Data Analysis Assignment

Business problem

Most American institutions (that are not necessarily the top 10-20) that provide undergraduate education face a challenge i.e. what kind of students they will make an offer for admission so that they can maintain a good performance in terms of number of students completing their courses in time. They also need to predict how the current batch of intake will perform. The universities cannot relax the entry criteria too much as that way the quality of education that they provide gets diluted. At the other hand, they have to make offers to the candidates who are not only having appropriate profile but are also most likely to accept the offers.

On the other side, the students have a challenge deciding which colleges they should apply i.e. the colleges that provide best performance at a minimal cost given their own profiles. The student profile is determined by not only the performance in examination such as SAT and ACT, but also other data points such as their ethnicity, immigration status, gender etc.

We will be interested in answering three main questions for an institute i.e.

(a) What will be a likely enrollment rate?
(b) What will be a likely graduation rate?
(c) Which are the most lucrative colleges for students in terms of pass rate and cost?

Perform End to end data preprocessing and analysis on American universities dataset:

Data Set:
https://drive.google.com/drive/folders/1iptxiIS2MJMzkN5zcQH1La3OmG32jhGK?usp=share_link

1. Data Preparation: Cleaning and Formatting.

2. Exploratory Data Analysis (EDA) and Visualization. Quantitative and qualitative analysis (Asking and Answering Questions).

Quantitative and qualitative analysis: Asking and Answering Questions.

1. Do universities with a high number of applications are the preferred ones by students? in other words, could the number of applications tell us that a university is one of the most preferred by students?

2. Do students prefer universities that have a high rate of admission? in other words, do students prefer a university where it is easier for them to be admitted?

3. Do students prefer public or private universities?

4. Do students prefer universities with low tuition and fees?

5. Do students prefer a university for its low on-campus cost of living?

6. Do students prefer universities from highly populated states?

7. Do students prefer a university because it belongs to a state with a high GDP per capita?

8. Do students prefer a university based on the possibility of a higher, additional academic degree in the same university?

4. Inferences and Conclusions.