RESEARCH & BUSINESS DEVELOPMENT CENTER

Good2Go Optimal Store Location Case Study

The Customer

Good2Go is a chain of convenience stores and gas stations that operates in multiple states. They have been in the business for over a decade and have a reputation for offering affordable gas prices and a variety of products to their customers. Good2Go currently has over 75 stores in operation and is looking to expand their business by opening new stores in strategic locations.

The Situation

Good2Go was faced with the challenge of identifying the best locations for new stores that would generate at least a certain number of gallons sold per year. They wanted to maximize profits by choosing locations that had high potential for success, which would be determined by a variety of factors, such as competition, proximity to highways, population density, and gas station visits.

The Solution

To help Good2Go solve their problem, a team of BYU-Idaho students was asked to identify features that could predict profitable store locations. The team utilized various tools and data sources, including Data Axle, MapBox, and Census data to gather relevant information on the market, competition, and consumer behavior.

Using this data, the team developed a model that could identify the optimal location (at the tract level) for new Good2Go stores. The team also created an interactive dashboard that displayed the results and allowed Good2Go staff to search locations they were interested in. The dashboard provided summaries of the main variables for each location on the map and highlighted the 3-5 most promising locations, as identified by the model.

Focus

- Created an interactive dashboard that displayed the target metrics and allowed Good2Go staff to search locations they were interested in.
- Dashboard contained interactive choropleth maps that displayed the optimal location (at the tract level) for new Good2Go stores.
- Dashboard provided summaries of the main variables for each location on the map.
- Highlighted and displayed the 3-5 most promising locations, as identified by the model.
- Analyzed average distance between competitors to identify areas with low competition.
- Evaluated total number of stores in a tract to determine areas with high competition.
- Evaluated daily traffic counts to find areas with high consumer traffic.

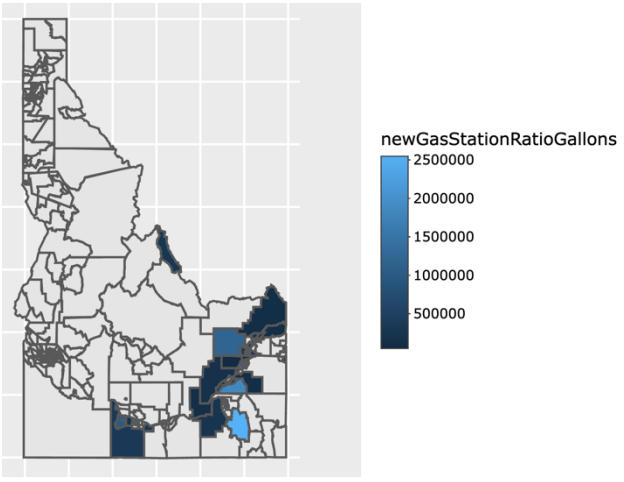
Identifying Profitable Tracts

The primary metric used to identify potentially profitable census tracts was the "New Gas Station Ratio Gallons." This metric was calculated by summing up the total yearly revenue of all gas stations in a tract, which was obtained by our client from Data Axle and included revenue and locations for competitor gas stations. The sum was then divided by the current number of gas stations in the tract, plus one. The consulting team built a conversion metric from revenue to gallons sold using Good2Go's internal reports, as Good2Go was interested in gallons sold instead of revenue. For clarity, the formula is:

$$New\ Gas\ Station\ Ratio\ Gallons = \frac{Total\ Revenue}{Number\ of\ Gas\ Stations\ + 1}$$

Interactive Maps

The team created interactive maps that display the ratio of gallons sold per gas station in a tract for the states the client was interested in. In the final report, hovering the cursor over a tract displays a tooltip with the following variables:



- New Gas Station Ratio Gallons (derived as described above)
- FIPS (unique identifier for Census Tracts)
- Population (population according to the 2020 American Census)
- Population Density (residents per square mile according to the 2020 American Census)
- Current Number of Gas Stations
- Total Market Revenue (Total gas station revenue in dollars according)

Top Tracts

The consulting team identified census tracts with the most potential for achieving the profitability level required by the client. These top tracts were displayed in a table that included their location, city, state, number of gas stations, population density, and the ratio of gallons sold per gas station. The final report also included interactive maps of each identified tract from the table. Blue dots on the maps represent points on roads, which contain observed and estimated counts of vehicles per day. Hovering over these points displays the AADT count. The red triangles on the maps represent gas stations in the tract.