Literature Review

With their potential to serve as a solution to the challenges posed by traditional transport systems, micromobility options such as the e-bike and e-scooter have gained significant attention in recent years. The first introduction of a shared micromobility in 2017, in Washington D.C, sparked rapid growth within the industry seeing shared systems available in over 100 cities in the following year (Buning, Pham, & Chen, 2023). Their portability and ability to run on different facilities make them a viable option for solving several travel problems(Ma et al., 2021). It has been suggested that e-mobility options have the potential to replace anywhere from 45-75% of short distance vehicle trips, supported by a 2023 study looking at e-scooters as the vehicles to replace these short trips(Abouelela et al., 2023). The environmental benefits of micromobility have been found to include decreased dependence on fossil-fuel powered vehicles, reduced greenhouse gases, and improved air quality(Manirathinam et al., 2024) however, these benefits are also dependent on the nature of trips being replaced by micromobility. For example, the replacement of short car trips holds greater potential environmental benefits than replacing walking or cycling trips(Reck et al., 2022).

E-mobility vehicles are accepted for use in most Canadian provinces under varying restrictions, limiting their use on specific roads, paths, and lanes, use restrictions by age, license possession, and helmet requirements, depending on the province. The general classification of micromobility vehicles in Canada is based on their maximum assisted speed and power output, with a maximum speed ranging from 24 km/h for electric scooters to 32 km/h for e-bikes, and a maximum power output that does not exceed 500W(Electric Bike & Electric Scooter Laws & Regulations in Canada, 2024). Some of the factors influencing e-mobility adoption include the availability and accessibility of infrastructure, the perception of safety and convenience, the integration with existing transportation systems, and the presence of regulations and policies that support and encourage the use of e-mobility options(Abdelkareem et al., 2023). Thus in Canada, and particularly in BC where the adoption and integration of the options is relatively slow in comparison to other global markets(Oeschger et al., 2020), policy frameworks that support the safe operation of micromobility vehicles, including regulations related to rider behavior, speed limits, parking and charging infrastructure, and vehicle insurance safety requirements standards, are to essential be for developed the successful integration of e-mobility into urban centers(Avetisyan et al., 2022). By pooling local and global data on micromobility systems, this research project seeks to fill in the gaps in knowledge of the Canadian context of e-mobility, especially in the creation of policy frameworks to foster the adoption of micromobility and maximise its benefits on urban cities.

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