**ABSTRACT**

**AUTONOMOUS VEHICLES**

This study investigates the challenges and opportunities pertaining to transportation policies that may arise as a result of emerging autonomous vehicle (AV) technologies. It is a great contribution for the automotive industry towards innovation and economic growth. AV technologies can decrease the transportation cost and increase accessibility to low-income households and persons with mobility issues. The main focus is to keep the human being out of the vehicle control loop and to relieve them from the task of driving. This emerging technology also has far-reaching applications and implications beyond all current expectations. A major knowledge gap exists in AV technology with respect to routing behaviours. An indispensable part of a prospective AV development is communication over cars and infrastructure. Autonomous-vehicle technology provides a great opportunity to implement an efficient and intelligent routing system. AV’s are a subject of huge interest both in the UK and internationally as companies and cities try to understand what the future holds when these vehicles are widely available. The prime requisite of self driving vehicles are SENSORS(for acquiring traffic information of vehicle surrounding),COMPUTERS (for processing sensor information and sending warning control signals) and ACTUATORS(responsible for lateral and longitudinal control).This paper provides a comprehensive review of the relevant literature and explores a broad spectrum of issues from safety to machine ethics. To this end, we propose a conceptual navigation model based on a fleet of AVs that are centrally dispatched over a network seeking system optimization. This study contributes to the literature on two fronts: (i) it attempts to shed light on future opportunities as well as possible hurdles associated with AV technology; and (ii) it conceptualizes a navigation model for the AV which leads to highly efficient traffic circulations.