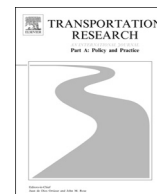


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# Transportation Research Part A

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## Do people travel with their preferred travel mode? Analysing the extent of travel mode dissonance and its effect on travel satisfaction



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### ABSTRACT

Numerous studies have indicated that travel mode choice is affected by travel-related attitudes. A positive stance towards a certain travel mode increases the probability that people will choose this mode for a particular trip. However, not a lot of studies have analysed whether people actually choose their preferred travel mode. In this paper we will look at whether respondents with a preference for car use, public transport use, cycling and walking will actually use these modes. Furthermore, we also analyse whether respondents who use their preferred travel mode (i.e., consonant travellers) are more satisfied with their trips compared to respondents travelling with a non-preferred travel mode (i.e., dissonant travellers). Results from this study, analysing leisure trips of 1656 respondents from the city of Ghent (Belgium), indicate that about half of the respondents chooses a non-preferred travel mode and that dissonant travellers can be mainly found within public transport users and least within cyclists, partly due to relatively low levels of public transport attitudes and high levels of cycling attitudes. Furthermore, travel mode dissonance seems to have an important impact on travel satisfaction. Consonant travellers have above average travel satisfaction levels, independent of the used travel mode, while dissonant travellers (except dissonant pedestrians) have below average travel satisfaction levels. This suggests that using a preferred travel mode has at least an equally important impact on travel satisfaction than the chosen travel mode itself.

### 1. Introduction

Since attitudes are generally thought to play an important role in people's behaviour, numerous travel behaviour studies have incorporated attitudes into their analysis.<sup>1</sup> Although some of them date back to the 1970s (e.g., Dobson et al., 1978; Tardiff, 1977), most of these studies are more recent and are often based on the theory of planned behaviour (Ajzen, 1991). According to this theory, attitudes are an important variable explaining people's intention to perform a given behaviour. Since the 1990s a large amount of studies have therefore tried to explain travel behaviour - and travel mode choice in particular - with the help of travel-related attitudes (e.g., Bagley and Mokhtarian, 2002; Bamberg et al., 2003; Cao et al., 2009; Handy et al., 2005; Kitamura et al., 1997). Besides rather strong effects from mode-specific attitudes on the frequency of using that mode (e.g., Beirão and Cabral, 2007; Heinen et al., 2011; Kroesen et al., 2017; Molin et al., 2016), also other types of travel-related attitudes can affect travel behaviour. Studies

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<sup>1</sup> An attitude can be defined as the degree of a favourable or unfavourable evaluation or appraisal of a certain object, person or behaviour (definition based on Ajzen, 1991; Eagly and Chaiken, 1993; Gärling et al., 1998; Van Acker et al., 2010). In this study, a mode-specific attitude can be described as the degree of positive/negative appraisal of the use of a certain travel mode, while a travel mode preference refers to a greater liking for a certain mode - or certain modes - over one or more other modes.

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have shown that positive attitudes towards the environment discourage car use (Anable, 2005), while people with a positive stance towards travel itself (e.g., people valuing travel time) are mostly engaged in trips with above average trip duration and distance (De Vos and Witlox, 2016). Recent studies also show that people with a positive stance towards waiting frequently walk, cycle or use public transport (Mishra et al., 2015), while positive attitudes towards multitasking seem to result in a higher value of travel time (Ettema and Verschuren, 2007), an increased chance of train use and a decreased propensity of using the car or local public transport (i.e., bus/subway) (Malokin et al., 2015). Some studies also claim that these travel-related attitudes influence travel behaviour indirectly, through the residential location choice. People might try to select themselves in neighbourhoods facilitating the use of their preferred travel mode (e.g., Cao et al., 2009; Handy et al., 2005; Schwanen and Mokhtarian, 2005). Some studies have also indicated that travel-related attitudes and mode choice are mutually dependent on each other and that attitudes both affect, and are affected by, choices (Dobson et al., 1978; Golob, 2001; Kroesen et al., 2017; Tardiff, 1977).

However, attitudes might not always predict behaviour. Such a discrepancy between attitudes and behaviour (often referred to as a value-action gap (e.g., Blake, 1999; Kollmuss and Agyeman, 2002)) can be explained by the presence of subjective norms (perceived social pressure to engage or not engage in the behaviour) and perceived behavioural control (an individual's perceived ease or difficulty to perform a certain behaviour) (Ajzen, 1991), or by a lack of certain skills and the presence of certain barriers (de Vries et al., 1988). In travel behaviour studies, the built environment is often seen as an important potential barrier in the choice of a certain travel mode. People living in a suburban-style neighbourhood, for instance, might be forced to use motorised travel modes as destinations might be outside walking and cycling distance (e.g., Cervero and Kockelman, 1997; Ewing and Cervero, 2010). Furthermore, due to the repetitive and stable character of certain trips (especially commute trips) it is possible that travel mode choice has become habitual and is no longer based on attitudes and intentions, but mainly on past behaviour (Aarts et al., 1998; Bamberg et al., 2003; Gärling and Axhausen, 2003; Verplanken et al., 1997). A dissonance between attitudes and behaviour receiving a considerable amount of attention in travel behaviour studies is what is referred to as residential dissonance. Residential dissonance occurs when people choose to live in a certain neighbourhood which does not match with their travel and residential preferences (possibly caused by budgetary constraints or varying preferences within households). Since the residential location does not encourage the use of the preferred travel mode, dissonant residents are – to a certain extent – forced to travel with non-preferred travel modes (De Vos et al., 2012; Kamruzzaman et al., 2013; Schwanen and Mokhtarian, 2005), resulting in trips being perceived relatively negative (De Vos et al., 2016). Although some of the numerous travel behaviour studies focussing on attitudes and mode choice have indicated that travel attitudes and travel mode choice are not always congruent (e.g., Molin et al., 2016), a possible dissonance between travel mode preference and travel mode choice has not yet been analysed thoroughly.

According to the cognitive dissonance theory of Festinger (1957), a dissonance between attitudes and behaviour can result in feelings of discomfort, or dissatisfaction. However, such an effect of dissonance on satisfaction levels has not yet been clearly analysed in travel behaviour studies. Although over the past decade numerous studies have indicated that travel satisfaction (i.e., experienced emotions during – and cognitive evaluations of – trips) is greatly affected by the chosen travel mode (e.g., De Vos et al., 2016; Legrain et al., 2015; Morris and Guerra, 2015; Páez and Whalen, 2010; St-Louis et al., 2014), only a limited amount of studies have also looked at possible effects of travel mode attitudes/preferences on travel satisfaction levels. A positive attitude towards a certain mode seems to have a positive effect on travel satisfaction when using that mode (De Vos et al., 2016; St-Louis et al., 2014; Ye and Titheridge, 2017).<sup>2</sup> This seems to suggest that when people travel with their preferred travel mode, travel satisfaction levels will be higher than when people (are forced to) travel with a non-preferred travel mode.

Since a potential dissonance between travel mode preference and travel mode choice – and its possible effect on travel satisfaction – has not been analysed thoroughly in previous studies, the analysis of these relationships will be the focus of this paper. In this study – based on leisure trips of 1656 residents of the city of Ghent (Belgium) – we will analyse (i) the relationship between mode-specific attitudes and the use of that mode, (ii) to which extent respondents use their preferred travel mode, based on a comparison of mode-specific attitudes towards four different travel modes, and (iii) whether respondents travelling with their preferred travel mode (i.e., consonant travellers) have higher levels of travel satisfaction compared to respondents using a non-preferred travel mode (i.e., dissonant travellers). Doing so, we want to create new insights into the links between attitudes, mode choice and travel satisfaction. This paper is organised as follows. Section 2 discusses possible causes and outcomes of travel mode dissonance. Section 3 explains the used data and methods, while main results are provided in Section 4. Discussion and conclusion are provided in Section 5.

## 2. Travel mode dissonance

### 2.1. Causes of travel mode dissonance

There can be many reasons for a dissonance between travel mode preference and travel mode choice. In this paper we distinguish

<sup>2</sup> It should be noted that travel-related attitudes might also affect travel satisfaction directly, independent from the chosen travel mode. De Vos and Witlox (2016) and Ye and Titheridge (2017), for instance, indicate that people with a positive stance towards travel in general (e.g., people valuing travel time) have higher levels of travel satisfaction compared to people disliking travel (e.g., people finding travel time wasted time), and this for all travel modes. De Vos et al. (2016) and Ye and Titheridge (2017) also found that a positive stance towards a certain travel mode can also positively affect travel satisfaction when using another mode (e.g., a positive effect of pro public transport on satisfaction with walking trips), potentially caused by correlated mode-specific attitudes (e.g., people liking both public transport and walking). In this paper, we will not take into account this possible direct effect of travel-related attitudes on travel satisfaction.

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