“For me it is always like half an hour”: Exploring the acceptable travel time concept in the US and European contexts

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ABSTRACT

Milakis et al. (2015b) explored the acceptable travel time concept as a possible factor in the travel and destination decision-making process. These researchers employed both theory and methods triangulation to assess the validity of this concept. Results from interviews with 20 subjects in Berkeley, CA supported the acceptable travel time concept. In this paper, the US study is replicated in Europe (Delft, The Netherlands) to further explore the validity of the acceptable travel time concept, compare results between Delft and Berkeley, and to identify possible factors influencing the acceptable travel time. Results of this study offer support for the validity of the acceptable travel time concept. The subjects in Delft appeared to be less satisfied with longer commute times than the subjects in Berkeley. Urban, transport as well as sociocultural factors might explain this variation in acceptable travel times.

1. Introduction

In 2015, the concept of acceptable travel time was published in Milakis et al. (2015b). This concept suggested that people likely consider an acceptable travel time in their travel and destination decision-making process. It was assumed that acceptable travel time is a behavioural threshold defined by utilitarian processes (i.e. intrinsic and derived utility, see Fig. 1). Intrinsic utility reflects travel-related benefits (or disbenefits). Derived utility reflects the activity-related benefits at the destination of a trip. According to the acceptable travel time concept the trip timeline can be divided into three periods: (a) the growth period, where total utility increases, because both intrinsic and derived utility increase as well, (b) the tolerance period where total utility still increases, but at a slower rate until it reaches a maximum level (acceptable travel time). In the tolerance period intrinsic utility decreases and derived utility increases but at a slower rate compared to the growth period, and (c) the decay period, where total utility decreases because intrinsic utility increases at a higher rate and derived utility decreases at even lower rate.

Milakis et al. (2015b) employed both theory and methods triangulation to assess the validity of this concept. First, the concept was connected to other established theoretical constructs in transport and decision-making, i.e. travel time budget (Zahavi and Ryan, 1980; Zahavi and Talvitie, 1980), ideal travel time (Hupkes, 1982; Mokhtarian and Salomon, 2001), satisficing (Simon, 1955, 1956) and consideration sets (Wright and Barbour, 1977). The theory of constant travel time budgets suggest that at the aggregate level, for example all people in a state or country, have a stable travel time budget, generally on average about 60–75 min per person per day (e.g. Mokhtarian and Chen, 2004). The idea of the ideal travel time explains that there is an optimum travel time that includes both the intrinsic positive utility of travel (travel for the fun of it, it provides a transition between activities such as home and work – see Redmond and Mokhtarian, 2001; Jain and Lyons, 2008) and the derived utility (due to being able to participate in activities. The concept of satisficing (Simon, 1955, 1956) explains that individuals do not strive for maximizing their choice benefit from but stop searching for alternatives once that is good enough. The concept of the consideration set (Wright and Barbour, 1977) tells that people make decisions in two stages. They first select the consideration set, a limited set of alternatives, and next they choose one of the options in that set of alternatives. Milakis et al. (2015b) discuss these concepts in more detail. Second, a mixed method approach was applied to explore acceptable commute time based on interviews with 20 subjects in the case of Berkeley, CA.

In this paper, the original study of Berkeley, CA is replicated in Delft, The Netherlands. The new study offers (a) further exploration of the validity of the acceptable travel time concept through data triangulation, (b) comparison of results between Delft and Berkeley to gain more insights into this theoretical concept, and (c) enrichment of the discussion...
on acceptable travel times by providing a conceptual framework for possible factors influencing it, based on the findings from both cities, and our analytical thinking. The replication logic is used in qualitative research to explore theoretical validity (or even build theory through different case studies, see Eisenhardt and Graebner, 2007) as well as generalizability of a concept (Johnson, 1997). According to the replication logic, support for a theory grows with the times this theory is replicated with different people, in different places and times (Johnson, 1997). This qualitative study applies the replication logic to further explore the theoretical validity and generalizability of the acceptable travel time concept by interviewing different people, in different places, at different times. Due to this logic we interviewed people and did not send a questionnaire to a larger number. We nevertheless see a larger quantitative study as a useful next step.

In the following sections, we present the research design (section 2), results for both satisfaction with hypothetical commute times and identification of acceptable travel times (section 3) and finally the conclusions about the validity of the concept, the differences in acceptable travel time between Berkeley and Delft, a conceptual framework for factors influencing acceptable travel time and directions for future research (section 4).

2. Research design

A mixed method approach with concurrent triangulation was employed to explore acceptable commute time in Berkeley, CA and Delft, The Netherlands (for more details about the methodology see Milakis et al., 2015b). This method combines both quantitative and qualitative data, thus enhancing the validity of the results, while allowing to deal with complex real world phenomena, such as travel (Robson, 2011). Data were collected through semi-structured in-depth interviews that involved both open and close-ended questions (see Fig. 2). The subjects were asked to respond first on a 5-point unipolar scale about their satisfaction with their actual commute time and with a range of hypothetical times and then to elaborate upon their choice. Subjective well-being measures, such as overall satisfaction with life, have been used as proxy for utility (Stutzer and Frey, 2008; see also De Vos et al., 2013 for a review on subjective well-being and travel). Thus, in this study, we expected the question about commuting satisfaction to offer evidence about variation of intrinsic utility with travel time. The subjects were also asked to identify and then describe, if possible, what acceptable travel time means to them. Information about participants’ travel mode and socio-demographic characteristics was also collected. We started discussion with all subjects asking them to describe the most important commuting problems in their area, aiming to become familiar with their language and respond accordingly. All interviews lasted between 30 and 60 min and conducted during August 2013 in Berkeley, CA and May-June 2014 in Delft, The Netherlands.

A stratified, based on the commuting mode (car, public transport, bicycle, walking), random sample of 32 subjects in total (16 in each case study, four subjects for each of the four commuting modes included in each case study) was recruited. The reason for stratifying our sample based on equal number of subjects for each commuting mode was that important variation among travel modes usage existed in both case studies, which could lead to oversampling of subjects using specific modes (e.g. car over walking). Four car-poolers that were interviewed in the Berkeley study were excluded from the current analysis, because we did not manage to recruit a respective sample of car-poolers in the Delft case. The subjects were invited in both areas through local newspapers, local news website, social media and flyers offering a 20$ gift card ($15 in the case of Delft) as an incentive. The subjects in both surveys were relatively younger and more highly educated in comparison to the general population in the two cities. Males were oversampled in Berkeley, CA while more women participated in the sample in Delft, The Netherlands, compared to the general population. Given the exploratory nature of this study we think that these differences between the sample and the population are not a problem (see Onwuegbuzie and Collins, 2007).

The analysis of close-ended questions focused on the relationship between positive and negative satisfaction for a range of hypothetical commute times and on the average acceptable travel time per case study and per travel mode. Due to the small, non-normal sample, Mann–Whitney U test was applied to identify possible statistical significant differences of ideal and acceptable commute times between Berkeley and Delft. Content analysis of the open-ended questions about a range of

![Fig. 1. The variation of intrinsic, derived and total utility with travel time, and the three main periods of a one-way trip (growth, tolerance, decay) in terms of total utility changes according to the acceptable travel time concept (X-axis: Time – T; Y-axis: Utility – U). Source: Milakis et al., 2015a.](image1)

![Fig. 2. The interview questions (IQ).](image2)
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