## Modeling the Frequency of Insurance Claims for Personal Mobility Vehicles: An Application of the Poisson Regression Model

The increasing popularity of personal mobility vehicles (PMVs), particularly electric scooters, has considerably altered the urban transportation landscape in recent years. These vehicles are favored for short commutes, aiding in the reduction of traffic congestion and greenhouse gas emissions. However, their growing usage has also led to a rise in accidents and related insurance claims, prompting concerns from regulators and insurers.

Accident rates involving PMVs have become a critical area of focus for insurance companies because electric scooters, like other PMVs, exhibit usage patterns and risks that differ significantly from traditional vehicles. This study aims to identify and quantify the factors influencing the accident rates of electric scooters, employing statistical models to enhance the accuracy and customization of insurance premiums.

The results of this study highlight the influence of cycling infrastructure on the safety of personal mobility vehicles (PMVs) in urban environments. This finding has relevant implications for both public policies and the insurance industry. For local administrations, expanding cycling infrastructure must be a priority in urban design, not only to improve safety, but also to encourage more sustainable modes of transport. From the point of view of the insurance industry, the results allow more competitive premiums to be established for users who circulate in areas with better cycling infrastructure, thus reflecting a lower risk of accidents.