

# A Study on Role of Machine Learning: Analysis of Factor Influencing Vehicle Carbon Emission

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**Abstract:** *It is essential to comprehend and reduce the variables impacting the transportation sector's increasing carbon emissions as these emissions play a major role in the global warming process. In this work, secondary data on vehicle carbon emissions is analyzed using machine learning to determine the major factors influencing emissions and evaluate their relative significance. Records on vehicle specs, driving habits, ambient conditions, and fuel kinds are examples of secondary data sources. Numerous machine learning models, such as regression analysis and feature significance techniques to rank variables according to their contribution to emissions levels, are used to investigate and forecast the impact of these elements. The results show that several variables have a significant effect on emission rates, including vehicle type, fuel economy, speed, and road conditions. The study also explores how these findings may be applied to the formulation of policies and the creation of focused emission reduction plans. This study adds to the expanding corpus of research on the use of machine learning in environmental sustainability and lays the groundwork for future investigations that may increase emission reduction efforts by utilizing real-time data and sophisticated modeling approaches.*

**Keywords:** machine learning