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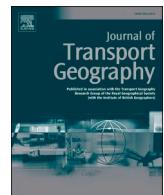
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Accessibility and mobility: Positional goods? A discussion paper

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ABSTRACT

This discussion paper hypothesizes that the concept of positionality could also apply to accessibility and mobility. Positionality implies that the utility of a good depends on how the good is distributed amongst the population. In this case: the appreciation of a certain level of accessibility or mobility depends on the level of accessibility or mobility of others. The paper explains why this could be the case, provides theoretical underpinnings for it, and discusses options for future research.

1. Introduction

In utility theory it is common to assume that the utility of a good or service for a person depends on the attributes and attribute values of the good or service. From now on I will use the term ‘good’ to refer to both goods and services. A less common assumption is that the utility of a good for a person depends on the distribution of that good amongst the population. More specifically, the utility of a good for a person depends on the distribution of that good for others with whom they may compare themselves. In its simplest mathematical form: the Utility of a good is a function of (a) the characteristics of that good, (b) the characteristics of the person, and (c) the distribution of the same good over a selection of others. An alternative conceptualization could be that what others have is a moderator that heightens or diminishes the impact of individual components of a good on overall utility.

Such goods, an important subcategory being goods that are regarded as conferring a certain status, are referred to as ‘positional goods’ (Hirsch, 1977). The status a good provides is in some cases an important reason why positionality matters, examples of goods to which status could apply being cars, clothes, expensive watches and luxury houses.

In this discussion paper I argue that the concept of positionality could also apply to accessibility and mobility, at least to some forms of accessibility and mobility, and for some people. I define mobility in this paper in terms of travel behavior, not in terms of options to travel. So far, to the best of my knowledge, the literature did not link positionality and accessibility. A search in SCOPUS (10-7-2020) using the search string [(positionality OR “positional goods”) AND (accessibility OR mobility OR travel)] revealed 98 hits, but none of those relate to this specific topic. The aim of this paper is to extend the conceptual and theoretical literature on the value of accessibility and mobility and to provide a research

agenda.

If mobility was (partly) a positional good, it is possible to envisage how this could lead to overconsumption, at the cost of the environment, high monetary expenditures of people, and (from a societal perspective) an oversupply of transport infrastructure. If accessibility was a positional good, the (societal) optimal provision of transport infrastructure would be lower. This could also apply to (public) services (such as sports facilities), and (public) transport services.

2. The theory of positional goods: Introduction, link with accessibility and transport, theoretical underpinnings

Hirsch, who proposed the concept of positional goods (Hirsch, 1977), does not only apply it to goods but also to social relationships and work positions. In this paper I limit myself to goods only. As explained above, positionality can be the result of status. The concept of status implies that for people who are status sensitive it is important what others think of them, and that this is considered to be influenced by the position of a certain good the person has relative to what others have. Hirsch also links the concept to power and superiority, both also per definition implying that other people are relevant. I will not further discuss power and superiority in this paper.

In some cases positionality matters because of the relative position of a person’s good compared to others, without any restriction to the overall amount of that good, whereas in other cases positionality may be important because the total amount of a good is fixed. In this paper I will not further consider the concept of ‘fixed amount’, as, in the case of accessibility and mobility, it seldom applies (a rare exception maybe the very limited supply of tickets into orbit).

If the utility of a good only depended on positionality, the overall

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utility for a group of people would not change as a result of people purchasing more or less of that good – this is typically what economists call a ‘zero sum game’ (for example, [Porter and Kramer, 2006](#)). But if everyone tried to purchase more of that good, the utility of that good measured across all of the people would remain the same, but the people would be worse off financially and society could possibly be worse off due to negative effects like CO₂ emissions. For example, cars are to some extent positional goods, resulting in a shift in the car fleet towards more expensive cars which emit more CO₂ emissions when compared to the situation if positionality did not apply ([Hoen and Geurs, 2011](#)). In economic terms: consuming positional goods generates externalities for others, leading to overconsumption. Note that there is a strong positive correlation between car price and CO₂ emissions ([Hoen and Geurs, 2011](#)), but there are exceptions. A Tesla model S for example, is expensive but because it is an electric car in many countries the CO₂ emissions are relatively low (depending on the way electricity is produced).

The concept of positional goods has rarely been applied to the transport community, with the exception of car type choice. [Verhoef and van Wee \(2000\)](#) theoretically explored the concept of positionality and car type choice. They linked car type choice to status, without explicitly using the terminology of positionality or positional goods. They linked status to the concept of happiness, and the empirical finding that happiness does not increase any more at the aggregate level above a certain income threshold, to the fact that people spend increasingly more income on goods which provide status, such as more expensive cars. They proposed a theoretical model demonstrating that government interventions leading to a downgrading of all cars sold would increase welfare. [Hoen and Geurs \(2011\)](#) empirically showed that at least in the Netherlands, car type choice indeed is subject to positionality.

One could argue that accessibility, unlike mobility (in terms of travel behavior), is not a good one can purchase, and that therefore it is not appropriate to consider a link between the concept of positional goods and accessibility. Two objections can be raised against this point of view. First, one cannot directly buy accessibility, but one can choose a residential location and buy vehicles influencing levels of accessibility, thereby buying accessibility indirectly. In addition, even if one rejects accessibility as a good, it is still possible that the utility of a certain level of accessibility can be influenced by the accessibility level of other people. So the concept of positionality may apply anyway, and that is the core of this paper. Switching the topic to mobility, one can buy mobility directly, in terms of airline, ferry or public transport tickets. Or one can decide to buy and use a car, ‘buying’ mobility, though in a more complex way than buying, for example, an airline ticket. Again, even if mobility choices are not considered to be goods, it does not exclude the possibility that choices made are subject to positionality.

The concept of positional goods has its roots in economic theory. But economics is not the only theory helpful to understand that the utility of a good can depend on what others have or think of one’s choices. In the area of psychology [Steg et al. \(2001\)](#) demonstrated that car ownership has instrumental, affective, and symbolic motives. Symbolic motives depend on what others think of a person in relation to that person’s choice of car type, which underpins the positionality of car type choice. One can argue that the same applies to other goods, such as houses, or maybe also holiday destination choice – see below. Also the theory of social comparison ([Festinger, 1954](#); [Wood, 1989](#)) makes clear that people compare themselves to others, also underpinning the relevance of the distribution of a good amongst (a part of) the population for the utility that good provides to a person. See for example [Ory et al. \(2007\)](#) who discuss the factors inducing comparison (with others) in the context of (subjective) mobility, and show that such comparisons are relevant for people. [Cepeda Zorrilla et al. \(2019\)](#) show that social image influences the intention to cycle. [Oswald and Ernst \(2020\)](#) show, based on social identity theory ([Tajfel et al., 1979](#)), that flying behavior is subject to social comparison. So, the concept of positionality strongly relates to several other theories and concepts presented in other fields, mainly

psychology and sociology. It is a label that could fruitfully link multiple concepts already appearing in the psychological and sociological (transportation) literature. An additional theoretical underpinning of the relevance of this distributions comes from the area of philosophy, more specifically ethics. An influential theory or ethical principle is egalitarianism, which argues that at least some goods should be distributed with minimal inequality across the population ([Rawls, 1971](#)). Some distributions of goods may be considered to be unfair. Note that such distributions are not limited to goods, but can also apply to income. An example of linking egalitarianism to accessibility can be found in [Lucas et al. \(2016\)](#). Note that not all unequal distributions are unfair, people might simply envy others for what they have. Therefore there can be a rather blurry boundary between fairness and envy of any inequality. The reasons why I nevertheless link positionality to ethical theories, are first that these theories also underpin the relevance of distributions, and second that ethical issues have rapidly gained more attention in the transport and accessibility literature.

3. Why could accessibility and mobility be subject to positionality?

I use the definition of accessibility of [Geurs and Van Wee \(2004:128\)](#): “the extent to which land-use and transport systems enable (groups of) individuals to reach activities or destinations by means of a (combination of) transport mode(s).” Accessibility could be subject to positionality because it is possible that people compare their levels of accessibility with the levels of others, and next the utility of their level of accessibility could be influenced by the accessibility level of others. For example, we cannot exclude that people derive a certain status from living in a nice area with many options to reach nearby destinations, the center of Paris or London being candidate examples. On the other hand it could be that people in a rural area feel even more deprived by the gradual disappearance of schools, shops and services if they know that in comparable rural areas, whether nearby or further away, this has not happened. In the case of several towns within one municipality it could be that the inhabitants compare their levels of accessibility with those in other towns, especially if those levels are influenced by government policies. One can think of the city hall, a swimming pool, schools and medical services.

The theories underpinning the relevance of positionality could depend on the type of destinations at stake. I hypothesize that in the case of ‘basic destinations’, such as schools, grocery shops, and medical services, ethical theories related to perceptions of fairness could be important. This hypothesis is underpinned by Rawls, an influential ethicist, who extensively discusses what he calls primary social goods and the fairness of the distribution of such goods in his theory of justice ([Rawls, 1971](#); see also [Rawls, 1982](#)). In the case of ‘luxury destinations’ like opera houses or theatres, psychological theories such as social comparison theory or economic theories addressing status seem more plausible.

In addition, mobility could also be subject to positionality. It is possible that not only the option to travel and reach destinations (accessibility) matter, but also real travel behavior and related activity participation. [Roby \(2014\)](#) shows that status plays a role in business travel. In 2020, due to Covid-19 restrictions, international travel, also for touristic reasons, was either not possible or extremely limited. I heard several people say they this did not bother them, because no-one was able to travel. In other words, the decrease in utility of a domestic holiday trip which replaced an international holiday trip was less because others also were not able to travel internationally, a clear case of positionality. This may not of course apply to everyone, but for the selection of people to whom it does apply, positionality plays a role. Although not related to Covid-19, these reactions are in line with findings of ([Bond and Falk, 2012](#)), who showed that identity plays an important role in tourism. Identity is a concept that is broader than positionality alone, but if identity did not play a role at all, positionality

would not occur in tourism.

Again, I hypothesize that if low levels of travel apply for trips to basic destinations, ethical theories probably best underpin positionality, and for travel to luxury destinations psychological and economic theories seem more plausible.

4. Positionality at the governmental and company level

The importance of positionality for accessibility is not necessarily limited to the individual or household level only but can also apply at the level of governmental bodies. The fact that many benchmarks exist for local municipalities within one country, in several areas (in the Netherlands for, for example, cycling friendliness, quality and quantity of green urban space) is an indication of the fact that municipalities consider their relative position compared to other municipalities as important. This relevance could be fueled by the fact that governmental bodies, local politicians, and aldermen could be proud of their relative position (or hate to be worse off than other comparable municipalities) but also because scoring better than competitor municipalities could be important to attract companies, institutions, shop owners, etc.

Benchmarks also exist at the national level, the inclusion of infrastructure (including transport infrastructure) in the global competitiveness report of the World Economic Forum ([Schwab, 2019](#)) being a clear example. Such benchmarks could be an indication of the occurrence of positionality at the level of national governments for comparable reasons as for local municipalities.

Finally positionality could also play a role for companies, examples being the benchmarks in the area of national railway companies focusing on customer satisfaction or punctuality.

5. Hypotheses/research directions

This is explicitly a discussion paper – I hypothesize that positionality could apply to accessibility and mobility. This hypothesis needs to be explored empirically to find out if, for whom, in which areas, under which conditions, to what extent, and why it applies. In this section I present some avenues for future research.

5.1. Accessibility

In the area of accessibility residential choice is probably the most interesting topic: maybe this choice is influenced by the resulting level of access to destinations, not only in absolute terms, but also relative to others. Maybe people ascribe value to having better access than other people to facilities like theatres, swimming pools, tourist attraction, green areas, or restaurants. In other words, not only the access to such facilities matters, but also the access that others have to such facilities. Empirical research on accessibility and positionality is complicated by the fact that ‘accessibility’, unlike other goods like cars, or even travel behavior indicators, for most people is a vague concept. So questionnaires can probably better avoid using the term, but formulate accessibility levels in terms of travel times and distances to destination categories, and in terms of the number of destinations within one category (for example: restaurants) accessible within a certain travel time or distance.

5.2. Mobility

In the area of mobility it could be that people compare their overall level of mobility with others. Especially if they consider themselves to be cosmopolitan people they might value travelling a lot ([Oswald and Ernst, 2020](#)). More specifically it is possible that people focus on specific forms of travel and activity behavior. For example they may compare their holiday destinations with others. Only 50–60 years ago in many European countries it was the exception to go abroad for a holiday trip, but nowadays international holiday trips are way more common. So it

could be that going abroad to a neighboring country increased one’s status considerably in 1965, but not anymore. Positionality of destination choice could influence people’s destination choice, and also the utility of visiting a certain destination. An example: imagine a person from North-West Europe who prefers a trip to Spain to a trip to Switzerland. In scenario A she visits Spain but others travel to an even more desirable location, say New Zealand. In scenario B she visits Switzerland, whereas others stay within their country of origin. It is possible that she is happier in scenario B than in scenario A, even though Switzerland (scenario B) is less attractive than Spain to her (scenario A), because she compares her destination with the destination of others. Researchers could first ask people to rank the attractiveness of holiday destinations, and then use the results in scenarios presented to respondents, to explicitly compare less and more attractive options, and add the destinations that others visit.

Frequent flying for business reasons, or travelling a lot for business reasons in general, could also provide a certain status, and maybe some people compare themselves with others in this respect. Although this is not unexplored territory (see for example, [Thurlow and Jaworski, 2006](#)), further research is needed to find out whether this applies, to whom, under which conditions, etc.

For both holidays and business trips, as suggested above, the Covid-19 pandemic provides an interesting case, because it could be that the negative impact of not being able to travel frequently in general or flying in particular could be lower because others face the same restrictions.

Focusing on other modes, it is possible that people compare their annual car mileage with others, of maybe their cycling frequency.

5.3. Interdisciplinary research

As explained above, the idea that others influence the decisions or the utility of decisions of people, is not the exclusive domain of economics and is not only explained by the concept of positionality. Interdisciplinary research combining positionality with other concepts like social comparisons and other theories like the theory of social comparison or social identity theory seems a promising avenue for future research. To some extent different theories and concepts roughly focus on the same behavior, preferences or utility of people, but they can also be complementary. And it is also important to disentangle decisions and decision making on the one hand, and expected utility at the time of making a decision and experienced utility on the other hand. In both cases what others have of the same (or comparable) good could matter, but also what others think or at least what people think that others think.

5.4. Methodologies

In addition to these content-related suggestions, a methodological suggestion is to conduct qualitative research. The common way to explore positionality is to provide scenarios and let people choose. Such quantitative research is very useful in exploring the size of positionality effects, and the factors influencing this size. In addition qualitative research (interviews, maybe focus group meetings), aiming to find out why positionality could be important, could add to a better understanding of the phenomenon. Such research could explicitly link the answers to the why question, to theories underpinning the existence of positionality, as discussed above.

A general remark that applies to many studies on positionality is that researchers can directly ask for peoples’ choices or preferences and include positionality in the options provided, [Hoen and Geurs \(2011\)](#) being an example of a study on car type choice and positionality. However, depending on the topic, people generally do not easily admit to having included their relative position or the opinion of others, when buying goods (or appreciating income levels) that could be subject to positionality, so directly asking respondents might lead to an underestimation of the importance of positionality. That is why in some studies researchers ask about the choices or preferences of (imaginary) grand-

children before presenting the choice options: for example, in which society would they be more happy or would they prefer to live? (e.g. Johansson-Stenman et al., 2002). So the design of a questionnaire could influence the results strongly.

A final remark: to avoid inventing the wheel: inspiration for methodologies, including the pros and cons of options for methods, can be found in the literature studying positionality (regardless of whether they use that term or not) in other areas than transport. For example, Wang et al. (2019) include social comparison with respect to income in a study on well-being levels. This example shows that positionality does not by definition need to be measured in terms of utility, the common approach in economics.

6. Concluding remarks

This paper argues that it is possible that positionality plays a role in the choices and preferences in the areas of accessibility and mobility. However, further research is needed to explore this hypothesis, for example to what extent, for whom, under which conditions, and why. If positionality does exist in this field then there are important implications for policy making, especially if societally undesirable choices result from positionality. In addition to the implications addressed in the introduction of this paper, an example could be that if people choose to fly more and further partly because of positionality, governmental policies to reduce flying (for example because of climate change reasons) would come at lower societal costs compared to if positionality did not play a role, a conclusion which is in line with the implications of positionality as discussed in the original work of Hirsch (1977). One problem with policies which make flying more expensive is that people who have experienced flying may consider being less able to do this as a loss, and people are loss averse, as Prospect Theory (Kahneman and Tversky, 1979) tells us. So the longer policy makers wait to implement policies to reduce the attractiveness of flying, the lower the acceptance of such policies might be, and the higher the losses of utility when implemented.

It is beyond the aim of this paper to discuss policy implications, or even 'solutions', in any depth, but a few reflections can be made. First, the existence of negative effects due to positionality could be reduced via pricing policies (Verhoef and van Wee, 2000), i.e. negative effects could be priced higher than if positionality did not occur. Secondly, it is probably not a good idea to construct candidate new airports where the benefits hardly outweigh the costs and that aim to attract mainly tourists that would have to fly great distances, because after the inclusion of positionality, the costs could easily be higher than benefits. Third, the existence of positionality could be used in a positive way by stimulating the purchase of expensive and desirable cars with relatively low negative external effects. Coming back to the example of the Tesla model S above, policies that stimulate the purchase of such cars might persuade more people to buy one because of the positionality effect.

If the only negative societally relevant effect of positionality is that it would lead to higher CO₂ emissions, internalizing the 'costs' of these emissions would remedy the problem. But there are more externalities: also the utility of the positional goods of others decreases if people buy more expensive goods partly because of positionality effects (Verhoef and van Wee, 2000). So, even if CO₂ or other environmental impacts were absent, pricing the external effects of the decreased utility of others due to positionality is to be recommended to increase welfare, under the condition that associated external effects can be measured relatively

easily, and the transaction costs in intervention do not exceed the welfare increases.

A final reflection: it is very likely that companies offering goods and services that are subject to positionality, adapt prices. Such companies do not even have to realize the existence of positionality, but the effect of positionality translates into a higher demand for such goods and services, leading to a higher price assuming profit maximization is the aim of the company. And this higher price then reduces demand to some extent.

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