Abstract

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Incorporating the explicit role of psychological factors on mode choice: a hybrid mode choice model by using data from an innovative psychometric survey.

Mode choice modelling has been shifting from a classical analysis based upon level of service, cost and socioeconomic explanatory variables, to one resting on individual factors which might also be affecting the decision process. The aim of this work is to study the effect of incorporating explicitly psychological factors into the individual decision making process, estimating a hybrid discrete choice model. These psychological factors complemented the level of service and cost attributes. Data set comes from an ad hoc survey designed to gather information regarding psychological aspects, such as attitudinal and affective factors, and habit. The survey was based on the framework proposed by Triandis. According to this theory, attitudinal, affective and social factors generate an intention, which is mediated by habit and contextual conditions to generate the observed conduct. The contextual conditions correspond to modes level of service and costs, socioeconomic characteristics of the individual, and trips constraints. Respondents corresponded to university staff, academic and clerical. Modes and socioeconomic attributes, as well as psychological ones, through a latent variables approach, were considered in the estimations. In spite of the relative small sample size (231 records), results related to a full model are quite promising when compared with a simpler model. The consideration of the full set of information through the hybrid model allowed for the disentangling of effects, showing more evidently the role of modes and socioeconomics attributes and psychological variables on mode choice.