

# BI Final Project

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**Dataset:** Pakistan Used Cars

**Kaggle:** [Pakistan Used Cars | Kaggle](#)

## BI Strategy

*Step 1: Gather background knowledge of the subject.*

**The excel file is uploaded.**

*Step 2: Data Wrangling on Python*

The wrangling was very time consuming as about 2000 rows had to be filled for each column. The price column proved to be quite useful in this regard for it had no missing value. Collab Link:

<https://colab.research.google.com/drive/1bnppkkMN89pRpqxhmUsyzxfKypQesyvT?usp=sharing>

The way the missing values were filled is mentioned in the excel file.

Mostly, the Price variable was used to fill in the missing values. To get a comparison of price with existing data, charts on PowerBI were made, the PowerBI file is attached.

## ANALYZING ALL THE COLUMNS:

Lots of missing values; filled above.

Applying df.unique to columns:

1. Price (OK)
2. Registered City (OK)
3. Price (Fixed Price of two Suzuki vehicles [values too large; replaced with model mean])
4. Year (OK)
5. Condition (OK)
6. Fuel Type (OK)
7. Brand (OK)
8. KMs Driven (OK)
9. Transaction Type (OK)

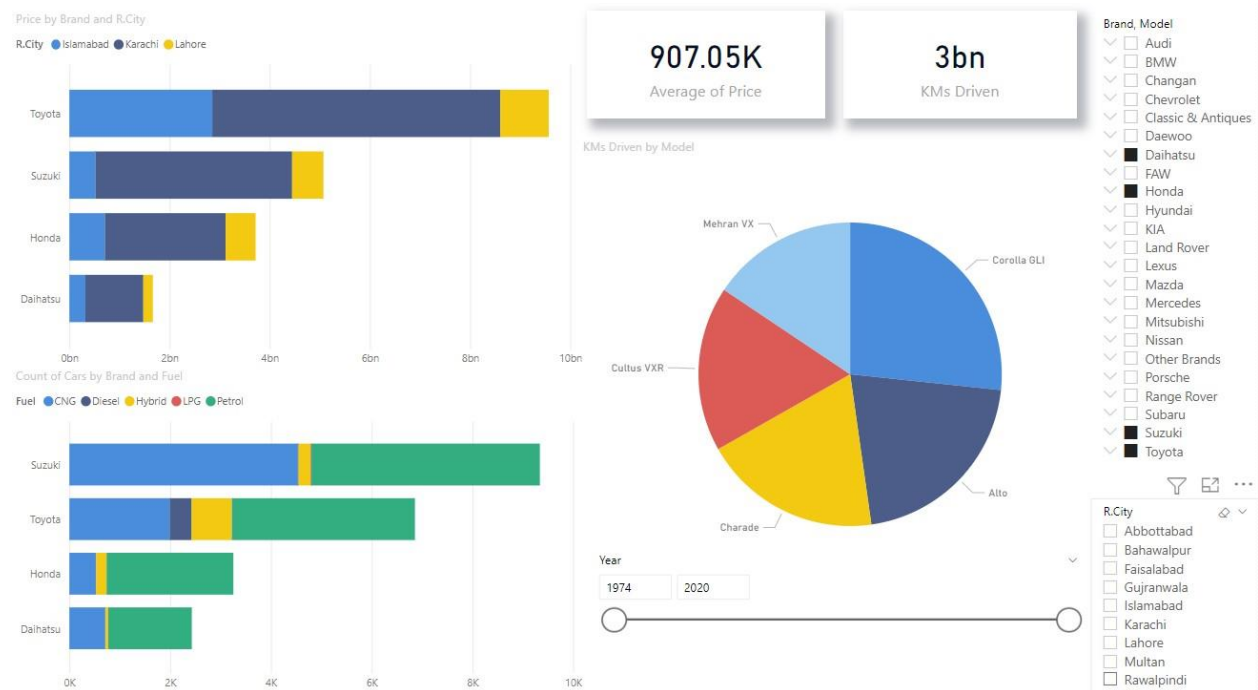
### NOTE (IMP):

Analysis of all numerical columns (measures) will be done against the dimensions.

### Key Questions, Problem Statement, Dimensions & Measures:

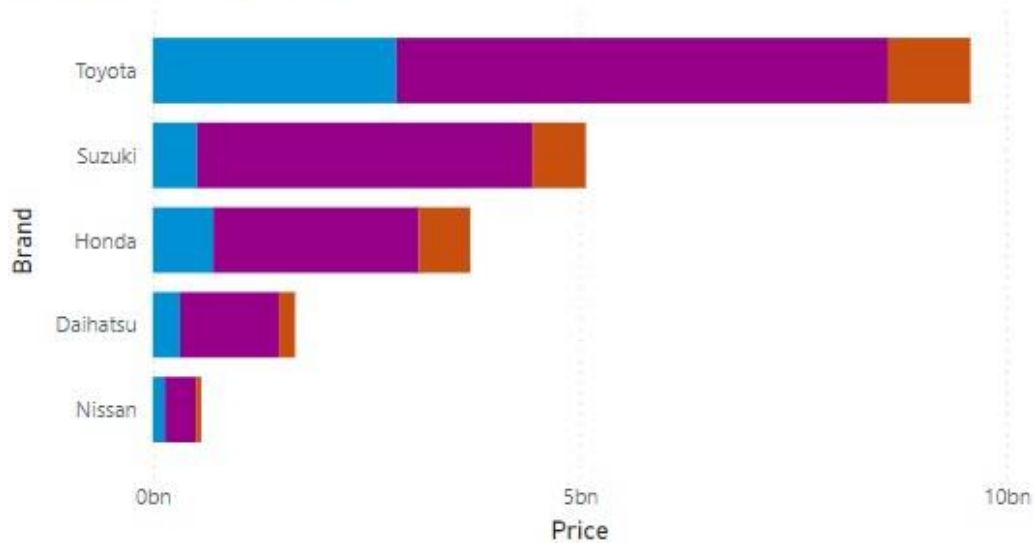
All mentioned in the Data.Info part of the Business Knowledge excel sheet.

## Dashboard



### Price by Brand and R.City

R.City ● Islamabad ● Karachi ● Lahore



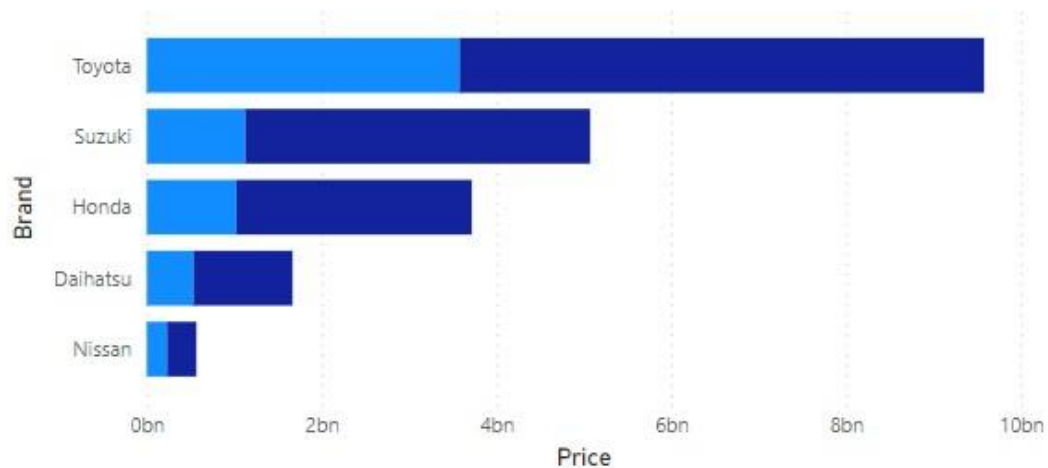
Toyota dominates the market in car sales followed by Suzuki & Honda. Surprising to see so many sales of Japanese cars under Daihatsu.

Toyota has almost double the market share as that of Suzuki.

Toyota is more common in Islamabad as compared to Suzuki. Despite having overall greater prices, Honda is more common in Islamabad as compared to Suzuki.

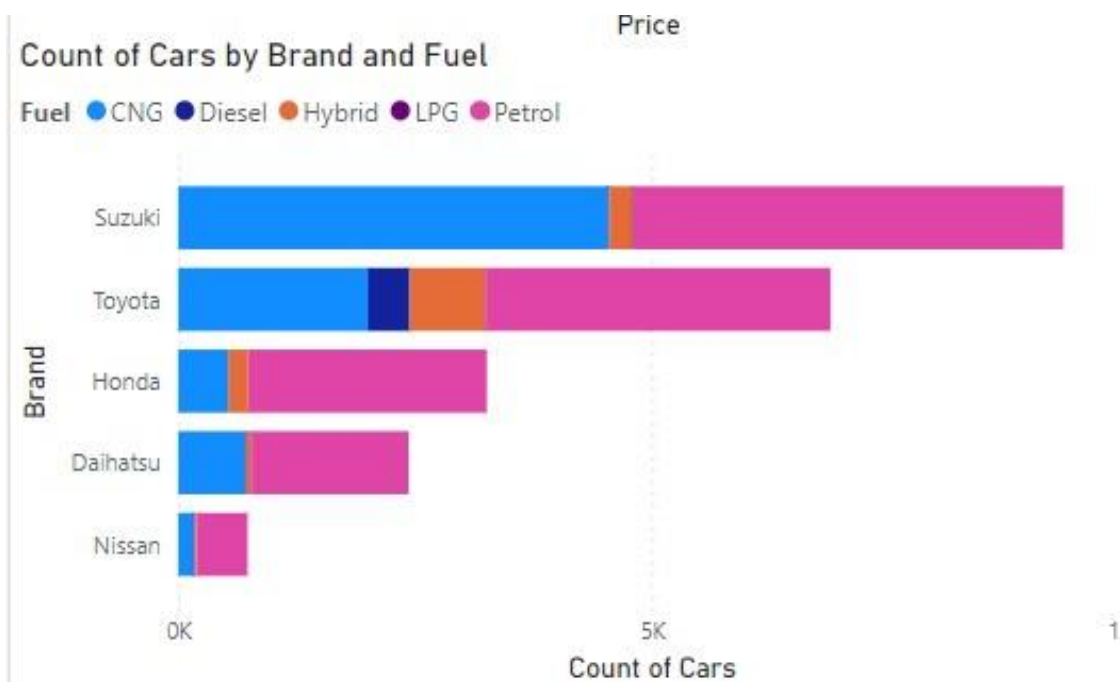
### Price by Brand and Condition

Condition ● New ● Used

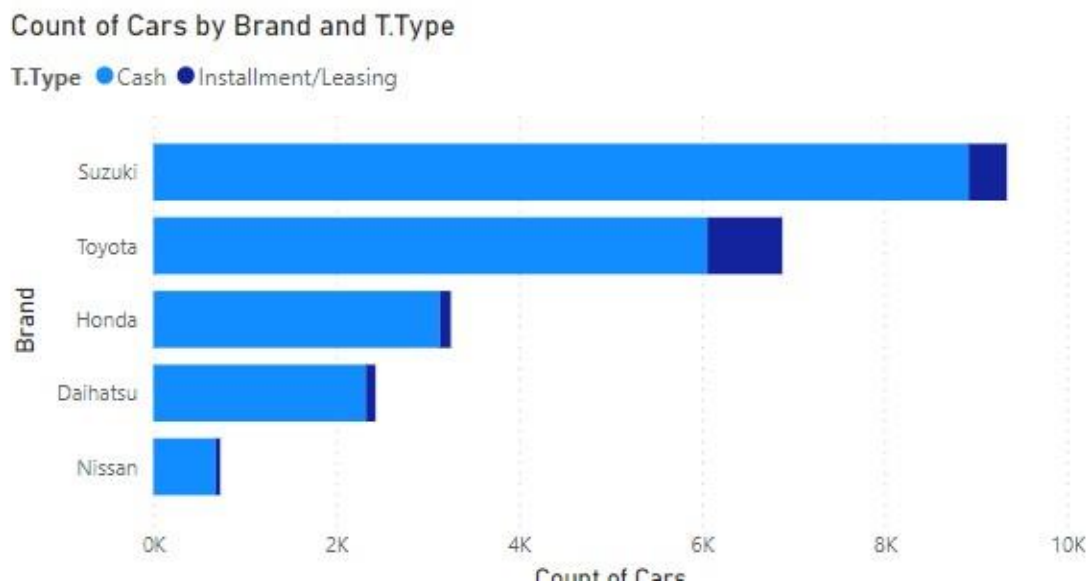


Suzuki & Honda have relatively more used cars than new cars as compared to Toyota.

Nissan also has almost an equal number of new and used cars for sale.



Although lesser than Toyota in Total Price, Suzuki has more number of units in adverts.  
 Honda has almost half number of cars on sale as compared to Toyota.  
 Daihatsu catching up with Honda in number of Cars for sale.  
 Only Toyota has a significant chunk of cars on Diesel.  
 Toyota is also leading the number of Cars in the Hybrid category amongst all brands.



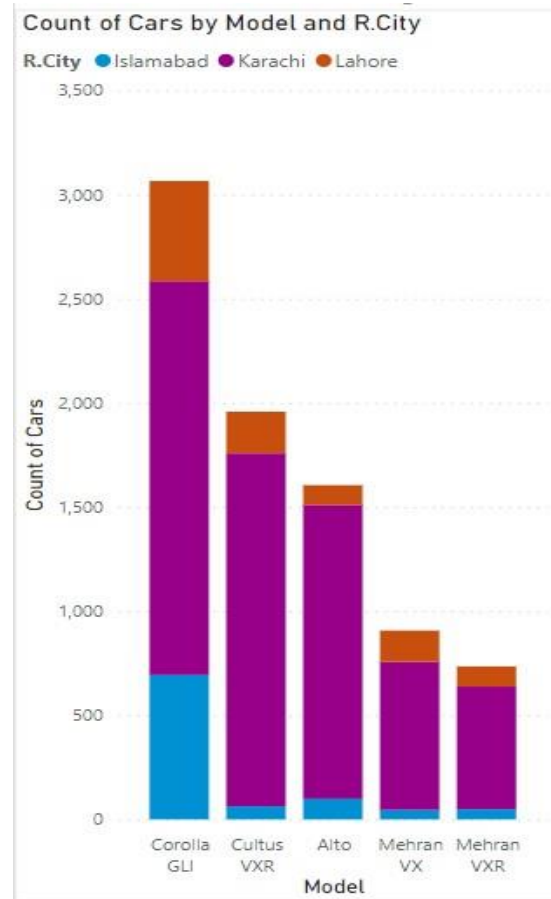
Very limited leasing options with Honda, Toyota leading the way followed by Suzuki. Mostly cars are not leased.

Corolla GLI the most popular car followed by Cultus VXR & Alto.

All cars to make it to the top 5 are relatively mostly in the Karachi market and have little presence in cities of Lahore & Islamabad.

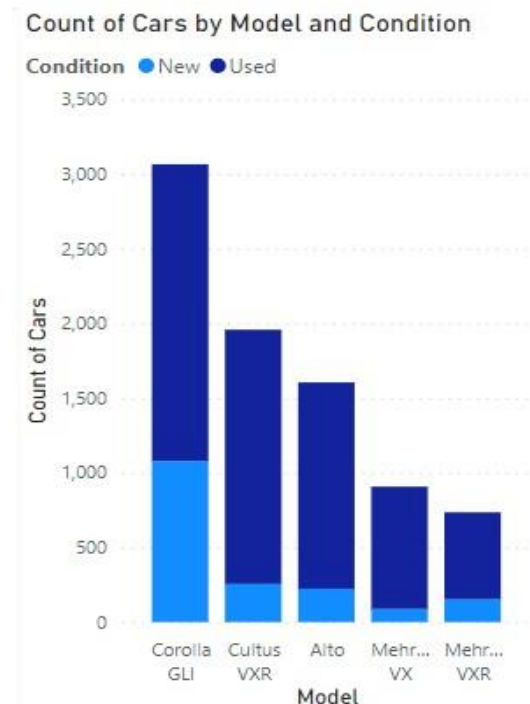
However, Corolla GLI has presence in Karachi and in other markets of Lahore & Islamabad.

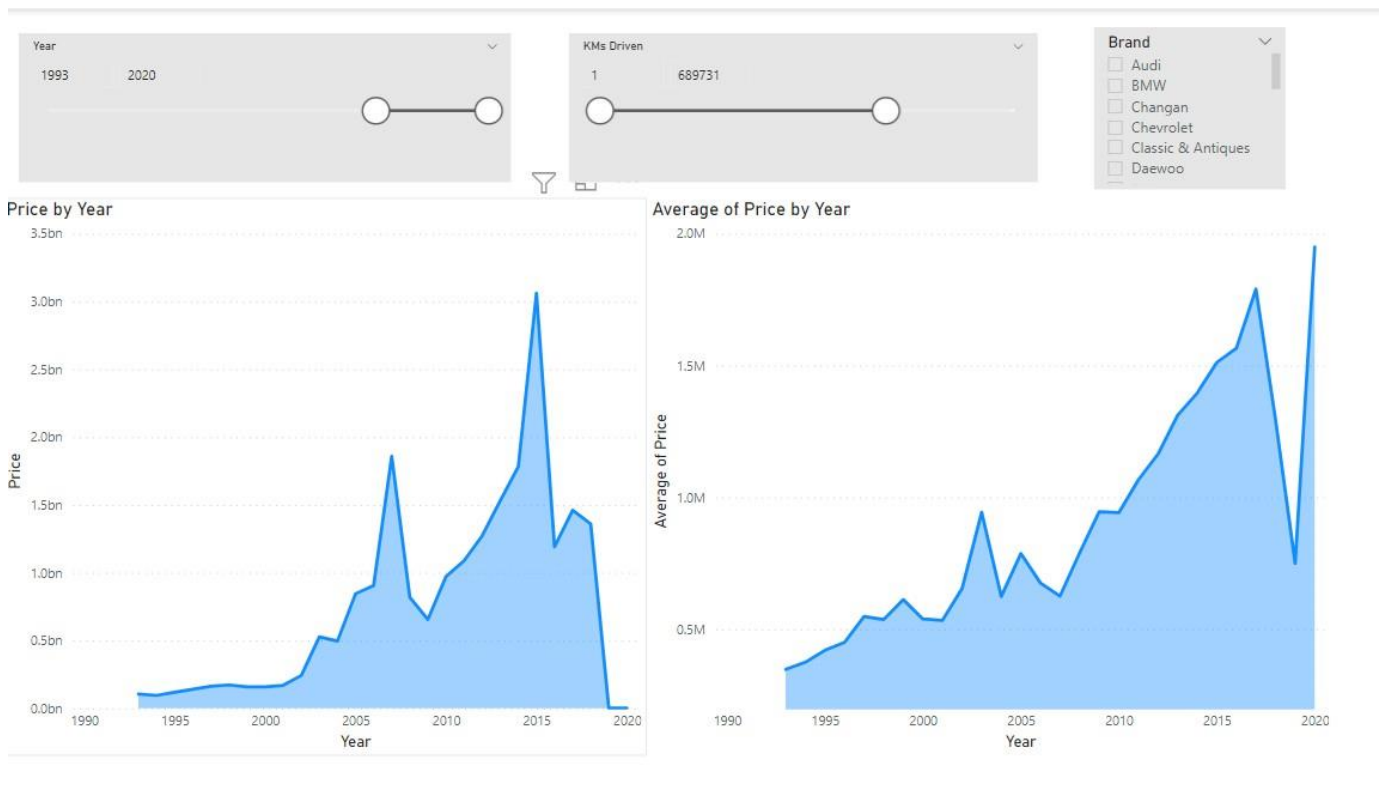
Alto most popular in Islamabad after Corolla GLI.



All cars have a significantly greater percentage of used cars than New cars as adverts however Corolla GLI has many adverts for a new car as well.

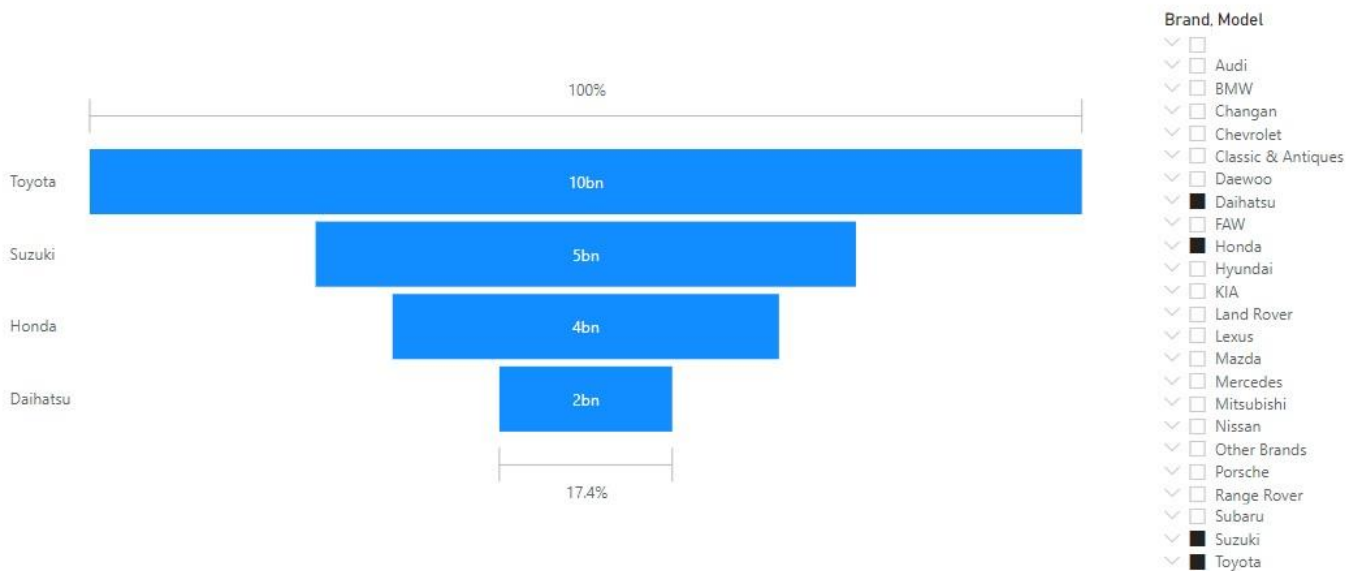
Two models of Mehran make it to this list showing its popularity amongst the people.



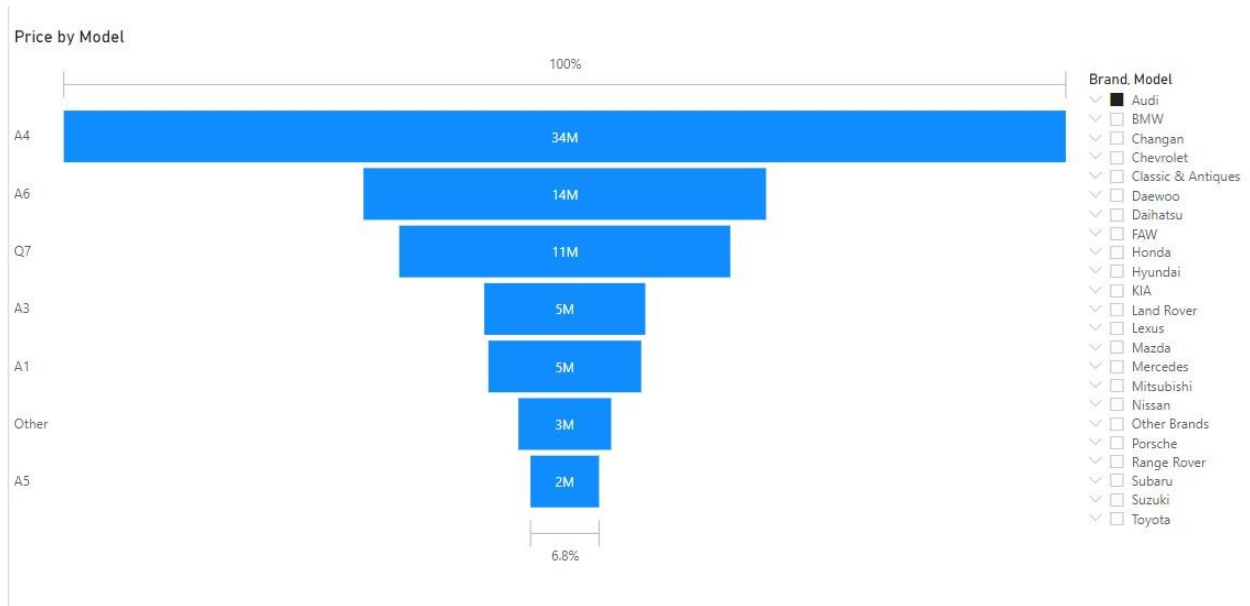


The average and total price both increase over the stated time period, as expected. Specific brands can be selected from the filter and then be drilled down upon further.

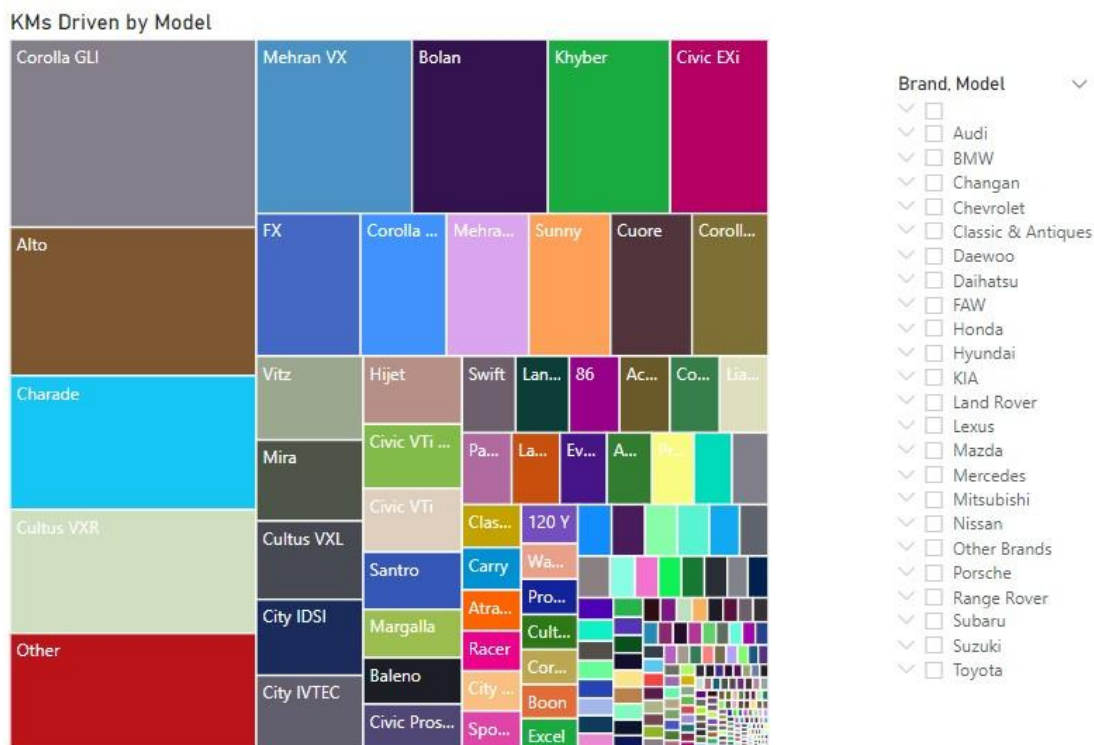
Price by Brand



Toyota has 5 times the shares in the market of Daihatsu. Suzuki has half the total price of Toyota in the market.

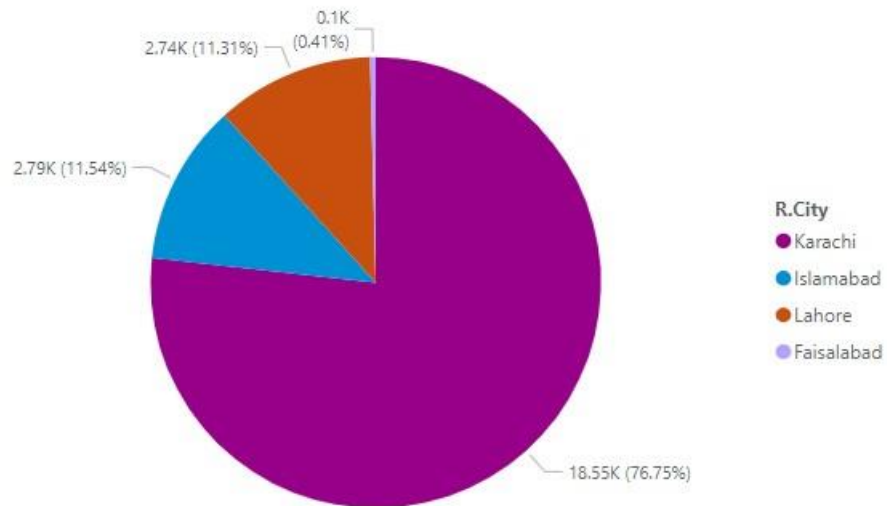


The models within Audi show is that the Audi has about half of the total sales share as that of the Audi A4. The Q3 follows with 11M shares in the total price of the adverts.



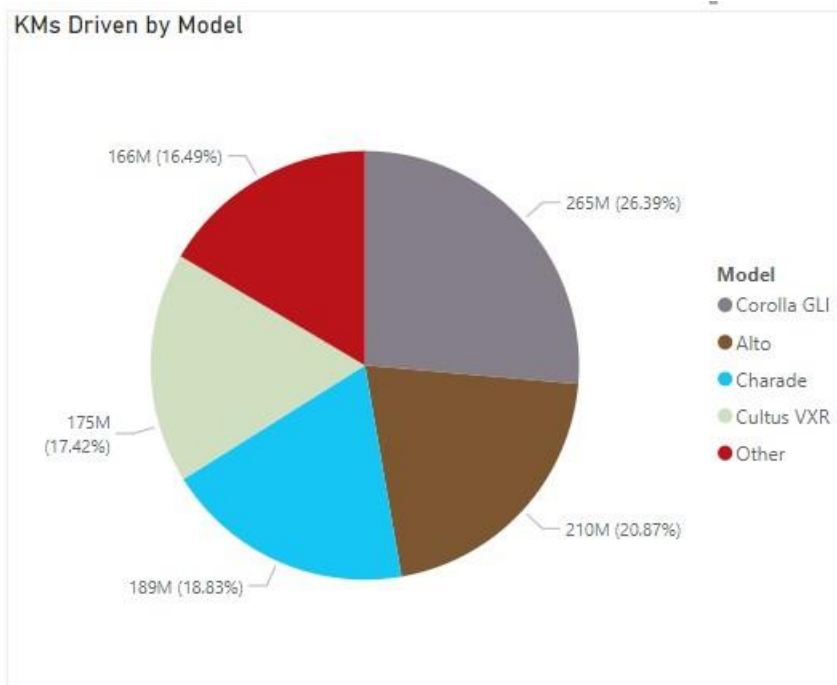
Corolla GLI leading in mileage with about same values for adjacent car models.

Count of Cars by R.City



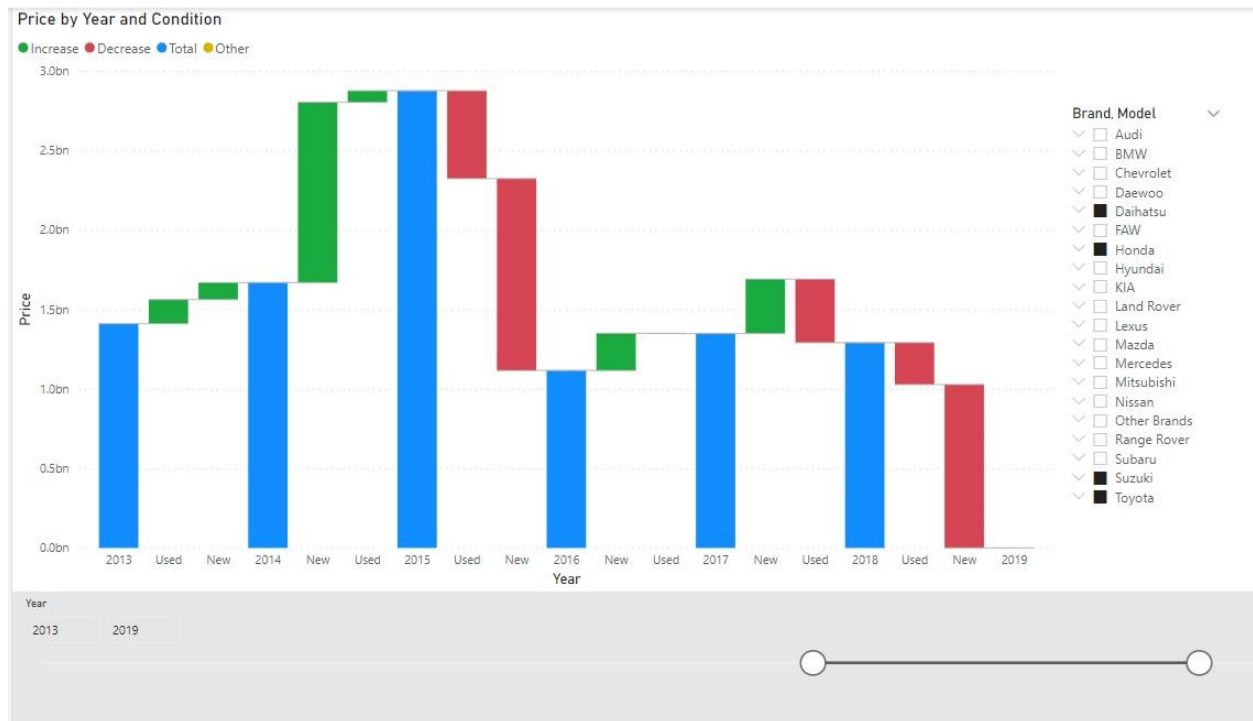
Karachi dominating the market share in terms of the number of adverts of used cars. Islamabad and Lahore have almost the same number of advertisements.

KMs Driven by Model

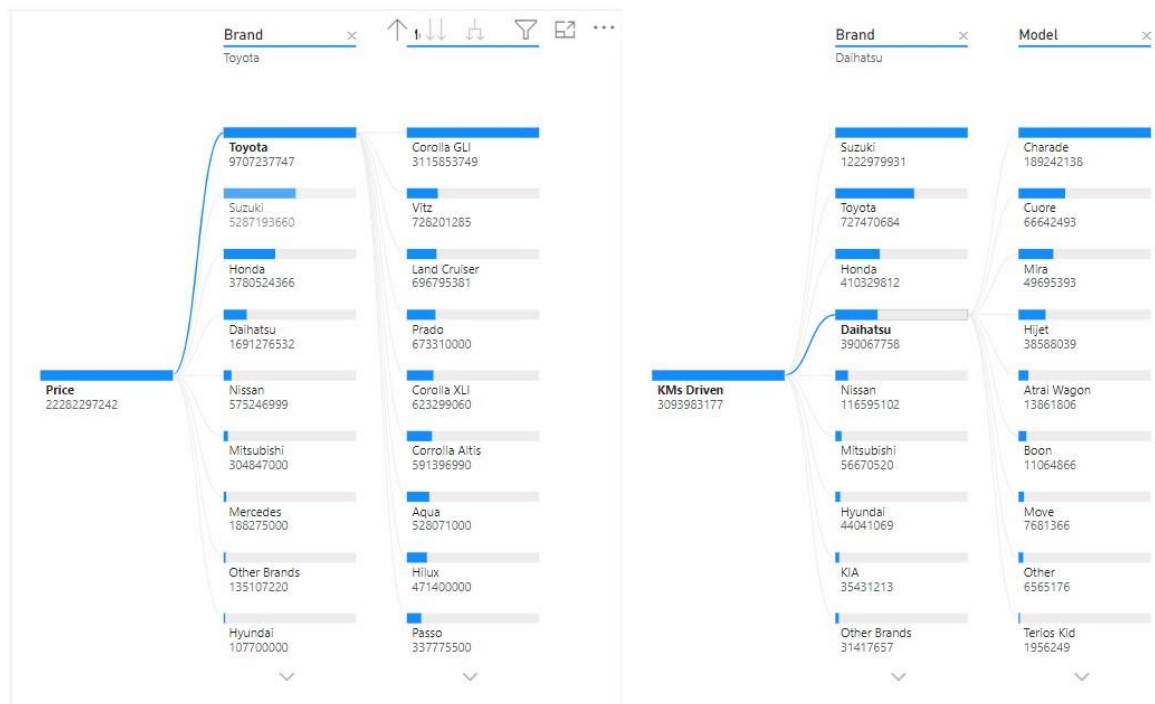


Roughly equal spread out of car models that dominate the number of KMs driven on Pakistani roads.



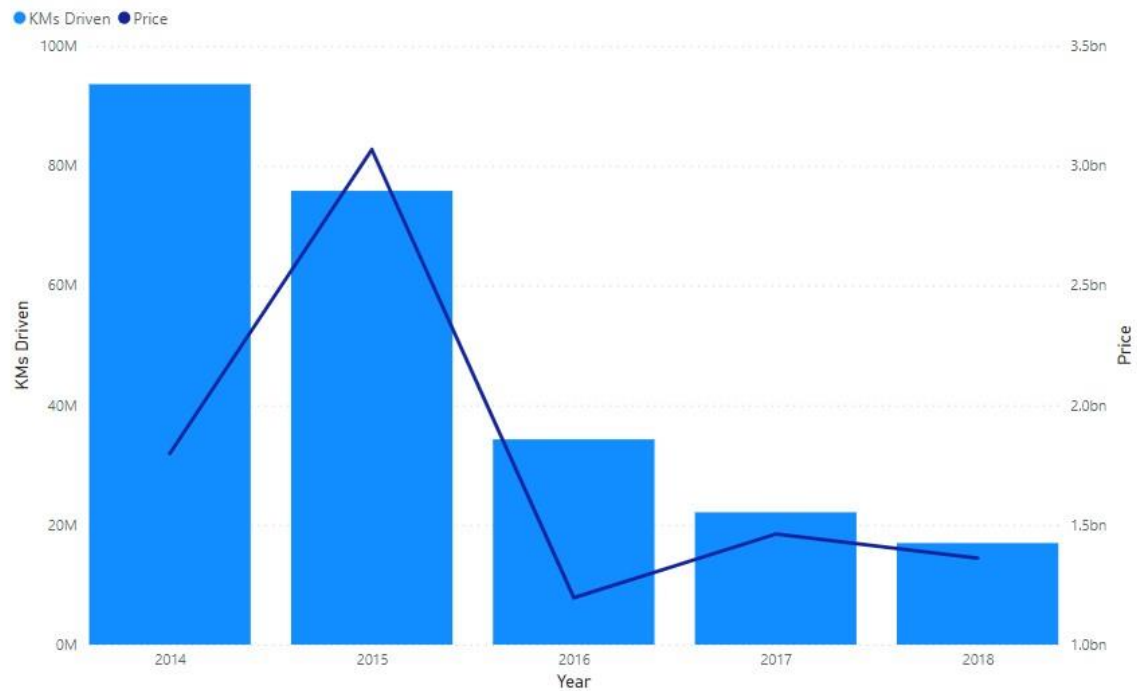


Cars manufactured in 2015 have greater total price as the new price category for them significantly rose. 2017 – 2018 was a steady stage which saw an increase in new cars almost equal to the decrease in price for the used cars.



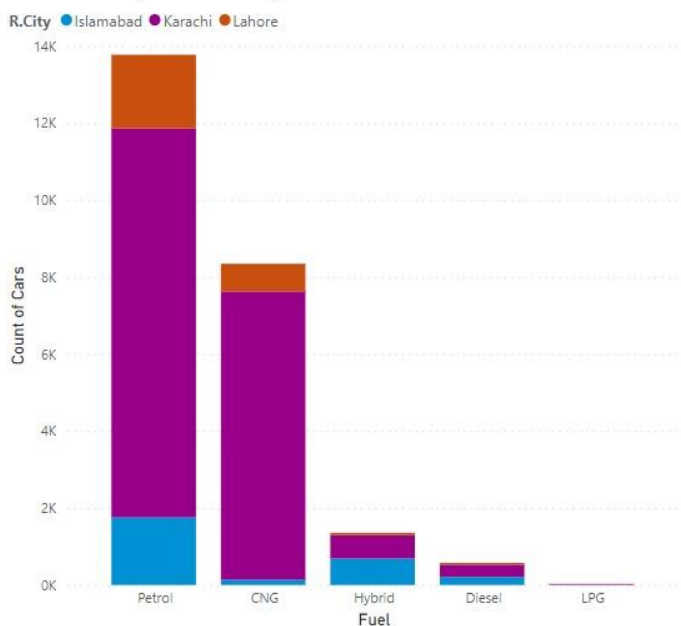
Total Price and KMs driven categorized for easily extracting the relevant information.

KMs Driven and Price by Year

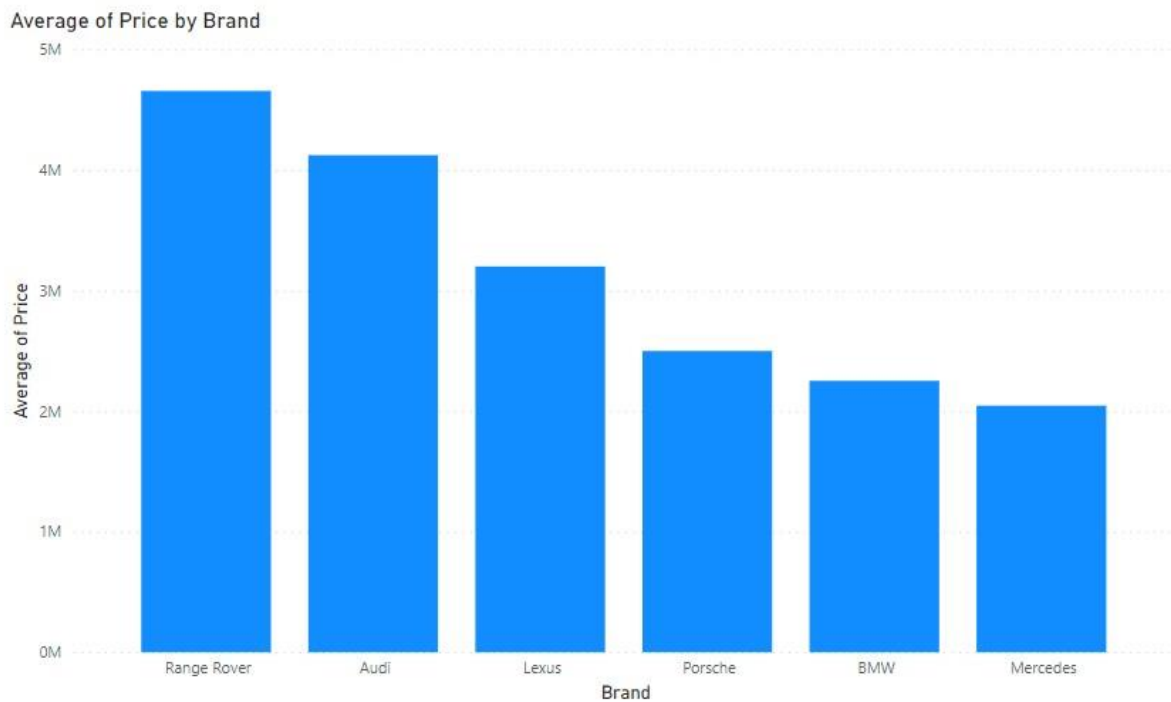


Despite witnessing a decrease in the overall price for 2014 – 2015 car manufacturers, the mileage increased.

Count of Cars by Fuel and R.City

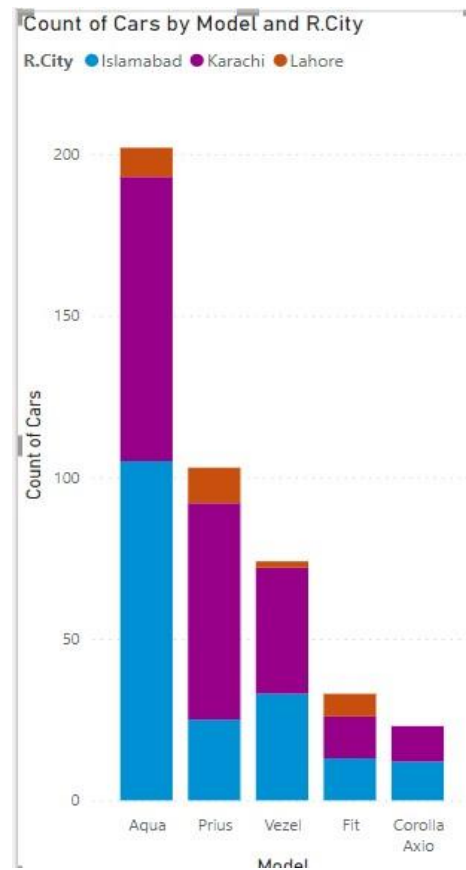


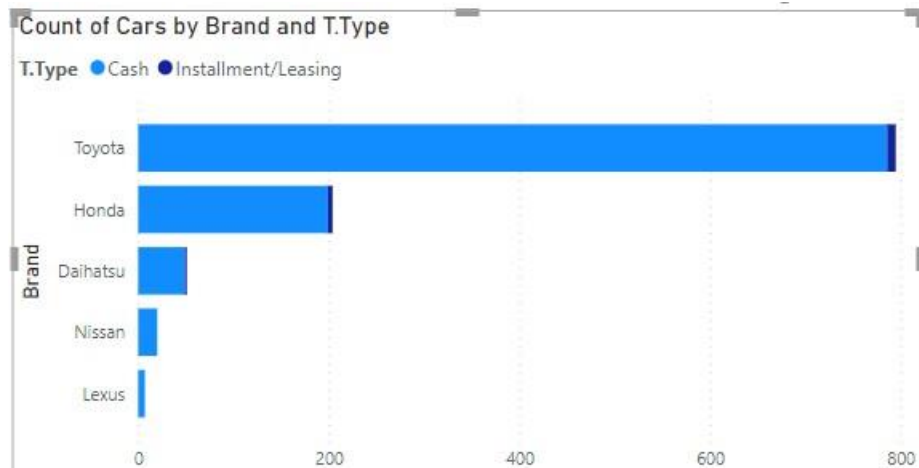
Almost no hybrid cars in Lahore which is an interesting revelation. People in Islamabad seem to not use CNG at all.



The most expensive brands in Pakistan. Range Rover twice as much expensive as Mercedes, Porsche & BMW.

Toyota Aqua turns out to be the most popular in the hybrid category followed by Prius and then Honda Vezel. Toyota Aqua is in high demand in Islamabad. People in Lahore do not seem to prefer Honda Vezel and Corolla Axio.





With Filter set to show Hybrid cars only

Toyota has the most number of Hybrid cars followed by Honda & Daihatsu. Hybrid cars are rarely sold on installments.

## Analysis Summary

1. Most number of Cars are from Toyota in the market. The leading model within Toyota is Corolla GLi.
2. The cars with the most mileage are primarily from Toyota, Suzuki & Honda. Suzuki Alto, Corolla GLi, Honda Civic EXi, Daihatsu Charade top the list in the respective order.
3. Karachi has the most number of used cars with Suzuki topping the list in count followed by Toyota.
4. Petrol is the most popular fuel type with almost no presence of Hybrid fuel type in Lahore.
5. Most number of KMs driven are with petrol as well.
6. Toyota Aqua the most popular hybrid car across Pakistan.
7. The brand with the most number of Hybrid Cars in Pakistan is Toyota.
8. Karachi is the city (followed by Islamabad) that prefers Hybrid cars the most as compared to other cities.