

## The Effect of Socio-Economic Factors on Electric Vehicle Charging Behavior: An Investigation

**Authors :** Judith Mwakalonge, Geophrey Mbatta, Cuthbert Ruseruka, Gurcan Comert, Saidi Siuhi

**Abstract :** Recent advancements in technology have fostered the development of Electric Vehicles (EVs) that provides relief from transportation dependence on natural fossil fuels as sources of energy. It is estimated that more than 50% of petroleum is used for transportation, which accounts for 28% of annual energy use. Vehicles make up about 82% of all transportation energy use. It is also estimated that about 22% of global Carbon dioxide (CO<sub>2</sub>) emissions are produced by the transportation sector, therefore, it raises environmental concerns. Governments worldwide, including the United States, are investing in developing EVs to resolve the issues related to the use of natural fossil fuels, such as air pollution due to emissions. For instance, the Bipartisan Infrastructure Law (BIL) that was signed by President Biden on November 15th, 2021, sets aside about \$5 billion to be apportioned to all 50 states, the District of Columbia, and Puerto Rico for the development of EV chargers. These chargers should be placed in a way that maximizes their utility. This study aims at studying the charging behaviors of Electric Vehicle (EV) users to establish factors to be considered in the selection of charging locations. The study will focus on social-economic and land use data by studying the relationship between charging time and charging locations. Local factors affecting the charging time and the chargers' utility will be investigated.

**Keywords :** electric vehicles, EV charging stations, social economic factors, charging networks

**Conference Title :** ICTETM 2023 : International Conference on Traffic Engineering and Transportation Management

**Conference Location :** Tokyo, Japan

**Conference Dates :** October 09-10, 2023