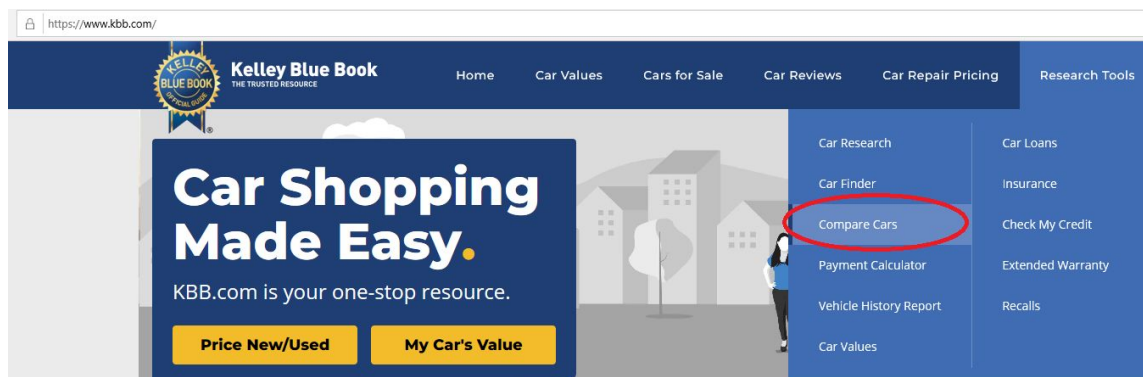


Math 117 – Statistics Project

Overview & Instruction

In this project, you will consider purchasing of a new vehicle. You can go to <https://www.kbb.com/> the Kelley Blue Book website for this research paper.



You will pick two different makes of the car and compare their MSRP (Manufacturer's Suggested Retail Price) with the difference in price can't be over \$2,500 to start. You will research different cars and their features to assess your personal preferences and specifications of the car. The main goal for this project is the following,

- You need to collect two quantitative variables and use real-life data to estimate the car depreciation rate and its value for your chosen cars by using linear regression method.

Introduction

You will write about the make and model of your chosen cars and state why you want to choose these two cars and you need to include at least 4 features and specifications that are important to you.

Part I: Data collection

You will collect the used car value for the make and model of your chosen car over the past 8 years from Autotrader.com.

- Collect and organize you data in a table. For example,

Car 1 Make Year	Price
2012	
2013	
2014	
2015	

2016	
2017	
2018	
2019	

Car 2 Make Year	Price
2012	
2013	
2014	
2015	
2016	
2017	
2018	
2019	

- Cite the source(s) of your data using APA format and list them in your reference page.

Linear Regression Model and Graph

In this section, you will use the technology to create the following items

1. Scatterplot of your data
2. Find the linear regression model/equation and correlation of your data. Round your numbers to two decimal places.
3. Plot the linear regression line into x and y coordinate system
 - a. A completed graph should contain the followings
 - The chart title
 - Label the x-axis and y-axis
 - Each axis show appropriate tick marks and scales.
4. A legend
5. Both horizontal and vertical intercept needs to be shown.
6. The mathematical equations must be typed professionally by using correct mathematic notation.

Data Analysis: Interpret the linear regression model

In this section, you will discuss the meaning of your defined regression models by answering the following questions:

- a. Define and interpret the correlation of your linear regression equations within the context of the model.
- b. Define and interpret slope of your linear regression equations within the context of the model.
- c. Define x and y intercepts and interpret their meanings within the context of the model.
- d. Use your predicted regression model to determine the value of the car after 3 year since you purchased.
- e. Do you expect both cars' values depreciate in the same way? Explain your reasons.

Requirements

- This is 10% of your course grade and you need to submit a 3-4 pages of professional report is expected and must be typed (double-spaced).
 - All mathematical and statistical notation must be typed by using mathematical notation package.
 - Use appropriate technology to create the graphs and charts.
 - All graphs, charts and table data must be embedded into the report.
Hand-drawn graphs and charts are not accepted.
- Your resources must be cited by using APA format.
- If you need clarification about any part of this project, please be sure to ask me.