



The divergent role of spatial access: The changing supply and location of service amenities and service travel distance in Sweden



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ABSTRACT

This research explores and adds to the literature concerning the relationship between spatial structure and travel behaviour; specifically, the relationship between local and regional accessibility to service amenities and the distance of service-related trips. The analysis is based on a unique combination of national travel survey data for Sweden and official register data with detailed, geo-referenced information about the Swedish population and the location of service amenities in 1995 and 2005/2006. The results show that spatial access to service amenities increased in general over the study period, both locally (i.e., within ranges of 1 km and 5 km, respectively, of residential areas) and regionally (within 50 km). Despite increased spatial accessibility, the observed average travel distance also increased. We find strong and differing associations between spatial access to service amenities and travel distance, depending on level of scale. While the association was negative on the local scale (i.e., a numerically large supply of amenities was related to shorter travel distance), it was the opposite and positive, on the regional scale. In terms of implications for policy, the results imply that land use planning measures to promote local access, and thereby reduce traffic volumes, may per se be insufficient for attaining more sustainable levels of mobility.

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1. Introduction

The relationship between land use characteristics in terms of local access to service amenities on the one hand, and the distance of service-related travel on the other, may intuitively appear straightforward. People living in places where the land use patterns are characterised by an abundance of local amenities – e.g., ‘compact’ urban areas with high population and amenity densities (e.g., Handy, 1992) – may be expected to have little need to travel further than ‘around the corner’, while travel over longer distances may be a prerequisite for accessing amenities in places where there are fewer options to choose from in the vicinity. In essence, local access is often assumed to enable short travel distances (Lund, 2003; Handy, 1996; Banister, 2011), and policies aiming at promoting local access through land use measures have for some time been advocated in spatial planning (Handy, 1996; Kunstler, 1996 cited in Fainstein (2003)). Presumably, the larger the supply of amenities within the local neighbourhood, the greater the likelihood for a local amenity to be chosen (Næss, 2011). Regardless of whether the nearby options are those destinations that are actually chosen, areas with high levels of local accessibility provide residents with opportunities that are unavailable to residents of areas where this is lacking (Handy, 1992).

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However, it is not necessarily the case that patterns of revealed travel behaviour follow such simple causal mechanisms. Although people appreciate living in proximity to many everyday life destinations (Haugen, 2011) – an indication that they may also choose to actually use such nearby options – people often travel to activities located further away than the nearest alternative (e.g., Næss, 2011; Haugen et al., 2011; Haugen, 2012). The presence of a large supply of amenities outside the local residential area may induce people to choose such ‘external’ amenity options (Handy et al., 1998 cited in Næss (2011)). Indeed, over recent decades, people increasingly perform many of their out-of-home activities outside of the residential vicinity (Frändberg and Vilhelmson, 2011; Scheiner, 2010). This may be attributed to reasons of individual choice rather than to deficient exogenous (geographic-structural) conditions in the local vicinity, e.g., a lack of nearby options (Haugen et al., 2011). Also, Næss (2005, 2011) reports that for most travel purposes, interviewees emphasise the possibility of choosing from a variety of facilities rather than proximity as an important aspect of destination choice, and that the amount of travel is influenced to a higher extent by residential location in relation to concentrations of facilities, rather than the distance to the closest single facility within a category.

Hence, the oft-mentioned, high and growing levels of mobility in contemporary societies – based on evidence of extended everyday activity spaces and a shift towards the regional rather than the local level – are apparently not just the outcome of the demands that the spatial structure of society poses on our travel behaviour and of our daily activity schedules (e.g., Ahl, 2000; Krizek and Power, 1996 cited in Horner (2002) and Vilhelmson (2005, 2007)), but largely the outcome of individual choice (Haugen et al., 2011).

In the context of the development towards widened geographical reach and ‘regionalisation’ of activities, the following question arises: what is the relative importance of and relationship between the local versus the regional opportunity structure, not least the spatial concentration of amenities, for daily travel behaviour? This study aims to analyse the relationship between the distances that individuals travel for undertaking service activities and the supply structure with regard to these amenities within and beyond their residential vicinity. In doing so, we make use of unique micro-level data concerning the total Swedish population by merging geo-referenced data concerning individual travel behaviour and high-resolution register data regarding the location of service amenities. We are, thus, able to infer the relationships between travelled distance and spatial accessibility across spatial scales – local as well as regional – and also take change over time into consideration through the analysis of data for two cross-sections covering a 10-year period (1995–2005/2006).

2. Destination choice, travel and proximity: a literature overview

Conventional destination choice models (Mokhtarian and Salomon, 2001; cf. Haynes et al., 2003) consider the choice between alternative destinations or amenities as a ‘tradeoff between the disutility¹ of travel and the utility of the activity at the destination’ (Mokhtarian and Salomon, 2001, p. 699). Accordingly, people may try to compromise between the nearest alternative on the one hand, and the best alternative on the other (Næss, 2006). However, proximity may also be unimportant or even undesirable in cases where people wish to maintain some distance between themselves and certain activities or destinations, e.g., their workplace (Lynch, 1981; Sandow and Westin, 2010).

It is reasonable to believe that geographical proximity may be a key criterion in destination choice if, e.g., the available alternatives are equal or have defined catchment areas (Næss, 2006; cf. Metz’s (2010) discussion on ‘replicable’ destinations). If the alternatives differ in terms of, e.g., price levels, quality or symbolic value, attractiveness may be more important than proximity, as in the case of ‘status’ destinations (Leszczyc et al., 2004; Eppli and Shilling, 1996; Schenk et al., 2007; Metz, 2010). Longer travel distances would then be accepted in order to reach destinations that, e.g., correspond well with personal preferences (Næss, 2006; Haugen, 2012). The supply of amenities is often large, complex and varied, and specific and differentiated individual preferences presumably make people selective in their destination choices (e.g., Schenk et al., 2007). As argued by Reimers and Clulow (2004, p. 207) ‘rising levels of consumer awareness, affluence and mobility have helped create a more discerning customer’, who is often willing to travel further in order to reach adequate amenities. Yet, given the socio-economic differentiation of mobility, there are also groups who have relatively little scope for choice due to space–time restrictions such as a lack of mobility resources. For those people, access to a local amenity supply is of key importance (Haugen, 2012).

A wide array of different factors, on the demand side as well as on the supply side (Schenk et al., 2007) may affect destination choice and cause individuals to select options other than the nearest alternatives (Handy and Clifton, 2001). These factors include the properties of potential destinations and the emphasis placed on, e.g., price levels, quality, assortment and variety, store atmosphere and service (Morschett et al., 2005; Schenk et al., 2007). There are also geographical–structural factors at play, e.g., distance, co-localisation with other stores/services which enables time saving ‘one-stop’ shopping

¹ This view follows a conventional interpretation of travel in which it is interpreted negatively, as a cost (temporal or monetary) that is necessary for reaching desired destinations, but which should be minimized (Mokhtarian and Salomon, 2001). However, the negative view of travel as a disutility has not gone unchallenged (e.g., Jain and Lyons, 2008). Empirical studies have shown that people do not necessarily opt for the nearest when choosing between alternative destinations (Salomon and Mokhtarian, 1998), and observed travel time/distance may exceed the minimum levels (e.g., Haynes et al., 2003; Handy et al., 2005; Loh et al., 2009; Haugen et al., 2011), thus indicating that travel minimization may not always be the main priority and that the causes of travel are more complex than conventionally assumed. As suggested by Zahavi (1974, 1979; Zahavi et al., 1981, cited in Dieleman and Wegener (2004)) people may in fact seek to maximize the utility associated with activities as far as possible given their time and monetary travel budgets, as opposed to minimizing the time and money needed to perform a certain set of activities.

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