

Questions for Business Analytics

Your company, Boats Victory, is a leader in the boating industry with a global customer base. Although sales are strong, there's potential for improvement by better understanding the company's inventory. One of your employees suggests leveraging data analytics to analyze the company's database. Here are some key questions and concerns to address:

1. Visualization:

- Create visualizations to show the number of boats that are new (0) versus used (1), and how many have 1, 2, 3, or 4 engines.
- Visualize the number of boats manufactured over different decades (e.g., 1941-1950, 1951-1960, etc.).

2. Price Prediction Model:

- Develop a model to predict a boat's price using available variables in the dataset.
- Identify which variables are most significant in explaining the price.

3. Clustering Model:

Create a clustering model with four clusters using the following variables: a. Year b. Condition c. Length in Feet d. Beam in Feet e. Dry Weight f. Number of Engines g. Total Horsepower h. Price

4. Customer-Focused Analysis:

Answer key questions that customers typically ask to help the sales team communicate more effectively: a. If a customer wants a fairly new boat, which cluster should they consider, and what is the expected price range? b. For a customer with a \$200,000 budget, which cluster should they look at, and what are the characteristics of that cluster? c. If a customer desires a boat with a total length of 80 feet and 2000 horsepower, what would be the estimated cost, and which cluster would this boat fall into?

Column Information:

- Year: The year the boat was manufactured.
- Condition: The condition of the boat (new = 0, used = 1).
- Length_ft: The length of the boat in feet.
- Beam_ft: The width of the beam in feet.
- Dryweight: The weight of the boat on dry land.
- Numberengine: The number of engines the boat has.
- TotalHP: The total horsepower produced by the boat's engines.
- Price: The price of the boat.