

The relationship between length of stay and transportation mode in the tourism sector: a discrete-continuous analysis of Swiss data.

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Abstract:

The transportation system plays a key role in our daily life because it allows both tourists and citizens to reach their destinations. Generally, the transportation mode is seen as a way to carrying people from a point A to a point B. When transportation is considered from a touristic prospect, instead it refers to providing the link between the origin and the holiday destination of tourists. The travel and tourist experience start and end with transportation, for instance, it is impossible to consider tourism without transportation. Hence, the transport services not only affect the destination's choice but also the entire decisional process, such as length of stay, type of accommodation, destination activities and so on. In tourism literature, the duration of the journey and the transportation mode are generally chosen as the main explanatory variables to predict the tourism demand. Whenever, one of the two variables is the dependent variable and the other one is the explanatory variable, we face the classical problem of endogeneity. Hence, researchers need to seek the suitable instruments in order to solve this econometric problem. Therefore, we decide to apply the discrete continuous choice model, which allows to consistently estimate the link among the two variables and how they influence the tourism demand.

The implementation of the discrete continuous choice models allows modelling jointly the discrete and the continuous consumer choices from the same utility maximisation problem. Hanemann (1984) and Dubin and McFadden (1994) estimate the discrete continuous choice in two steps, as do Bernand, Bolduc and Belanger (1996). Mannering and Winston (1985) and de Jong (1990) analyse the simultaneous determination of private car ownership and private car use.

Therefore, our analysis follows a two-stage design: in the first part a model for the discrete choice among alternative means of transport is estimated. The second part is a model of the number of days spent at destination (the continuous variable) in which the results from the first stage are used in order to correct for the simultaneity of the choice of transportation mode. A tourist is supposed to choose an option among J for getting to his/her holiday destination.

The choices are either private or public transportation mode: the alternative private transport considers car, caravan and camper, whereas the public transport includes bus, train, airplane and taxi. For instance, a tourist i choose the alternative j as well as how much time to spend at the destination.

The present study builds on a recent Household Budget survey conducted by the Federal Statistical Office (FSO) in 2010. The data collection comprises the number of trips, the character of the travel and the profile of the traveller. In addition, it contains day trips (i.e. day trips are over 3 hours), overnight travels, and distinguishes between private and business trips. Our study considers 1198 private trips from 1 day up to

30 days; the average of days spent at destination is around 7.5 days. The vast majority of respondents are women (56%) and the average age is around 48 years old. The biggest share (more than 70%) of Swiss tourists live in agglomeration area, instead the rest of the responders are located between rural area and isolated city. Moreover, our database contains information about the choice of the means of transport. The 76% choose to get their destination by private transportation, which includes car, caravan and camper whereas the 23% decides for a public service such as airplane, taxi, bus and train. Most represented holiday destination is holiday at the mountain (32%), lake (26%), visiting city (25%), and holiday at the seaside (17%).

Our preliminary results confirm, as we expected, that the discrete choice model predicts lower probability toward public transport for those who live both in periphery and rural area than who reside in the city centre. On the other hand, the public transportation seems to be preferable when tourists plan on travelling to destinations located at the seaside (reference category: city centre). As for the estimated type of holiday's coefficient, an abroad destination appears to increase the probability of selecting public transport as the way to get to holiday places.

Explanatory variables in the conditional time at destination equation are gender, expenditure, type of accommodation and from the discrete choice equation the number of participants. The duration of the journey decreases when tourists intend to meet friends or family. In contrast, the number of days is positively influenced by those tourists who choose among accommodations that might be less costly than hotel and luxury resort such as hostel, b&b, camping and so on.

The number of travellers is considered both in the discrete and continuous equation. The reason is that the number of people might affect simultaneously the decision between private and public transport and the time at holiday place. According to the results, the model shows that an increase of number of voyagers induces the choice of private transport as the way to reach the destination. This result might be driven by the fact that the marginal cost per an extra person for the private transportation is null, whereas for the public transportation is positive. By contrast, in the continuous model this increase has a negative effect on the number of days.

The study aimed at shedding light on the profile of Swiss travelling tourists in Switzerland. So far, few studies take into account simultaneously the choice between transport and time. Therefore, our approach may be helpful to better understand the intentions of selecting between private and public transport and how much time spend on holiday.