

ABSTRACT

With the advancement in public transport and the growing needs towards going green, there always has been a shortcoming of end point connectivity. Various models require interdependence on some other human or some other factor like pricing or the availability.

Rental E-bikes (example of micro-mobility) are one of the solutions to this. The project itself may seem far-fetched with the security concerns and balancing out problems. The improvement in technology like internet connectivity lets us track real time and makes it possible to deploy the service without human intervention. The payment can be done through various online payment methods.

The dataset of interest is from VeoRide Inc - an e-scooter service provider in the UMD area. The data contains information about around 40,000 rides spread across two months - October 2019 and October 2020. Our goal was two-fold - first to analyze this data to generate insights on ride patterns and how this service supplements the existing on campus transportation network and second, to provide recommendations based on these insights on how to improve the service.

We planned to analyze how the rental system can augment the Public transportation and not only just increase the rental platform users but also decrease the public dependence on personal vehicles.

Our methodology involved finding out the hotspots for the start point, destinations as well as the routes. Next, we defined the UMD campus boundaries and mapped the geographical information present in the data to these boundaries to identify ride distributions within and outside the campus. Finally, we performed some additional analysis on variables like distance, ride duration, etc. to complement our findings.

The 2 most important factors which affect ridership are Distance and Availability. The most critical factor is the distance and indicates that people are not going to go out of way to look for an E-bike. Also, majority of the people have been travelling during late evening and night and thus more bike stations and availability should be ensured at these times of the day. The number of customers is very low on days that are comparatively cold or hot.