

Does the previous residential neighbourhood affect travel behaviour of recently moved residents?

1. Introduction

A numerous amount of studies have indicated that the residential neighbourhood has an important impact on people's travel behaviour. People living in compact, mixed-use areas with good public transport services often walk, cycle or use public transport, while people living in low-density, single-use environments with limited access to public transport use the car for most of their trips (for an overview, see Ewing and Cervero, 2010). However, it is possible that the effect of the residential neighbourhood on travel behaviour is influenced by travel preferences and attitudes. People might try to select themselves in neighbourhoods facilitating the use of their preferred travel mode (e.g., De Vos et al., 2012; Handy et al., 2005; Schwanen and Mokhtarian, 2005). However, some studies also argue that the choice of where to live is mostly based on reasons other than transport, such as distance to family/friends and characteristics of the dwelling and neighbourhood (Chatman, 2009; Ettema and Nieuwenhuis, 2017). Anyhow, relocating to a new residential neighbourhood can create a new context in which travel-related choices (e.g., destination choice, travel mode choice) will be reconsidered (Verplanken et al., 2008). As a result, a relocation has the potential to create new travel patterns due to varying physical characteristics affecting travel (e.g., density, diversity, accessibility of public transport). However, it is possible that people stick to travel habits developed in their previous neighbourhood, even if the new neighbourhood stimulates other types of travel. In this study we will analyse travel attitudes and travel mode choice of people who recently relocated to a new residential neighbourhood in the city of Ghent, Belgium. The unique contribution of this study is that we focus on the effect of dynamics in residential location on travel behaviour and travel attitudes, recognising that the previous residential location may exert an influence on these issues and that attitudes and behaviours may linger for longer periods.

2. Data

For this study we use a 2017 Internet survey on travel behaviour of recently relocated people within the city of Ghent (255,000 inhabitants). Addresses of inhabitants relocating to a set of selected urban and suburban neighbourhoods between January 2015 and December 2016 were obtained through the city of Ghent. In February 2017, 9,979 letters with an invitation to participate in this survey were distributed in these neighbourhoods, which represent about one third of all inhabitants of the city of Ghent. In the end, 1,650 respondents completed the survey, resulting in a satisfactory response rate of 16.5%. It has to be noted that this is a relatively large sample size, considerably larger than other travel behaviour studies focussing on recently relocated residents (Aditjandra et al., 2015; Cao and Ermagun, 2017; Ettema and Nieuwenhuis, 2017). For this study we use 1,539 respondents as we removed respondents indicating that they already lived at their current dwelling before January 2015.¹

¹ These respondents probably registered their relocation officially a certain period of time after they actually relocated.

3. Methodology

3.1 Creating four groups

For this study we subdivide respondents into four groups based on their current residential neighbourhood (i.e., urban versus suburban) and their previous residential location. In the survey we asked respondents to indicate to which extent their current neighbourhood is less or more urbanised than their previous neighbourhood, on a scale from 1 (far less urban) to 5 (far more urban). Based on this information four groups were created:

- *Suburban residents relocated from a suburban-style neighbourhood (n = 264)*
current neighbourhood is not less urbanised than the previous neighbourhood (scores 3 to 5)
- *Suburban residents relocated from a more urbanised neighbourhood (n = 262)*
current neighbourhood is less urbanised than the previous neighbourhood (scores 1 and 2)
- *Urban residents relocated from a less urbanised neighbourhood (n = 593)*
current neighbourhood is more urbanised than the previous neighbourhood (scores 4 and 5)
- *Urban residents relocated from an urban-style neighbourhood (n = 420)*
current neighbourhood is not more urbanised than the previous neighbourhood (scores 1 to 3)

3.2 Travel mode choice and travel attitudes

In this study we focus on respondents' travel mode choice for trips to work or school (in case of higher education students). Respondents were asked to indicate how often – going from never (1) to always (5) – they use a certain travel mode (car; public transport; cycling; and walking) for these commute trips. In line with previous studies, we found higher car use for suburban residents than for urban residents, i.e., 55.0% of suburban residents frequently (i.e., a score of 4 or 5 on the five point scale) uses the car, while this is only 30.4% for urban residents. Frequent public transport use, walking and cycling, on the other hand, is higher for urban residents than for suburban residents (i.e., respectively 32.3%, 50.4%, and 32.6% for urban residents and 17.1%, 37.2% and 9.5% for suburban residents).

Additionally, we also analysed mode-specific attitudes. We asked respondents to which extent they agree on fourteen statements regarding the use of different travel modes. A factor analysis (principal axis factoring, promax rotation) was performed which resulted in the following four factors² (and statement with the highest factor loading): Pro car ('I need a car to feel free'); Pro sustainable travel investments ('public transport needs more investment'); Pro walking ('Destinations should be well accessible on foot'); and Pro cycling ('I like to cycle'). Suburban residents have, on average, a higher score on the pro car factor (i.e., 0.25 versus -0.13 for urbanites); while urban respondents have higher scores on the factors representing pro sustainable transport, pro walking and pro cycling (i.e., respectively 0.04, 0.06 and 0.06 for urbanites and -0.08, -0.12 and -0.11 for suburban residents). As our respondents only relocated recently, this suggests that travel preferences and attitudes have a considerable impact on the residential location choice.

² The four factors explain 62.2% of the total variance.

4. Results and discussion

Figure 1 and Table 1 indicate that travel mode choice and travel-related attitudes are not only affected by the current residential neighbourhood, but also by the previous neighbourhood. Suburban respondents previously living in a suburban-style neighbourhood travel more by car and less by bicycle and public transport compared to suburban residents previously living in a more urbanised neighbourhood. The frequency of walking is similar for both groups. Besides mode choice, travel-related attitudes also significantly differ between suburban residents previously living in a suburban style of neighbourhood and those previously living in a more urbanised neighbourhood. The former group has more positive attitudes towards the car and less positive attitudes towards sustainable travel investments and cycling, compared to the latter group. Attitudes towards walking are similar.

For urban respondents we find similar results. Urban respondents previously living in urban-type neighbourhoods travel less by car and walk, cycle and use public transport more compared to urban respondents previously living in less urbanised neighbourhoods. Furthermore, the former group has more negative views on car use and a more positive stance on sustainable travel investments and cycling. Somewhat surprisingly, attitudes towards walking are slightly less positive for urbanites previously living in urban neighbourhoods compared to urbanites previously living in less urbanised areas.

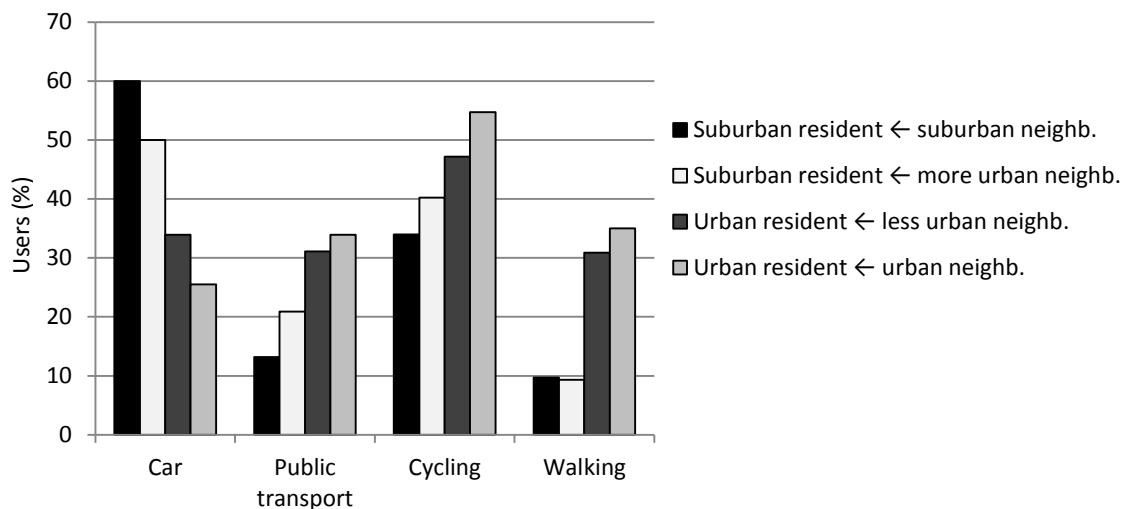


Figure 1. Frequent travel mode use within groups of similar types of current and previous neighbourhoods.

Table 1. Average factor scores of the four groups with similar types of current and previous neighbourhoods.

	Pro car	Pro sustainable travel investm.	Pro walking	Pro cycling
Suburban resident ← suburban neighbourhood	0.32	-0.13	-0.12	-0.16
Suburban resident ← more urban neighbourhood	0.17	-0.02	-0.12	-0.05
Urban resident ← less urban neighbourhood	-0.06	0.00	0.07	0.03
Urban resident ← urban neighbourhood	-0.23	0.11	0.04	0.10

Results of this study suggest that the previous residential location has an impact on travel attitudes and travel mode choice. To a certain extent people hang on to travel behaviour and attitudes which are consistent with the previous neighbourhood. This also indicates that travel-related attitudes are not the only important driver of a residential location choice. In a follow-up study we will analyse how these attitudes and behaviour evolve right after a relocation. For instance, if a suburban resident moves to an urban area, will his/her attitude towards public transport and active transport improve and will he/she travel less by car? And if so, what will change first, attitudes or behaviour? The new built environment can potentially change people's attitudes resulting in changing travel behaviour, just as it is feasible that the new residential location imposes a new travel behaviour on the new residents resulting in changing travel attitudes? On the other hand, changes in behaviour and attitudes can happen simultaneously (Kroesen et al., 2017). This information can also help explain why we found that (in contrast with other modes) walking frequency and attitudes towards walking do not seem to be affected by the previous residential neighbourhood, for both urban and suburban residents.

References

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