

Did you know the average number of claims filed daily for auto insurance fraud and why?

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# INSURANCE FRAUD CLAIMS

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- Let's predict the riskiness of the loan.
- The model is designed to predict the risk levels of an insurance policy holder that has filed a claim.

## Reasons:

- Fraud is an ongoing problem in the insurance industry which has an impact on premiums.
- There is loss due to fraudulent data claims.



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# How we are going to address the project:

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- Description of the source of data: the data file was from kaggle.com
- Exploration of the <sup>h</sup> dataset was from  
<https://www.kaggle.com/datasets/antopravinjohnbosco/auto-insurance-claims-fraud-detection>
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- Technologies, languages, tools, and algorithms used throughout the project
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- Recommendation for future analysis

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result from many  
claims that were not  
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Raw data from  
kaggle.com



umbrella_limit	insured_zip	insured_sex	insured_education_level	insured_occupation	insured_hobbies	insured_relationship	capital-gains
0	466132	MALE	MD	craft-repair	sleeping	husband	53300
5000000	468176	MALE	MD	machine-op-inspct	reading	other-relative	0
5000000	430632	FEMALE	PhD	sales	board-games	own-child	35100
6000000	608117	FEMALE	PhD	armed-forces	board-games	unmarried	48900
6000000	610706	MALE	Associate	sales	board-games	unmarried	66000
0	478456	FEMALE	PhD	tech-support	bungie-jumping	unmarried	0
0	441716	MALE	PhD	prof-specialty	board-games	husband	0
0	603195	MALE	Associate	tech-support	base-jumping	unmarried	0
0	601734	FEMALE	PhD	other-service	golf	own-child	0
0	600983	MALE	PhD	priv-house-serv	camping	wife	0
4000000	462283	FEMALE	Masters	exec-managerial	dancing	other-relative	38400
0	615561	FEMALE	High School	exec-managerial	skydiving	other-relative	0
3000000	432220	MALE	MD	protective-serv	reading	wife	0
0	464652	FEMALE	MD	armed-forces	bungie-jumping	wife	52800
0	476685	FEMALE	College	machine-op-inspct	board-games	not-in-family	41300
0	458733	FEMALE	MD	transport-moving	movies	other-relative	55700
5000000	619884	MALE	College	machine-op-inspct	hiking	own-child	63600
6000000	470610	MALE	High School	machine-op-inspct	reading	unmarried	53500
0	472135	FEMALE	MD	craft-repair	yachting	other-relative	45500

# CREDIT RISK ~ DEFAULT

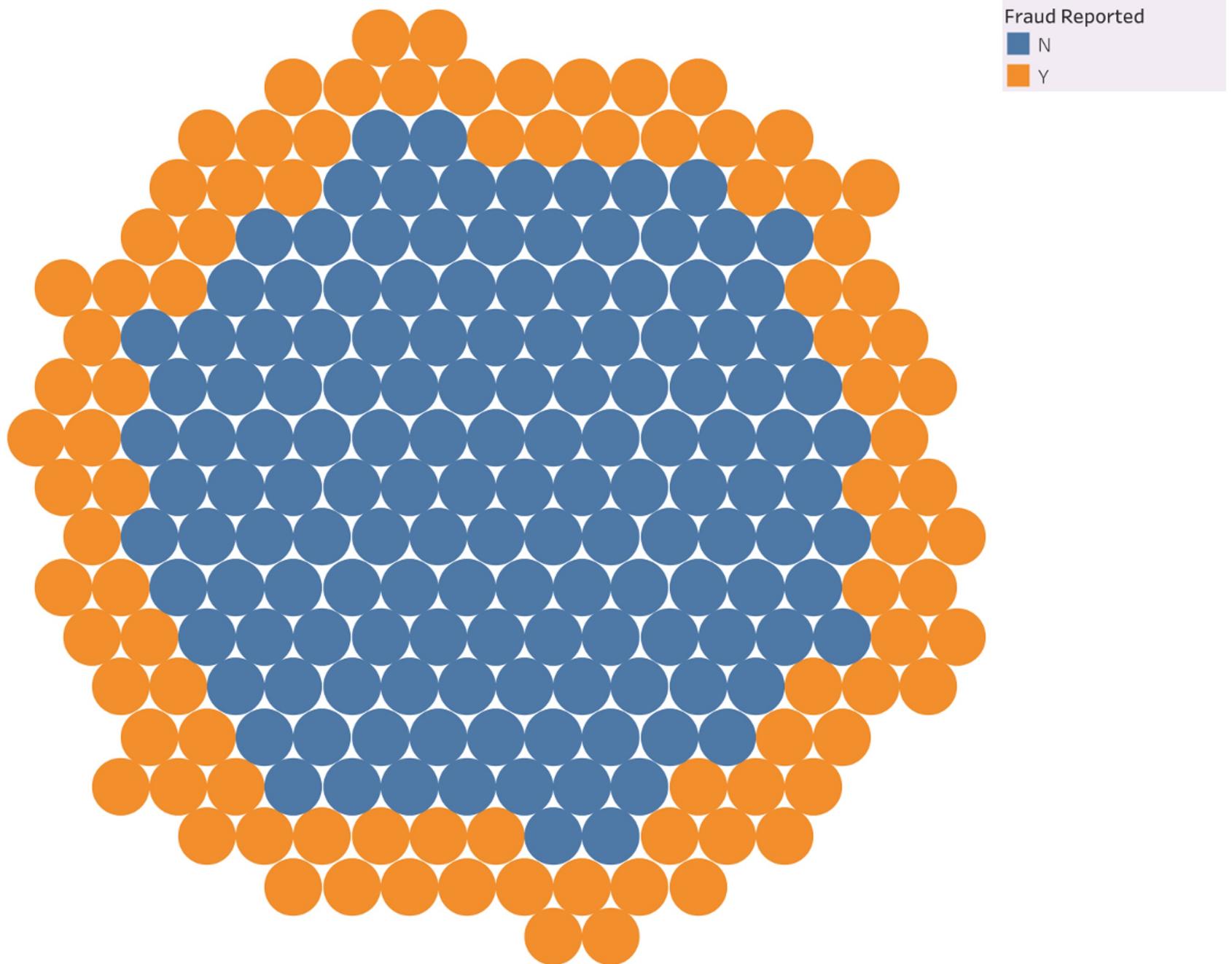
Good standing as a policyholder vs bad standings based on default. credit and driver level of risk.

A driver fakes an accident and unscrupulous people support the mishandling of P & C claims.

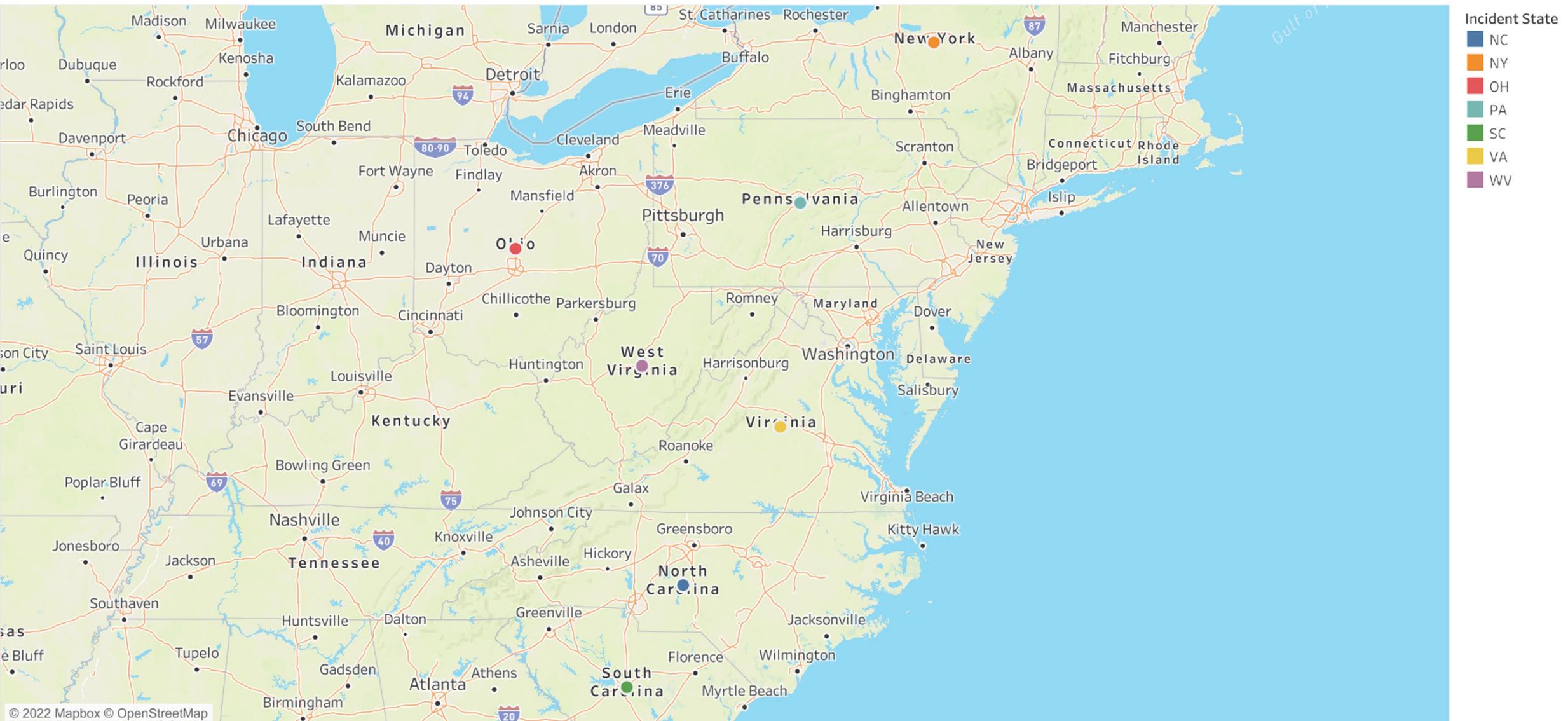
A driver and body shop worker agrees to inflate the auto damage claim and share the "PROCEEDS".



## Fraud based on car type and capital loss



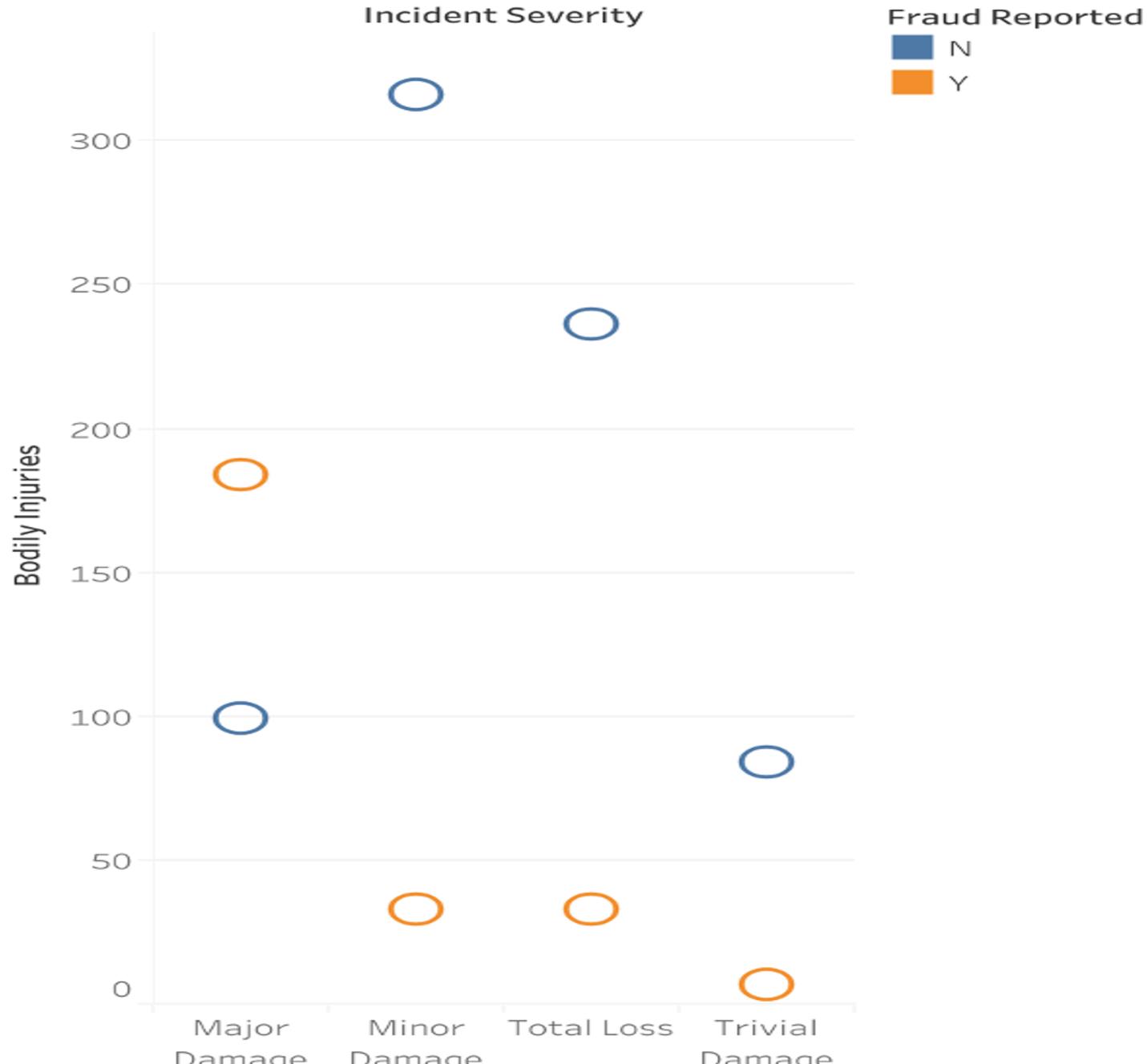
## Insurance Auto Fraud per state



## Incidental capital loss or gains per accident



## Fraudulent Injury claims



# Who committed auto insurance fraud?

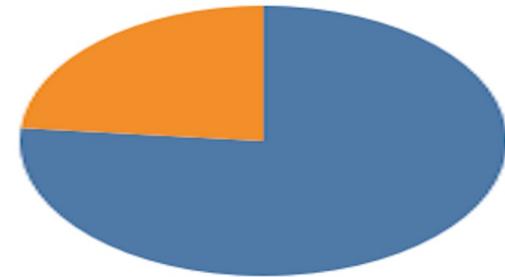
## Gender breakdown of Fraud claims

Insured Sex..

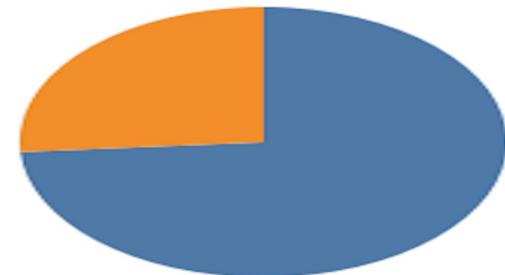
Fraud Reported

- N
- Y

FEMALE



MALE



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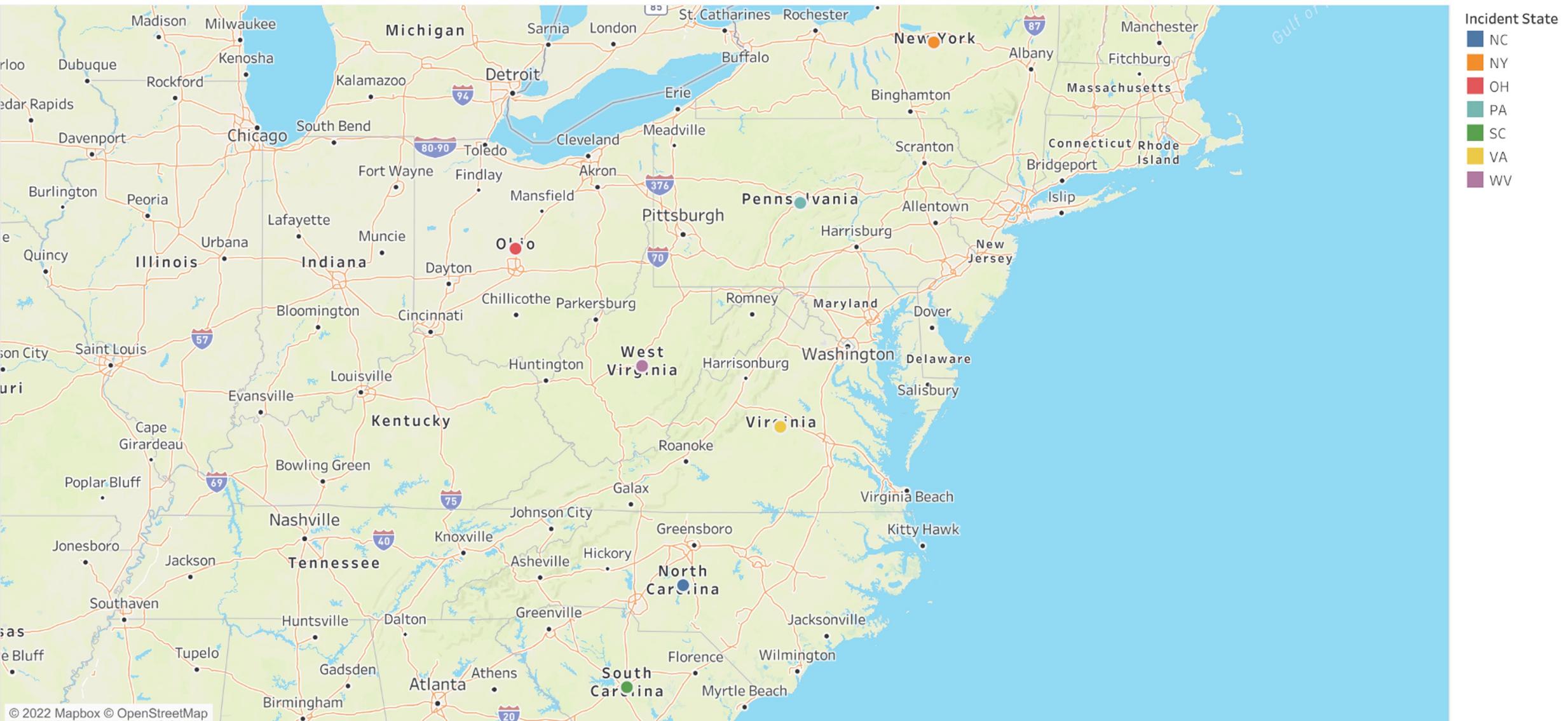
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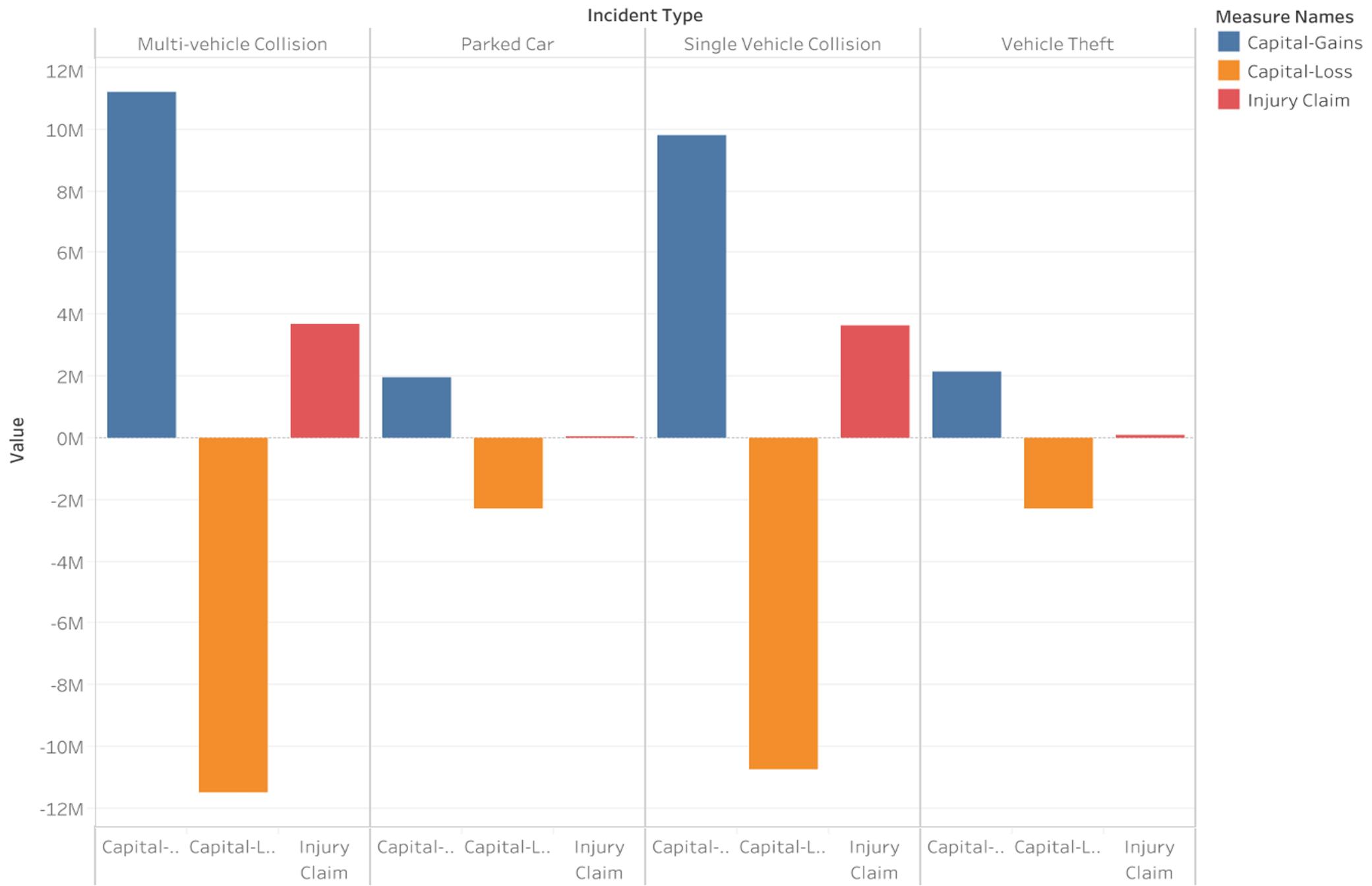
WE CLASSIFY  
~ fraud  
proceeds.

policy_number	-1	0.0098	-0.0057	-0.0046	-0.018	-0.0088	-0.011	-0.02
capital-gains	-0.0098	1	-0.047	0.056	0.016	0.026	-0.00078	0.016
capital-loss	-0.0057	-0.047	1	-0.024	-0.036	-0.046	-0.023	-0.033
bodily_injuries	-0.0046	0.056	-0.024	1	0.047	0.047	0.04	0.043
total_claim_amount	-0.018	0.016	-0.036	0.047	1	0.81	0.81	0.98
injury_claim	-0.0088	0.026	-0.046	0.047	0.81	1	0.56	0.72
property_claim	-0.011	-0.00078	-0.023	0.04	0.81	0.56	1	0.73
vehicle_claim	-0.02	0.016	-0.033	0.043	0.98	0.72	0.73	1

## Insurance Auto Fraud per state



## Incidental capital loss or gains per accident



## Fraudulent Injury claims

