



Urban mobility: emerging costs in transport selection

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Abstract: Urban mobility decisions involve multidimensional aspects like time, money and environmental and social impacts. These dimensions do not lead to the existence of a dominant means of transport for all criteria together. In modern cities, roads foment the private transport, where the particular car is the central instrument of the mobility system, besides the problems that this situation generates in environmental, social and economic issues (Aliano, Blanco, Díaz Almassio, Keesler, & Sosa, 2019). Smart and sustainable mobility emerge like a solution offering efficient, clean and equality transportation for people, goods and data (Prada, Romera, Añez, & Sánchez, 2015). Considering the previous problem and the benefits that industry 4.0 offers from technology, a comprehensive analysis of the urban sustainable mobility is necessary.

In this context, it is proposed to carry out a comparative economic analysis of personal urban conveyance, considering as mobility alternatives: a) on foot, b) by pedal bicycle, c) by electric skateboard, d) by motorcycle, e) by fuel car, f) by electric car. This paper presents a qualitative approach of exploratory scope based on a case study (Yin, 1994), in which a typical subject who lives in the city of Bahía Blanca (Argentina) and does not use shared mobility systems is analyzed. The collection of information is based on participant observation and interviews with a sustainable mobility entrepreneur as primary sources, and technical information from transportation companies as a secondary source.

The economic analysis developed, based on marginal cost model, includes not only explicit costs that are generally considered in the mobility decision, but also implicit costs associate with travel time and opportunity cost of invested capital. Results of this research are complemented with a sensitivity analysis in order to determinate indifference distances between transport alternatives and a qualitative evaluation of their environmental impacts.

Keywords: smart and sustainable mobility, urban mobility costs, distance of indifference, electric vehicles.

References

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