Business analytics
Analysis of car advertisement data

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4.1.1 Assessing expectations

Registration year	**Mileage**	Horsepower	Width (mm)	Length (mm)	Average mpg	Top speed (mph)	**Predicted price**
2019	**60000**	135	2027	4284	49	116	**17596**
2019	**130000**	135	2027	4284	49	116	**15267**

Table 4.1: Assessing expectations

4.1.2 Usage of example data

Registration year	Mileage	Horsepower	Width (mm)	Length (mm)	Average mpg	Top speed (mph)	**Predicted price (£)**
2014	180000	110	1799	4204	45	110	**5601**
2016	150000	120	2027	4255	48	112	**12130**
2018	80000	130	2027	4255	50	115	**16136**
2015	190000	115	1799	4204	44	108	**5819**

Table 4.2: Assessing model for business use cases

4.2 Findings

4.2.1 In line with presumptions

Mileage ↔ Price

Engine size ↔ Price

4.2.2 Outliers

Engine size ↔ Price

Width ↔ Price

Year ↔ Price

TODO include example of higher influence of mileage the older the car is

5 Conclusion

5.1 Further questions

Lack of sales data regarding advertisement

While the given dataset included cohesive data regarding the advertisement price of cars in the used vehicle market, there is no indicator given, whether the car was actually sold at the price that it has been advertised for.
Nevertheless, while you can expect a few dealerships to over- / undershoot their prices, considering the scale of the dataset for the overall market you can expect that effect to even out. However, evaluating whether there is a trend that used cars are systematically under- / overpriced in advertisements is only possible if you compare the given advertisement data set to data containing real sales.

Inter-model comparison of findings

Assess value depreciation

One possible further research topic is the comparison of a car's new price to its future advertisement prices. For each model in the used-car advertisement dataset, there is a corresponding data point that contains, among others, the manufacturer's suggested retail price (MSRP).
Given that information, the following questions could be analyzed:

- Which model retains the most value compared to its MSRP?
- Given five years of use, which car's price decreased the most?
- Is there a correlation between value depreciation and the manufacturer of the car?

This information can be useful to customers considering the purchase of a new car in order to assess its potential resale value in the future.

5.2 Résumé

Bibliography

[1] *Industrie-Roboter - Hirata Engineering Europe GmbH.* URL: `https://www.hirata.de/de/produkte/scara-roboter` (visited on 02/02/2024).