Adaptations in Driving Efficiency with Electric Vehicles

The results of previous MINI E field trials provided initial indications that driving electric vehicles (EV) leads to adaptations in driving behavior and might increase driving efficiency. This paper presents the methodologies to measure changes in driver characteristics by logging velocity, acceleration, and cruising range, on smartphones. In this experiment, 25 MINI E were provided as electric test vehicles for a diversified spectrum of subjects consisting of private and corporate customers. The field trial included both longitudinal and transverse components in order to assess long-term and situation specific changes.

Participants operated both combustive and electric vehicles. Driving dynamics data from these vehicles was collected over a six month period time. Additionally, these same participants were required to perform a 2 hour drive, which served as a comparison drive, three times over the period of EV usage. The frequency of intermittent usage of combustion vehicles was captured by logbooks.