Abstract:

Throughout its lifetime, the interest in electric vehicles has waxed and waned several times, mainly because of environmental thoughtfulness or (politically based) oil concerns. Since the second decade of the 21st century, electric vehicles have reappeared in the automotive landscape. Several car manufacturers broadened their market scope by adding electric vehicles to their portfolio. Moreover, in order to lower the environmental impact of the transportation sector, the European Commission has set some ambitious targets with regards to CO2 emissions. An increased number of EVs on the road could well affect the impact of transport on the environment, as these vehicles are less polluting compared to the conventional alternatives. In this dissertation, different economic aspects of electric vehicles are studied. First, the consumers’ attitudes towards electric vehicles are questioned through a large scale survey (n = 1,196). The focus lies on battery electric vehicles, since these cars face a limited driving range and demand a mentality change by the consumer. Price is found to be a very important factor in the purchase decision for a new vehicle, which entails a main obstacle for electric vehicles. But are electric vehicles that much more expensive compared to conventional cars? A total cost of ownership (TCO) analysis is elaborated, which takes into account all costs that occur during the expected vehicle’s ownership, including depreciation. Next, the market potential for electric vehicles in Flanders is forecasted using a discrete choice experiment (n = 1,196). A choice-based conjoint model is designed and scenarios for 2020 and 2030 are built. Finally, in order to incorporate the opinions of all relevant stakeholders with different interests in the transition towards electromobility, a multi-actor multi-criteria analysis (MAMCA) is conducted.