

Yelp Me Out

Business Done Right

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Summary

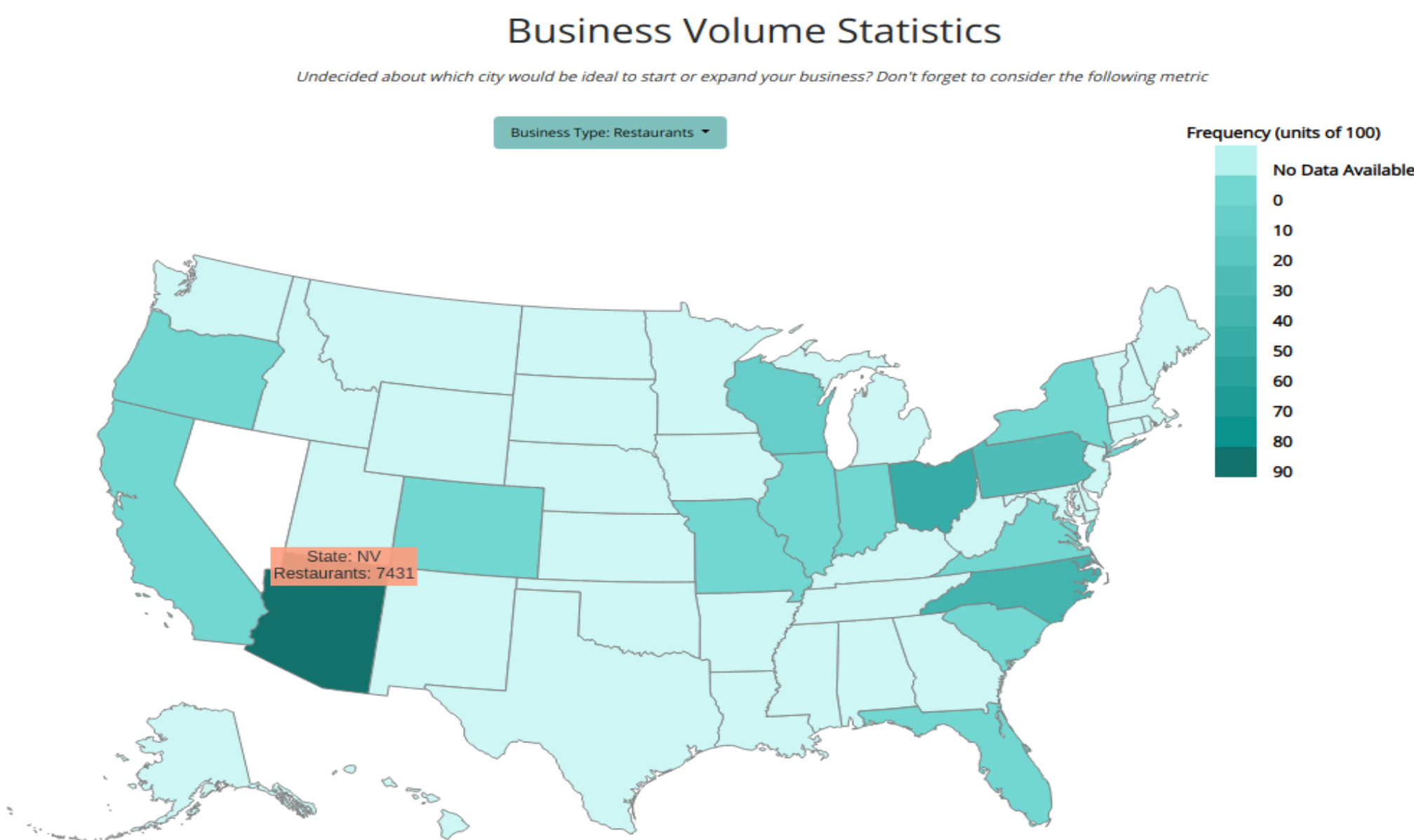
Every year a number of small and medium scale businesses shut down due to mismanagement, unprofitability and absense of ground knowledge. About **60% of new businesses fail** within the first three years of their operations. We used the rich Yelp dataset to provide businesses with qualitative data analytics and predictive tools to help them make better decisions much faster. Concise, collaborated and constructive metrics can enable established business-owners and aspiring entrepreneurs to grow their businesses exponentially. The dataset has about **6 million reviews** for about **190,000 businesses** in **10 metropolitan areas**.

Features

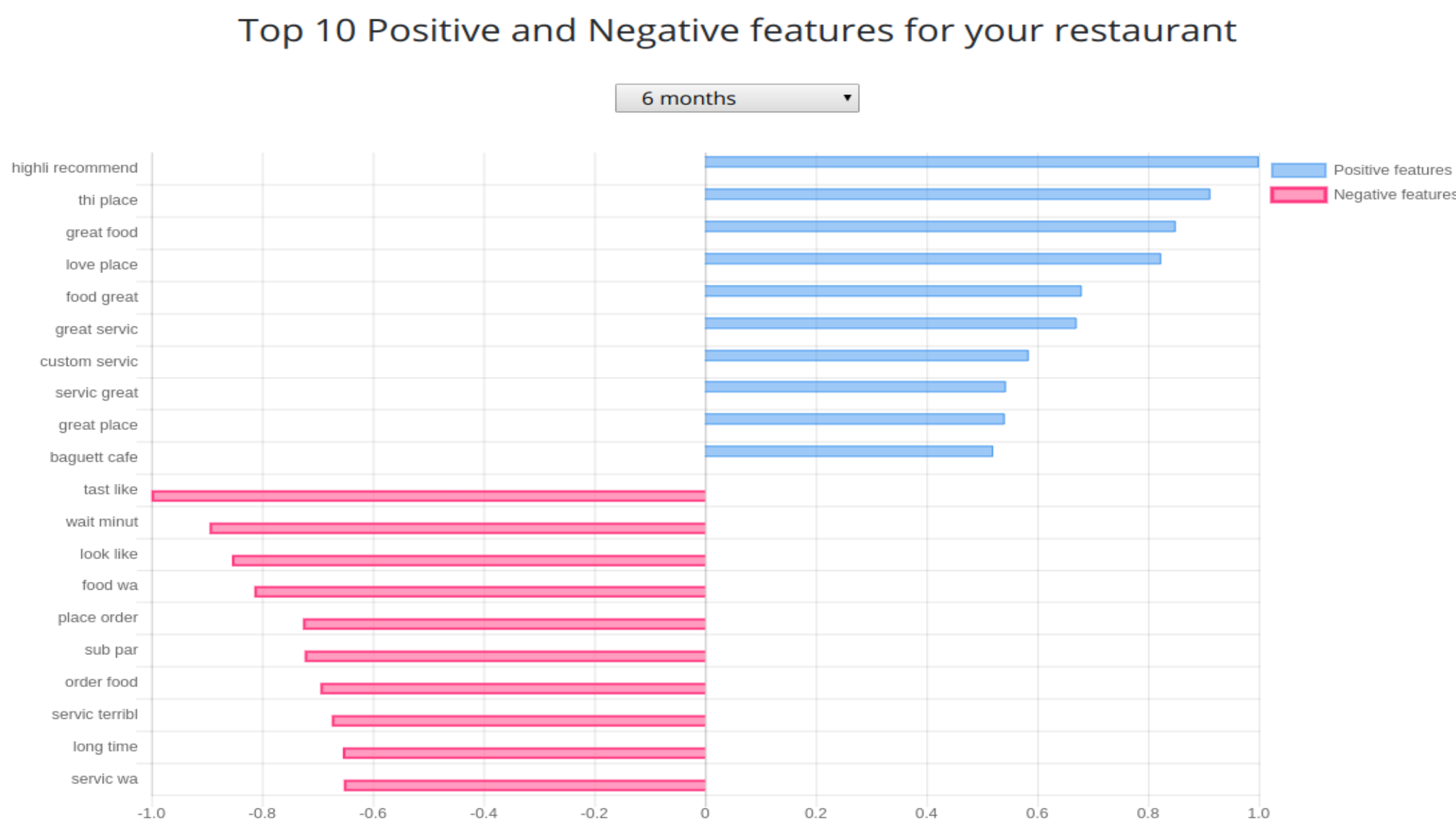
A wealth of comprehensible and qualitative visualizations have been provided to navigate merchants through their decision-making process. The tool enables them to quickly analyze what is lacking when compared with relatively better-doing businesses in the same genre. A few of our functionalities are:

- 1) This tool isn't just for an established business owner. A budding entrepreneur can gain insightful information on which business domain to explore and which city could be the best place to start.
- 2) Patterns in the change in ratings over time have been supplemented with popular opinions to help improve and maintain the service quality.
- 3) Based on an informal survey, logistic handling came out as an evergreen pain area for most merchants. We have provided a distribution of consumer traffic throughout the week to help with that.
- 4) Relative consumer volume round the clock has also been implemented to enable merchants to plan staffing needs, seating, inventory, etc. better.

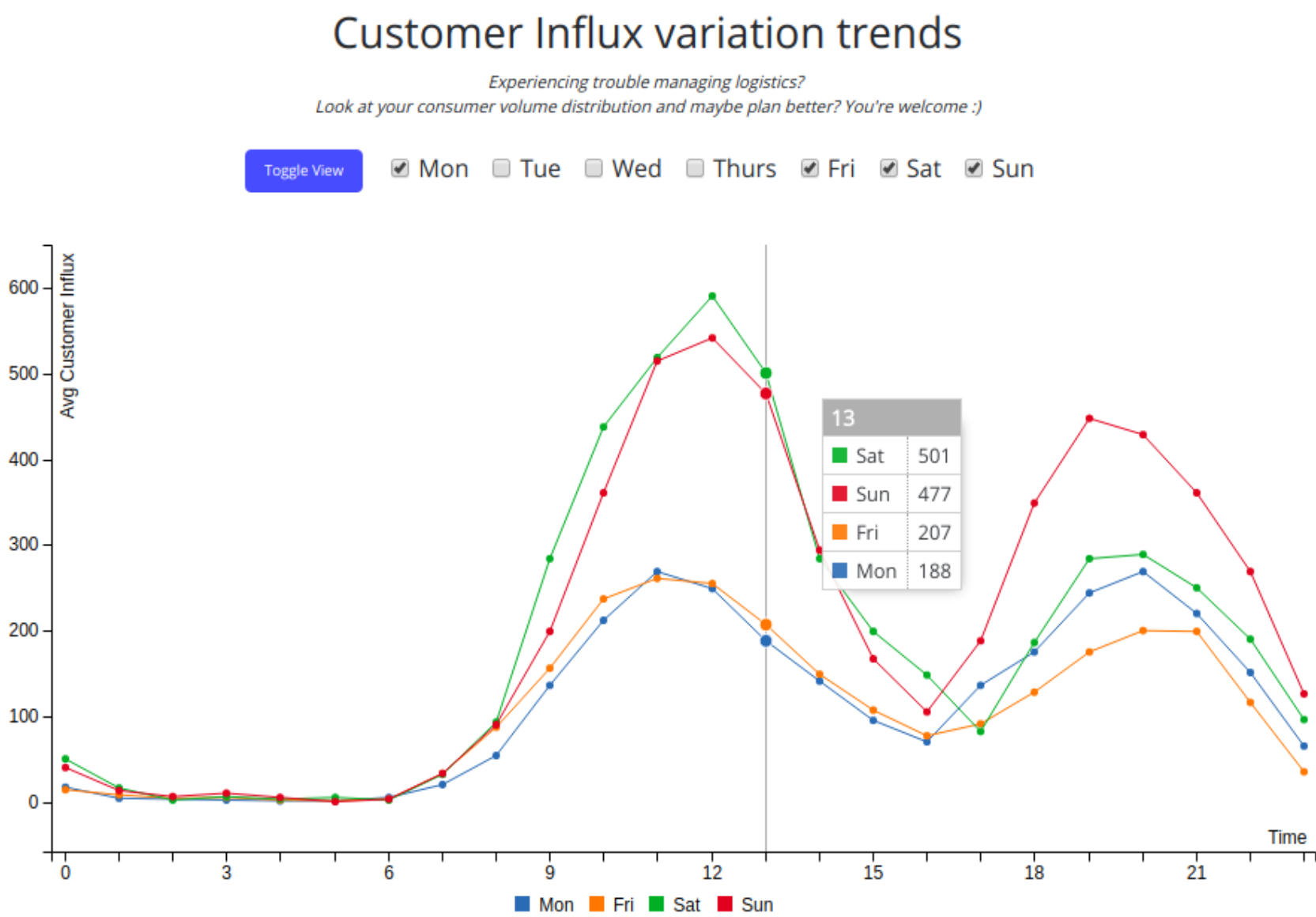
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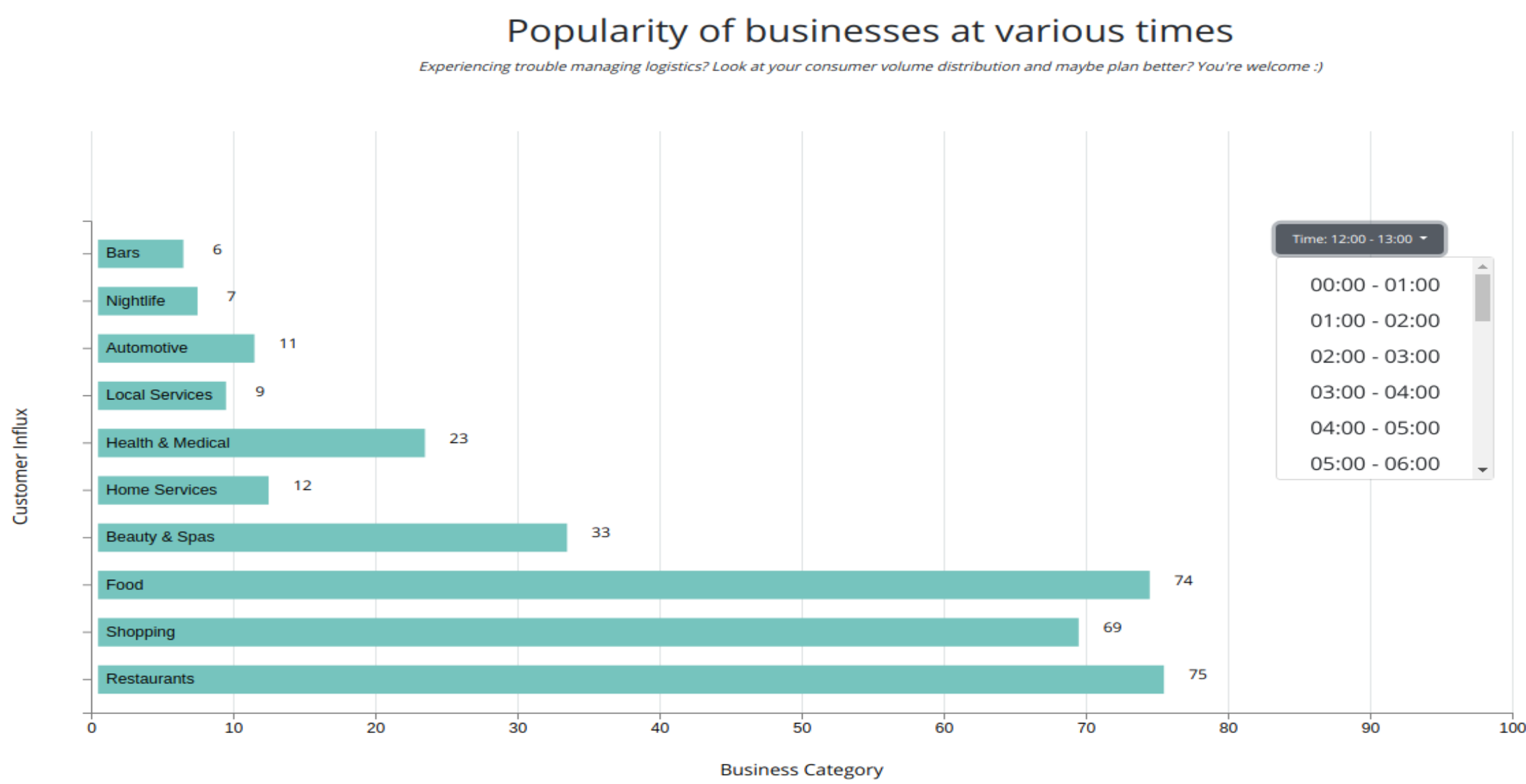
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Innovation

Most businesses lack the foresight and cumulative statistics to realise which features would attract more customers. So we sought to build a tool which could predict a rating given any combination of secondary attributes such as parking, ambience, wheelchair etc for any business genre. This could save business owners plenty of resources which would be otherwise spent in vain. Hence, it establishes a direct correlation between features and rating and can be used by owners to realise inclusion and exclusion of which features could enhance revenue and customer influx. After a careful evaluation of various algorithms, we chose Gradient Boosting Regressor as it outperformed others. The performance of the algorithms are detailed in the table.

Machine Learning Algorithm	RMSE
Gradient Boosting Regressor	0.55
Random Forest Regressor	0.59
SVM Regressor	0.67
Linear Regression	0.74

Experiments

In a subject study, we did a demo of the prototype to **15** (10 established business vendors and 5 budding entrepreneurs) candidates in Atlanta. Most of them were excited about the product and felt the metrics included in the application would enhance their business significantly. Reluctance was mostly observed from candidates who felt their business is too dynamic or too small and needs manual management. From the feedback, we realized that the tool can be personalized to suit every business owner's needs.

