PORTFOLIO

VEHICLE THEFT

ANALYSIS

NEW ZEALAND

BETWEEN 07/10/2021 – 06/04/20??

Stolen vehicle data from the New Zealand police department's vehicle of interest database containing 6 months of data. Each record represents a single stolen vehicle, with data on vehicle type, make, year, color, date stolen and region stolen.
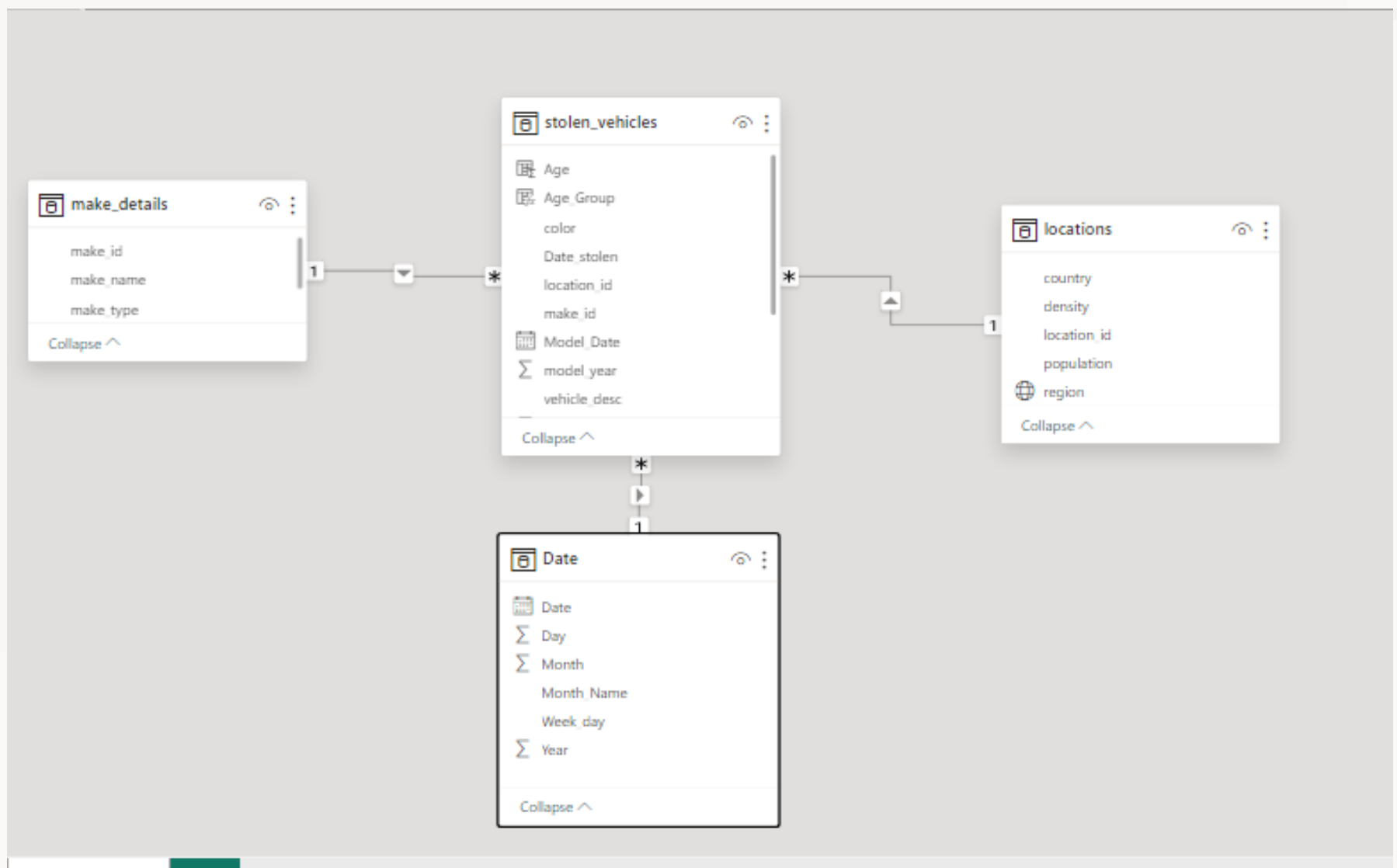
WELCOME

VEHICLE THEFT
ANALYSIS

NEW ZEALAND
BETWEEN 07/10/2021 – 06/04/2022
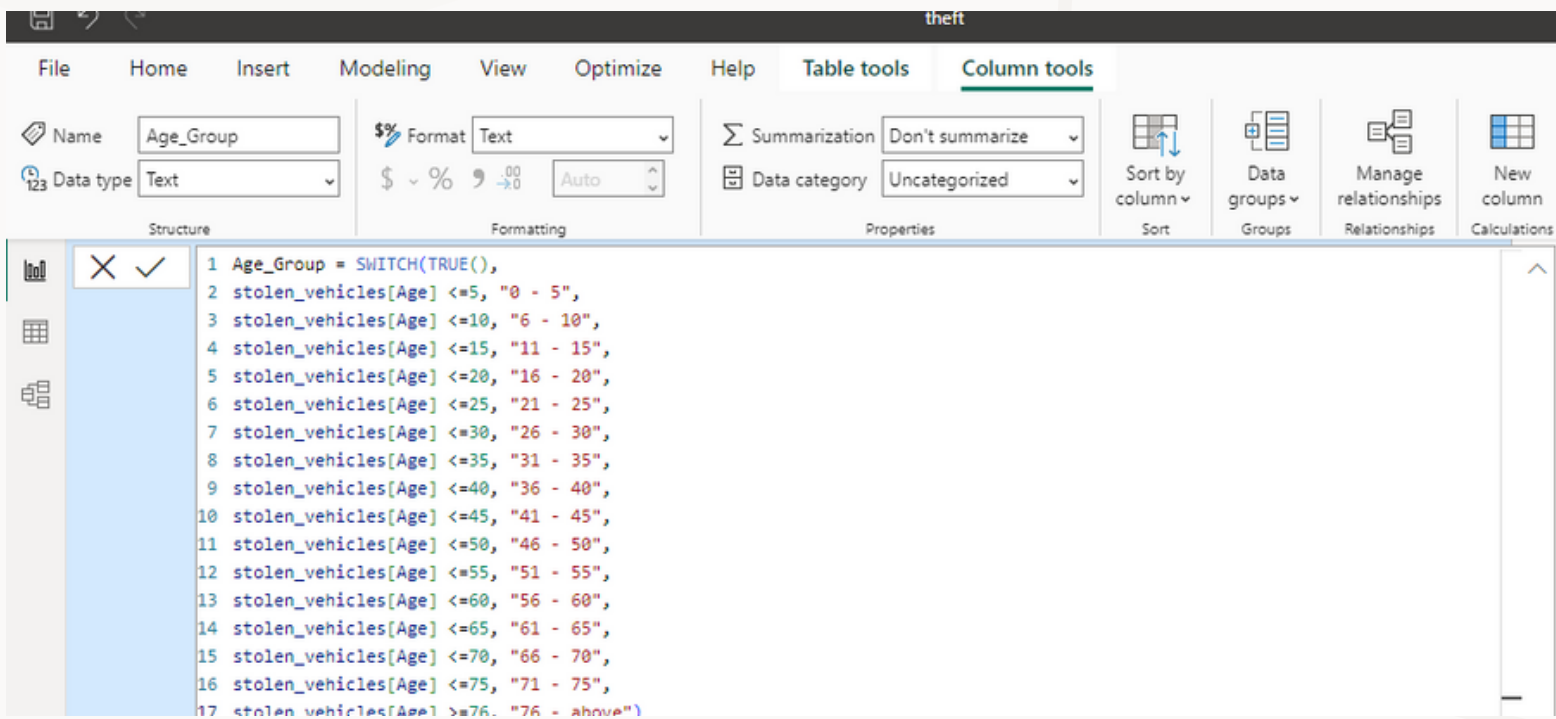
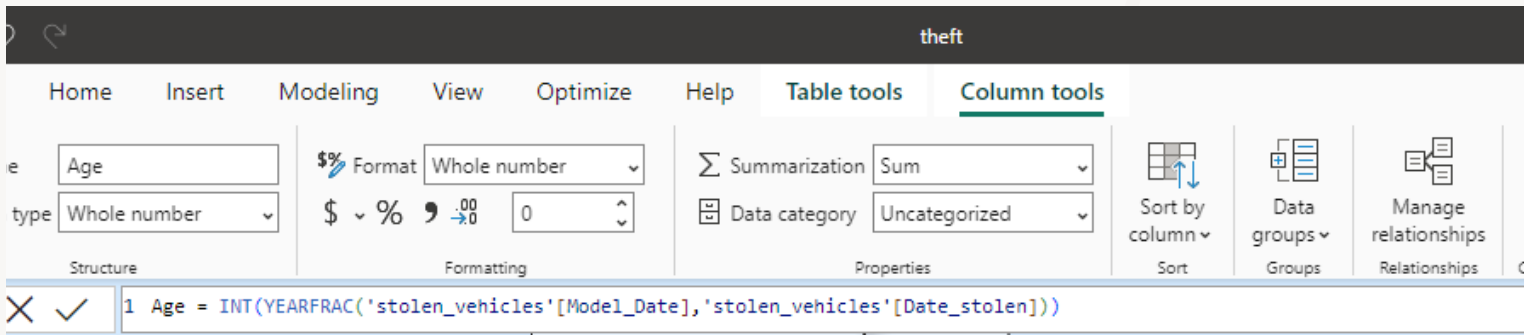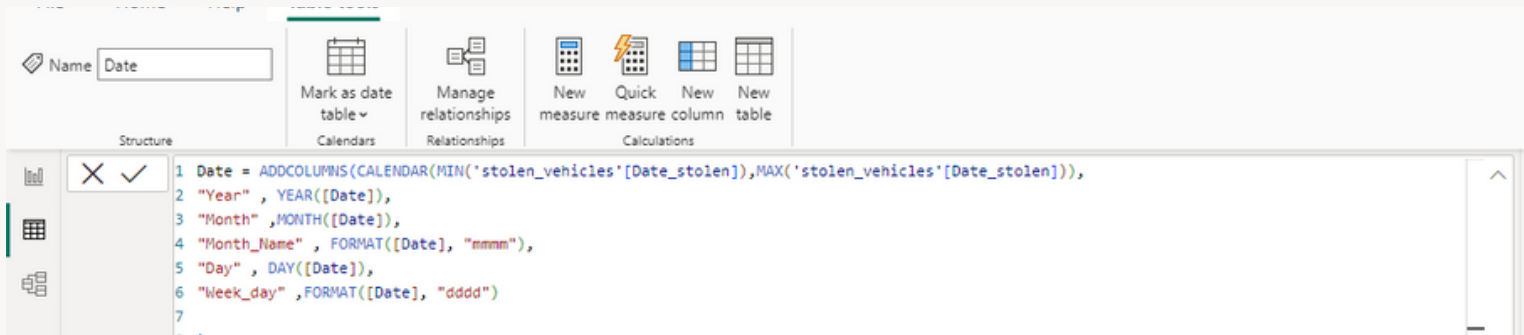### Recommended Analysis

1. What day of the week are vehicles most often and least often stolen?
2. What types of vehicles are most often and least often stolen? Does this vary by region?
3. What is the average age of the vehicles that are stolen? Does this vary based on the vehicle type?
4. Which regions have the most and least number of stolen vehicles? What are the characteristics of the regions?

ENTITY-RELATIONSHIP DIAGRAM (ERD)

Creating relationships between tables in an Entity-Relationship Diagram (ERD) is crucial for designing a well-structured database and ensuring the effectiveness of data visualization tools like Power BI. It is also essential for maintaining data integrity, improving query efficiency, and enabling comprehensive analysis and visualization. Lastly it ensures that your database is structured in a way that supports meaningful insights and reporting.

METRIC AND MEASURES

DAX Functions were used to create new Date table and also to create age and age-group measures.

METRIC AND MEASURES

```
MAX stolen cf =
    VAR MaxStolen = MAXX(
        ALL('Date'[Week_day]),
        [Total_stolen_vehicle])
    VAR Check =
        IF([Total_stolen_vehicle] = MaxStolen,"#99d3d3","Sherpa Blue")
    RETURN
        Check
```

```
MAX stolen cf 2 =
    VAR MaxStolen = MAXX(
        ALL('make_details'[make_name]),
        [Total_stolen_vehicle])
    VAR Check =
        IF([Total_stolen_vehicle] = MaxStolen,"#99d3d3","Sherpa Blue")
    RETURN
        Check
```
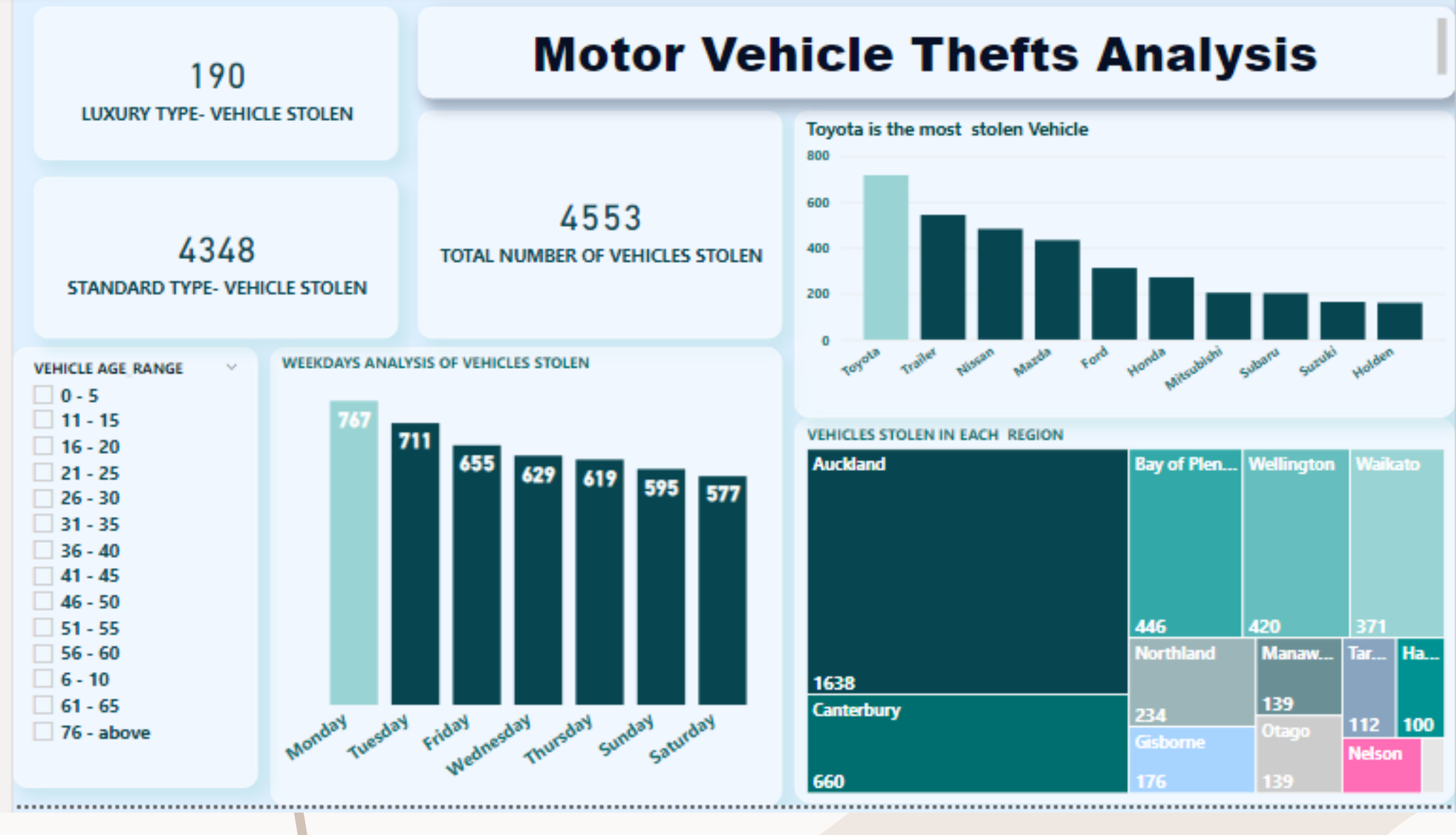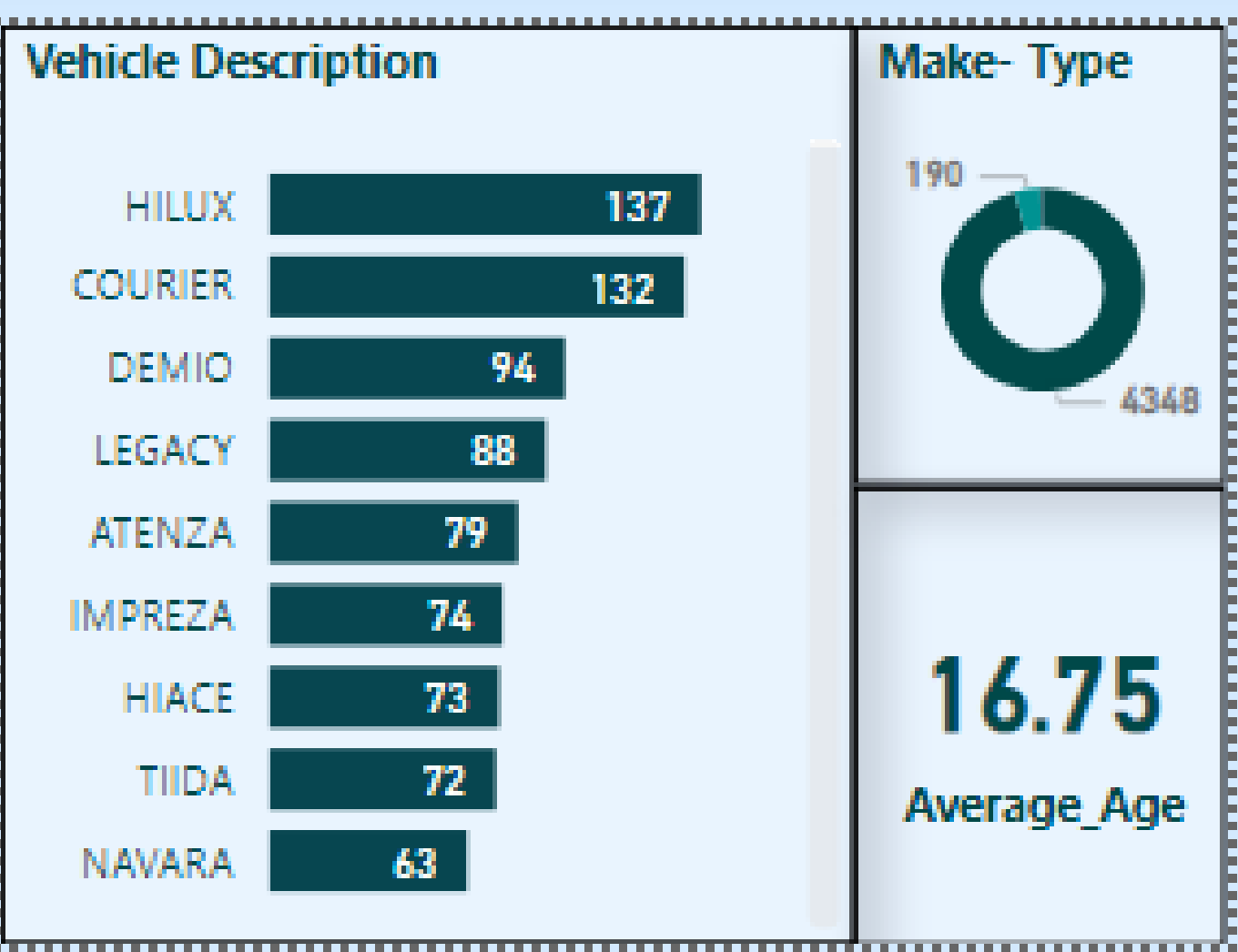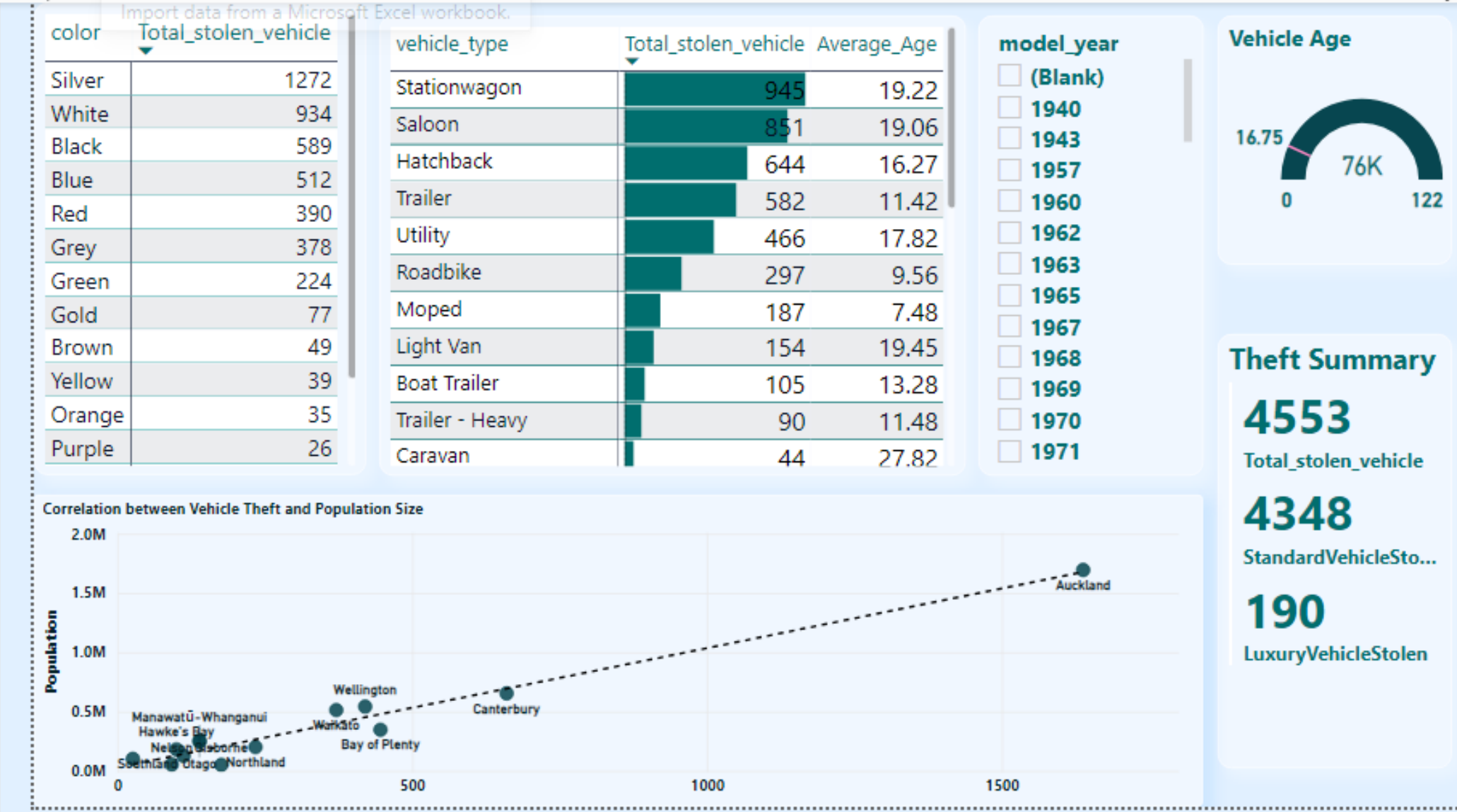
```
MAX stolen cf 3 =
    VAR MaxStolen = MAXX(
        ALL('stolen_vehicles'[model_year]),
        [Total_stolen_vehicle])
    VAR Check =
        IF([Total_stolen_vehicle] = MaxStolen,"#99d3d3","Sherpa Blue")
    RETURN
        Check
```

DAX Functions were used to create new Date table and also to create age, age-group measures and conditional formating.

Motor Vehicle Thefts Analysis

190
LUXURY TYPE- VEHICLE STOLEN

4348
STANDARD TYPE- VEHICLE STOLEN

4553
TOTAL NUMBER OF VEHICLES STOLEN

Toyota is the most stolen Vehicle

Toyota, Trailer, Nissan, Mazda, Ford, Honda, Mitsubishi, Subaru, Suzuki, Holden

VEHICLE AGE RANGE
- [ ] 0 - 5
- [ ] 11 - 15
- [ ] 16 - 20
- [ ] 21 - 25
- [ ] 26 - 30
- [ ] 31 - 35
- [ ] 36 - 40
- [ ] 41 - 45
- [ ] 46 - 50
- [ ] 51 - 55
- [ ] 56 - 60
- [ ] 6 - 10
- [ ] 61 - 65
- [ ] 76 - above

WEEKDAYS ANALYSIS OF VEHICLES STOLEN

Monday	Tuesday	Friday	Wednesday	Thursday	Sunday	Saturday
767	711	655	629	619	595	577

VEHICLES STOLEN IN EACH REGION

Auckland		Bay of Plen...	Wellington	Waikato
		446	420	371
1638		Northland	Manaw...	Tar... / Ha...
Canterbury		234	139	112 / 100
		Gisborne	Otago	Nelson
660		176	139	

Cars manufactured in 2005 were the subject of the most theft Cars

(Bar chart: horizontal axis years 1940, 1960, 1980, 2000, 2020; vertical axis 0 to 300)

Date Stolen Trend

make_type (Blank) ● Luxury ● Standard

Month	Standard	Luxury
January	711	29
February	723	5 / 35
March	999	51 / 3
April	315	2 / 12
October	437	2 / 25
November	537	1 / 22
December	626	2 / 15

DASHBOARD

The above dashboard is the visual representation of data providing a consolidated and interactive view of key performance indicators (KPIs), metrics, and other important informations, which includes: Total number of vehicle stolen, vehicle stolen by state, weekdays analysis,vehicle modal year theft analysis and the date stolen analysis.

color	Total_stolen_vehicle
Silver	1272
White	934
Black	589
Blue	512
Red	390
Grey	378
Green	224
Gold	77
Brown	49
Yellow	39
Orange	35
Purple	26

vehicle_type	Total_stolen_vehicle	Average_Age
Stationwagon	945	19.22
Saloon	851	19.06
Hatchback	644	16.27
Trailer	582	11.42
Utility	466	17.82
Roadbike	297	9.56
Moped	187	7.48
Light Van	154	19.45
Boat Trailer	105	13.28
Trailer - Heavy	90	11.48
Caravan	44	27.82

model_year
- ☐ (Blank)
- ☐ 1940
- ☐ 1943
- ☐ 1957
- ☐ 1960
- ☐ 1962
- ☐ 1963
- ☐ 1965
- ☐ 1967
- ☐ 1968
- ☐ 1969
- ☐ 1970
- ☐ 1971

Vehicle Age

16.75 — 76K — 0 — 122

Theft Summary

4553
Total_stolen_vehicle

4348
StandardVehicleSto...

190
LuxuryVehicleStolen

Correlation between Vehicle Theft and Population Size

Vehicle Description

HILUX	137
COURIER	132
DEMIO	94
LEGACY	88
ATENZA	79
IMPREZA	74
HIACE	73
TIIDA	72
NAVARA	63

Make- Type

190 — 4348

16.75
Average_Age

DASHBOARD

The above Dashboard shows the relationship and metrics regarding stolen vehicles and average_age, color with vehicle type and modal year as the slicer. the second dashboard is used as tool tip on both weekdays and stolen vehicle in each state analysis.

INSIGHT

The comprehensive insight is based on vehicle theft in New Zealand between 07/10/2021 and 06/04/2022. (6 months). The dataset was collected from New Zealand police department via Maven analytics.

·Auckland is the hot spot for theft with over a third of the nation's stolen cars occurring in or around the super city. Auckland reported far higher cases of vehicle theft claims with 1638 within 6 months. It's well above runner-up Canterbury, which reported 660 claims.T

·Cars manufactured in 2005 were the subject of the most theft Cars without advanced security features such as keyless ignitions, immobilisers, or alarms, or parked where a swift getaway is possible, have a higher risk of being stolen.

·While the Toyota Hilux may be the car most stolen nationwide, in Auckland thieves clearly have a different taste, with Nissan Tiida and Toyota Aqua taking the lead.

·Saloon and Station wagon models consistently lead thefts across regions, suggestion a region wide market demand.

·There is a positive correlation between vehicle theft and population size, suggesting that area with larger populations experience more theft.

·Vehicles with silver colour are the most stolen possibly because sliver is common. While pink vehicles are the least stolen.

RECOMMENDATION

·Rampant vehicle theft makes it more important to ensure insurance details are current.

·Parking in a busy area, with surveillance cameras if possible.

·Older car without an immobiliser or alarm should use a steering-wheel lock. In fact, a steering-wheel lock is a good deterrent for modern cars, too. As keyless entry systems can be hacked by tech-savvy car thieves.

·There is need to be vigilance and always apply common sense, the police also needs to re-strategize to combat theft especially during the night.

ABOUT ME

Enthusiastic Data Analyst with a good background in SQL, BI tools like power Bi, and Microsoft Excel. Over 1 year of experience in translating complex datasets into clear insights to boost the decision-making process, with a proven track record of enhancing business processes and growth.

CONTACT

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