

# Used Cars in Egypt



## Contribution

Abdelrahman Ayman  
Seif matar  
Omar el hossainy

## Introduction

Used cars are a significant segment of the automotive market in Egypt. This research aims to analyze factors affecting the resale value of used cars, particularly focusing on mileage and the country of origin. Understanding these factors can help buyers make informed decisions and sellers maximize their returns.

## Research Question

**Research Question:**  
How does mileage affect the resale value of used cars in Egypt, and do cars from certain countries retain their value better than others?

**Null Hypotheses:**

There is no significant relationship between mileage and the resale value of used cars in Egypt.  
There are no significant differences in the resale values of used cars from different countries in Egypt.

**Alternative Hypotheses:**

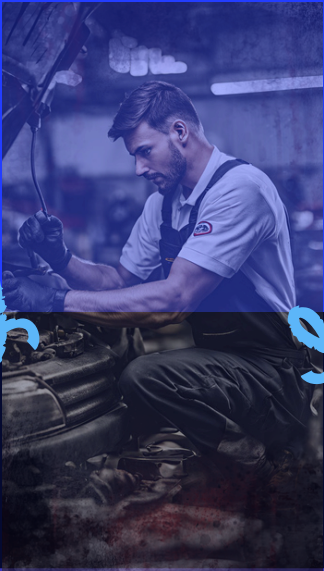
Higher mileage significantly decreases the resale value of used cars in Egypt.  
There are significant differences in the resale values of used cars from different countries in Egypt, with Japanese and Korean cars retaining their value better than European and American cars.

## Dataset

The dataset was collected from a popular online platform for used cars in Egypt "Hatla2ee". It includes information on car make, model, year, price, mileage, and nationality. Data cleaning involved handling missing values and converting price and mileage into numerical formats for analysis

## Hypothesis

Higher mileage significantly decreases the resale value of used cars in Egypt. Japanese and Korean used cars retain their value better over time compared to European and American used cars.



## Analysis

\* Regression Analysis(numerical analysis) : A linear regression model was used to quantify the impact of mileage on resale value. Results indicated a strong negative correlation between mileage and resale value (p-value < 0.05).

\* ANOVA Test(categorical analysis) : An ANOVA test was conducted to compare resale values across different nationalities. Significant differences were found (p-value < 0.05), with Japanese and Korean cars showing higher retention of value.

OLS Regression Results						
Dep. Variable:	Price	R-squared:	0.039			
Model:	OLS	Adj. R-squared:	0.039			
Method:	Least Squares	F-statistic:	1261.			
Date:	Sun, 26 May 2024	Prob (F-statistic):	6.95e-271			
Time:	13:02:25	Log-Likelihood:	-4.7457e+05			
No. Observations:	31095	AIC:	9.491e+05			
Df Residuals:	31093	BIC:	9.492e+05			
Df Model:	1					
Covariance Type:	nonrobust					
	coef	std err	t	P> t	[0.025	0.975]
const	1.085e+06	7899.174	152.794	0.000	1.07e+06	1.1e+06
Mileage	-0.9520	0.027	-35.517	0.000	-1.004	-0.899
Omnibus:	28271.193	Durbin-Watson:	1.971			
Prob(Omnibus):	0.000	Jarque-Bera (JB):	1130190.810			
Skew:	4.391	Prob(JB):	0.00			
Kurtosis:	31.199	Cond. No.	3.23e+05			

	sum_sq	df	F	PR(>F)
C(nationality)	5.531169e+15	9.0	723.826897	0.0
Residual	2.529357e+16	29790.0	NaN	NaN

## Conclusion

- Higher mileage significantly reduces the resale value of used cars in Egypt.
- Japanese and Korean used cars retain their value better compared to European and American counterparts.
- Buyers should consider mileage and country of origin when purchasing used cars for better investment value.

