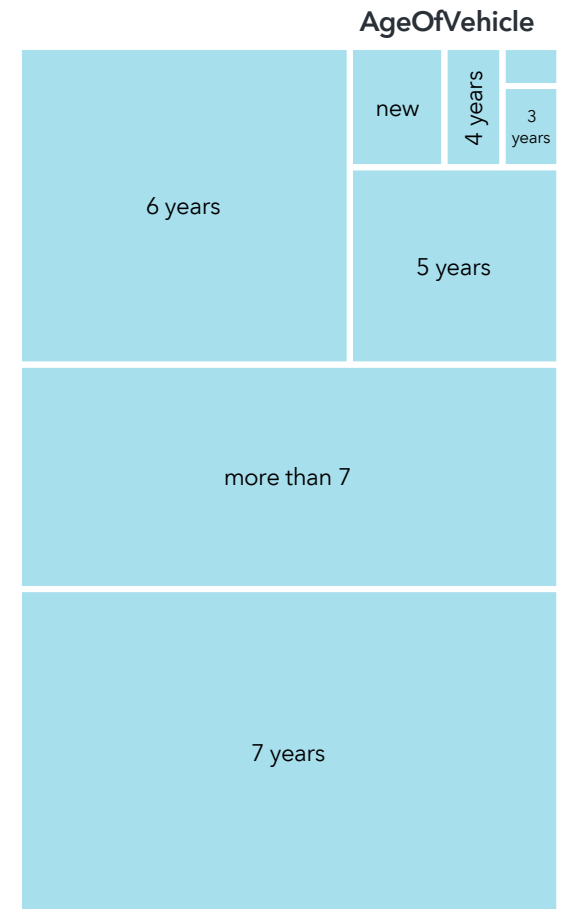
Policy by Car Brand
Frequency



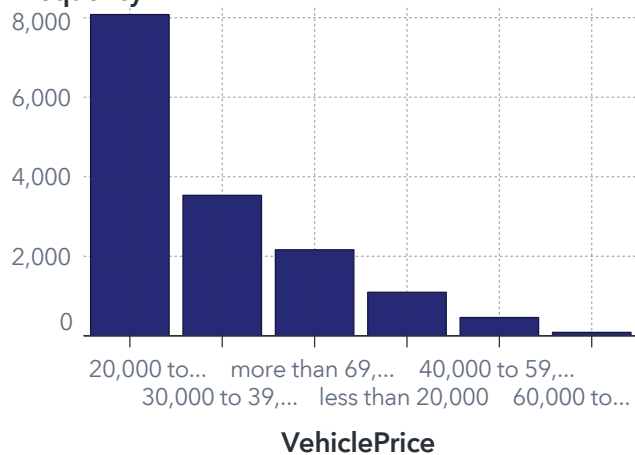
Policy by Car Category
Frequency



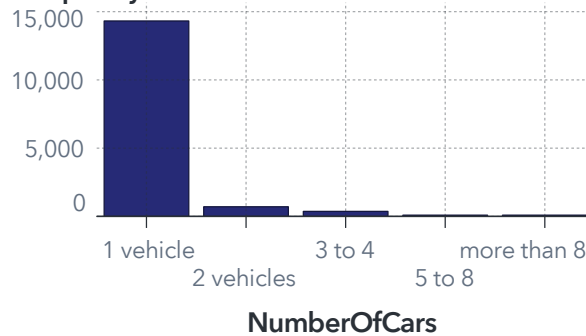
Policy by Car Age



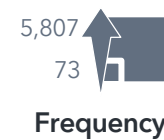
Policy by Car Price
Frequency



Policy by Amount of Cars
Frequency



A2.1

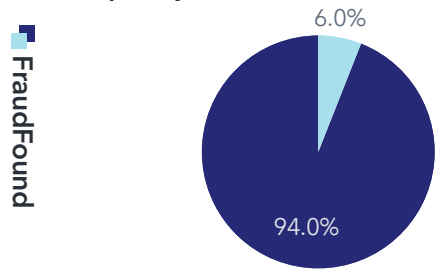




CARPRO's Auto Insurance Claim Dashboard



Fraud Found in CarPro
Frequency

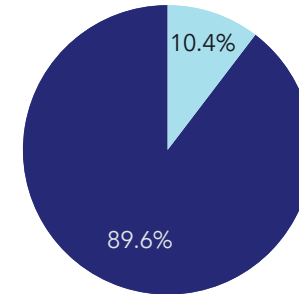


A3.1

Year

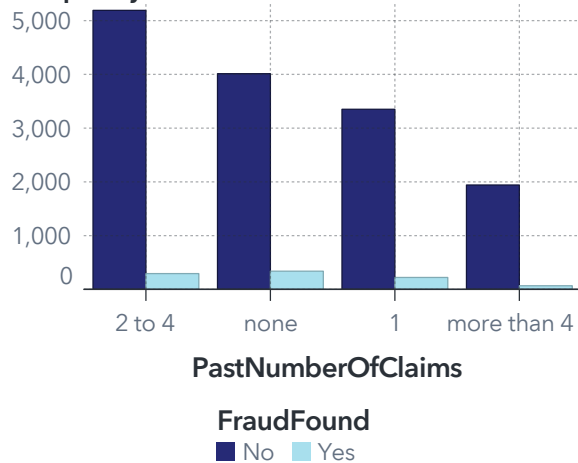


Distribution of Accident Area
Frequency



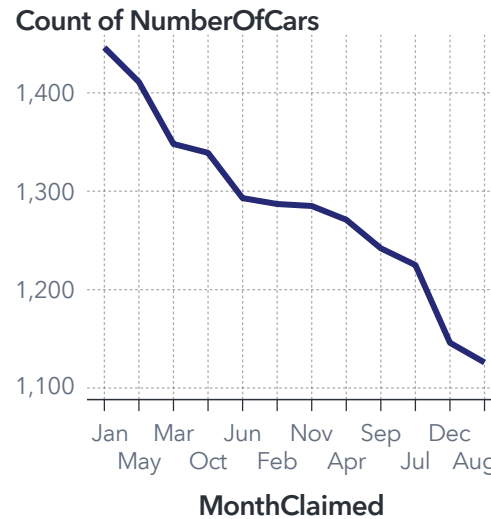
A3.2

Past Number of Claims by Fraud
Frequency



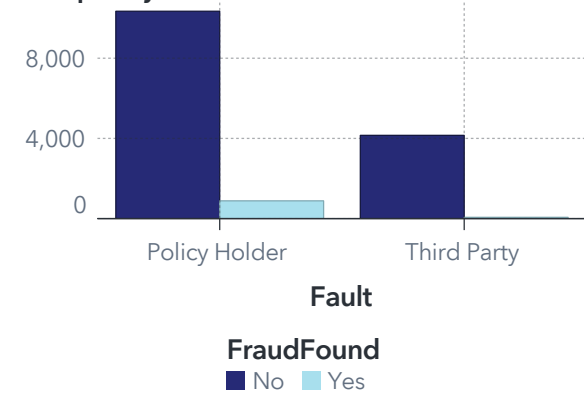
A3.4

Number of Cars by Month
Claimed



A3.3

Fault in Claims by Fraud
Frequency



A3.5

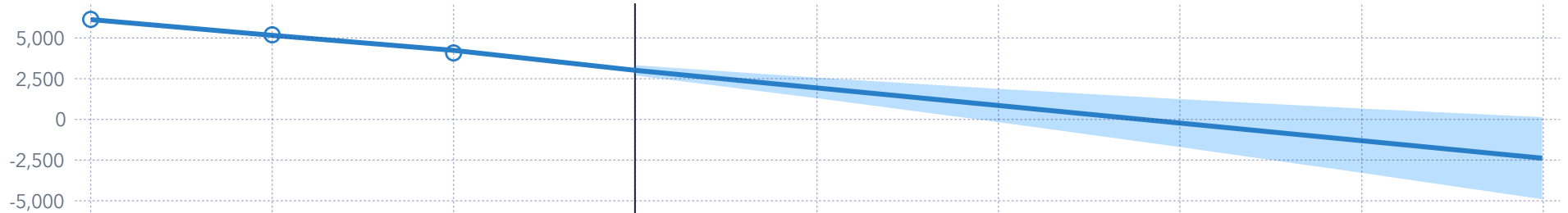


CARPRO's Insurance Policy Forecast

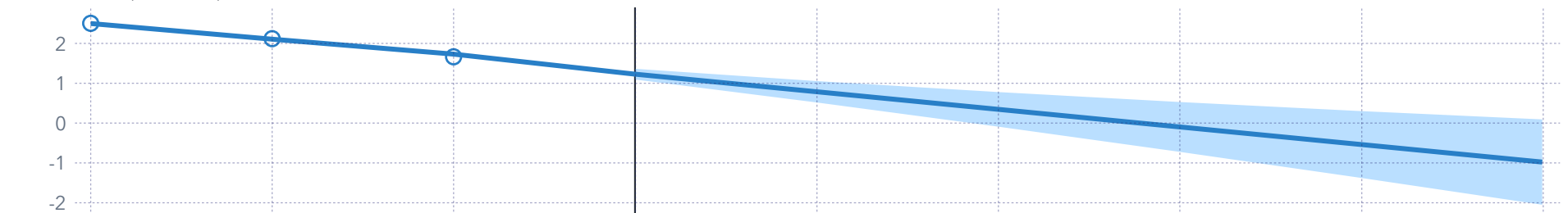


CarPro's Policy Forecast based on Year

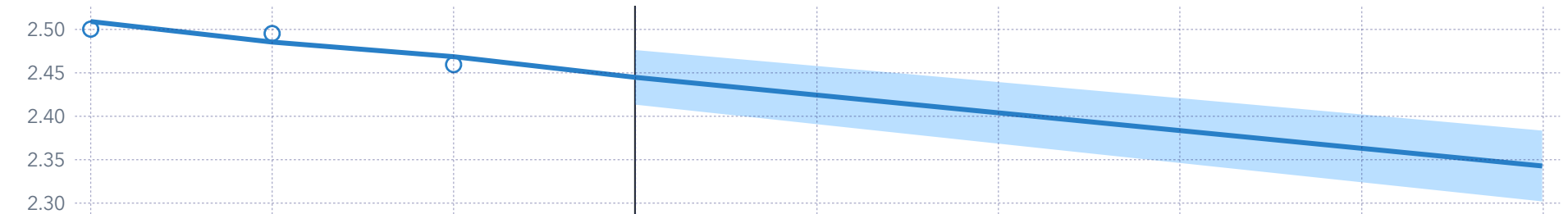
Frequency



Deductible (millions)



Avg of DriverRating



○ Actual — Model

95% forecast confidence.



CARPRO's Fraudulent Claims Found Map



FraudFound Filter

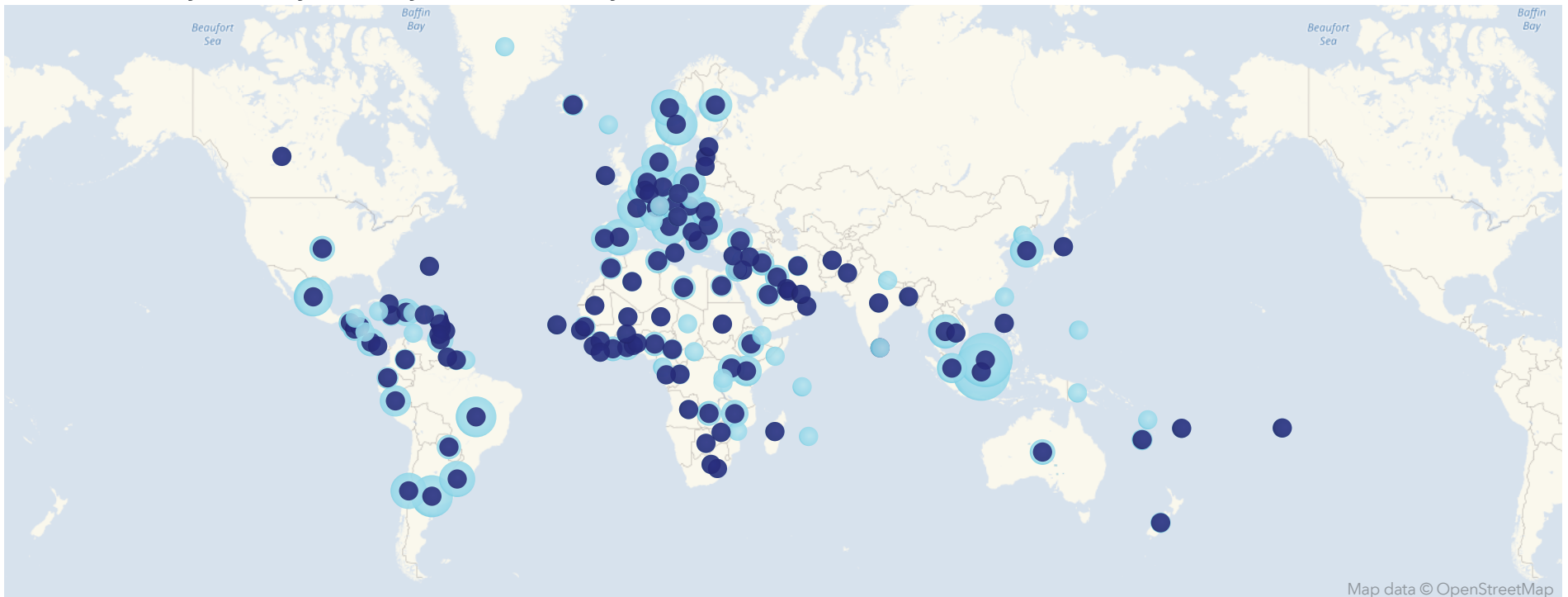
FraudFound

Country Filter

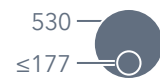
Country

Year Filter

FraudFound by Country sized by Count of PolicyNumber



Map data © OpenStreetMap



Frequency

FraudFound

No Yes

Appendix

A1.1 Average of Customer Driver Rating

Display Rules:	Average of DriverRating
	<div><div></div> $0 \leq x < 1$</div>
	<div><div></div> $1 \leq x < 3$</div>
	<div><div></div> $3 \leq x \leq 4$</div>

A2.1 Policy by Amount of Cars

Description:	Fault in Claims by Fraud
--------------	--------------------------

A3.1 Fraud Found in CarPro

Filters:	Year BetweenInclusive(1994; 1996)
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A3.2 Distribution of Accident Area

Filters:	Year BetweenInclusive(1994; 1996)
----------	-----------------------------------

A3.3 Number of Cars by Month Claimed

Filters:	(MonthClaimed In('Apr'; 'Aug'; 'Dec'; 'Feb'; 'Jan'; 'Jul'; 'Jun'; 'Mar'; 'May'; 'Nov'; 'Oct'; 'Sep')) OR MonthClaimed Missing Year BetweenInclusive(1994; 1996)
----------	--

A3.4 Past Number of Claims by Fraud

Filters:	Year BetweenInclusive(1994; 1996)
----------	-----------------------------------

A3.5 Fault in Claims by Fraud

Description:	Fault in Claims by Fraud
Filters:	Year BetweenInclusive(1994; 1996)

A4.1 FraudFound by Country sized by Count of PolicyNumber

Warnings:

Some features may not be displayed on the map because of missing location information in the data.

No matches were found for supplied geography data items: Belgian Congo, Bohemia, Bohemia and Moravia, Bolivia, British Guyana, Brunei, Burma, Ceylon, China PR, Curaçao, Czechoslovakia, DR Congo, Dahomey, England, Eswatini, French Somaliland, German DR ... Total item count: 59