

Behavioral Inattention and Transport Users' Choices: Theoretical and Empirical Analyses

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Socio-economic and scientific context

The mobility of people and goods is responsible for about a quarter of global GHG emissions and almost 30% of final energy demand (IEA 2009, 2020). Although technological advances and infrastructure improvements are able to significantly reduce the impact of vehicle emissions, the growth of individual mobility, a product of human behavior, remains a major challenge. Consequently, acting on behavior is complementary to the pure search for technological solutions (Sussman et al. 2020). However, behaviors, especially mobility behaviors, are potentially the product of individual rationality, cognitive biases and heterogeneous social preferences, a combination that can lead to significant deviations from actual predictive behaviors based solely on representations of rational choice standard in economics. As a result, behavioral economics has had a significant impact on research on user choice of transport (McFadden 2007), notably by highlighting the impact of social norms, emotions, or risk perception as important determinants of modal choice (see for example Moody & Zhao 2019). However, one explanation that has received little attention in this field is behavioral inattention (Gabaix 2019).

Question & Hypotheses

In standard economic theory, the rational individual makes decisions using all available information. However, if the attention available to him is a limited resource, this same individual will use heuristics that will allow him to reduce the complexity of the information that can be mobilized (DellaVigna 2009). Behavioural inattention consists of the individual neglecting certain information or dimensions relating to his choice and, on the contrary, favouring others, in order to preserve his attention. Thus, different characteristics can be neglected by the individual during his choice: as an example, in the case of mobility by private car, the individual can focus on the fuel cost of the kilometers he produces and consumes and neglect the fixed cost of acquiring his vehicle (Ho & Reza 2017).

The main question posed by the thesis is the extent to which behavioral inattention can impact individual transportation choices through the three key dimensions of these choices, which are their monetary cost, their temporal cost, and the accident risk involved.

Main steps of the thesis

A first step of the thesis will be to make a clear distinction between the different types of inattention that can affect individual transport choices, by determining in particular the characteristics of the microeconomic choice on which inattention can be focused, based on the microeconomic modelling specific to transport economics and in particular the notion of generalized transport cost (Jara Diaz 2007). Beyond the generalized transport cost, other attributes of mobility will be taken into account: comfort, reliability, and accident risks in particular. In a second step, the impact of behavioral inattention on transport choices will be assessed by focusing on three determinants, each of which will be studied in isolation: the monetary cost of travel, particularly through transport pricing, possible travel times and their perception, and finally the risks involved in the various possible choices, particularly in terms of accidentology. These three dimensions are at the heart of public mobility policies, which are characterized by the search for accessibility to transport for the greatest number of people

(social pricing and territorial coverage), by the improvement of user welfare (time savings), and by the improvement of travel safety levels.

Methodology and empirical strategy

The thesis will be conducted using several types of tools:

- (a) Theoretical modeling, which will draw on the recent framework proposed in behavioral economics to assess the microeconomic impact of exogenous variations in monetary costs, speeds, and accidentology on the perception of these characteristics by a user who is more or less inattentive to each of these characteristics.
- (b) Economic experiments in the laboratory and field data, in order to empirically measure these inattention parameters and their determinants.

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