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Residents' responses to proposed highway projects: Exploring the role of governmental information provision



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ABSTRACT

Despite increased efforts to actively consult residents in highway infrastructure planning to i.a. increase acceptance of plans, the involvement of most residents is passive and limited to receiving information. By means of multivariate regression analysis, this paper explores the role of governmental information provision in residents' responses towards highway project proposals, measured by the expected change in residential satisfaction i.e. the match between housing needs and conditions, as a consequence of those projects. We also pay specific attention to permeability of and satisfaction with information provided. The analyses are based on questionnaire data collected among 484 residents living close to two announced plans for highway adjustment in the Netherlands.

We found indications that residents who received information from a governmental project team are more satisfied with information compared to residents who only received information from other sources. In its turn, a higher level of information satisfaction was associated with more positive expectations with regard to changes in their residential satisfaction, although other contextual variables were also explanatory. Receiving information from the project team was mainly associated with a closer residential proximity to the highway where project team distribution efforts were also more intensive. However, we observed clear personal and project-specific differences in the number of information sources received and the likelihood to attend information meetings. The latter was also associated with more negative expectations towards residential satisfaction change. This indicates a clear difference in characteristics between the more actively involved group and the silent majority.

An important implication of this study is that information provided by project teams seems to increase acceptance of plans, via its contribution to residents' information satisfaction. Nevertheless, only a minority of residents appeared satisfied with the information they received. Therefore, it seems worthwhile for planning agencies to pay more attention to people who currently appear less satisfied with the information provided. These include older residents, residents with fewer social contacts and families with children. In addition, the results indicate clear differences in expected satisfaction change between more actively and more passively involved residents. This may be a reason for governments to not only focus on opinions grasped from information meetings, but to specifically take into account the opinions of the more passive 'silent' majority.

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1. Introduction

Announcing a highway project to residents living nearby has frequently proven to be a challenge. Projects are mainly initiated to

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increase (regional) accessibility, however, construction periods and changes in the local residential environment cannot be avoided. Residents are often worried about plans that may influence their residential surroundings, which may trigger so called 'NIMBY' i.e. Not In My Back Yard opposition (e.g. Healey, 1997). This is one of the reasons why nowadays it is generally believed that governmental authorities planning infrastructural projects such as highways should involve the public in the planning process (e.g. Healey, 1997; Booth and Richardson, 2001; Bickerstaff et al., 2002). Involvement of residents has the potential to reduce uncertainty and increase residents' acceptance of such projects.

This paper focuses on one of the authorities' activities to involve residents in highway infrastructure planning processes: information provision. Information provision is a relatively elementary method of residential involvement, often complemented with higher levels of involvement such as consultation meetings; the latter method is believed to be more effective in increasing acceptance of plans (e.g. Arnstein, 1969; Edelenbos, 2000). However, in general, the number of people actively participating, for example by attending meetings, seems to be limited and selective (e.g. Dideck and Sinclair, 2002; Hysing, 2015). Therefore, receiving information about the project is where the involvement of most people stops, making it an important mechanism in reaching the larger community. Although the importance of information provision receives attention in other NIMBY contexts (e.g. Schively, 2007; Frewer, 2004), as far as we know, empirical insights on its relevance in the context of highway infrastructure planning is limited.

Hence, the objective of our study is to explore to what extent information about proposed highway projects provided by governmental authorities (i.e. project teams) is related to residents' responses to those projects, the latter measured by expectations with regard to changes in residential satisfaction. In this, residential satisfaction i.e. the match between housing needs and conditions (Lu, 1999) could be seen as a proxy for quality of life and future coping strategies (e.g. Speare, 1974; Lu, 1999), which may be expected to change by the consequences of the project. More positive expectations could then be seen as a sign for a higher project acceptance. In studying this relation we also consider residents' information permeability (i.e. the extent to which residents report to have actually received information) (e.g. Perloff, 2003; Dunwoody and Griffin, 2014) and the satisfaction with the received information (e.g. Schively, 2007; Frewer, 2004) as research indicates both aspects to be important in understanding the effects of information provision. One should keep in mind that, in most developed countries, influencing acceptance of projects by information provision is not an explicit policy aim in itself. Nevertheless, government information provision may implicitly increase acceptance of plans when it contributes to transparency and consequently trust in governmental actions (e.g. Schively, 2007; Olander and Landin, 2008). Gaining insights into the consequences of governmental information provision could broaden our understanding of the effectiveness of involvement efforts. From a planning policy perspective, general insights into differences in residents' information permeability and satisfaction could help to better adjust information to specific information needs.

Two cases in the Netherlands - Groningen and Utrecht - are studied where major highway enlargement projects were announced. We chose enlargement projects because current and future road infrastructure projects in the Netherlands, similar to most developed countries, will mainly consist of extensions and improvements of the existing network (e.g. Tillema et al., 2012). We analysed data obtained by paper questionnaires from 484 respondents living within 1,000m from the proposed projects.

The outline of our paper is as follows: in Section 2, we provide a review on the effects of infrastructural projects on residents and the role of governmental information. In Section 3, we explain the research design and methodology of our study, followed by a presentation of our findings in Section 4. Finally, in Section 5 we discuss the implications of our research findings for theory and planning practice, and provide directions for further research.

2. Literature review

2.1. Residents' responses towards highway projects

When a highway project proposal is announced, residents will make a personal trade-off between perceived expected benefits and costs of the project on their residential satisfaction. On the one

hand, a highway project could bring benefits to residents, for example when it comes with accessibility improvement (Tillema et al., 2012), which may positively influence residential satisfaction. On the other hand, transport infrastructure projects are also often associated with the NIMBY phenomenon, as the costs of such projects are mainly local (e.g. Arts, 2007) and may result in a decrease of residential satisfaction. Kahneman's prospect theory (1979) assumes that people are likely to overestimate the chance of losses in situations, which contain uncertainty. As an announced highway project proposal contains uncertainty as it is not yet realized, we may assume that residents living in its vicinity are likely to overestimate the potential negative effect the highway will have on their neighbourhood. Dear (1992) argues that uncertainty with regard to potential effects on house prices, neighbourhood changes and personal safety may cause concerns and resistance against 'unwanted' facilities. It may be assumed that residents weigh the expected perceived costs of a project in their environment against its perceived benefits and accept the project if they feel the benefits outweigh the costs (Aeschbacher, 2006; Lober, 1995; Portney, 1991).

The way in which residents make this trade-off between expected benefits and costs on their residential satisfaction could be dependent on a variety of factors. According to Siu et al (2001), stakeholders' expectations of projects may be determined by a combination of personal needs, past experiences, word of mouth and external communications. More specifically for the study of NIMBY responses, Dear (1992) mentions four factors which might be of relevance in understanding differences in residents' expectations to highway project proposals: client, facility/project, programmatic and community/personal characteristics. Client characteristics are the subjects related to the facility to be sited which could be seen as unwelcome, such as, in the example of Dear (1992), the patients of a mental hospital, or, in our case of highway siting, the cars driving on the highway. There is a growing aversion against the increase in car use (e.g. North, 1998), which may impact the way people judge highway projects. Facility/project characteristics relate to the type, size and appearance of the project, which could influence how people rate its impact. Programmatic considerations are aspects like the amount of community involvement and the amount of facilities already in the community, i.e. the saturation level. In this respect, Laws and Susskind (1991) refer to geographical fairness; facilities should be equally spread across neighbourhoods. Another reason for differences in responses are characteristics of the residents and the community. For example, several studies argue that the potential for NIMBY opposition is higher for males, individuals with a higher income, high-educated individuals, professionals, married people, homeowners and older people, as well as in more homogeneous neighbourhoods in which people have more contact with each other (e.g. Dear, 1992; Mansfield et al., 2001). Hamersma et al (2014) report that older people, non-highway users and people who are already annoyed by noise and air pollution had more negative expectations about a highway enlargement project. In a study on locating solid waste facilities, Wolsink (2012) argues that trust in the government and environmental interests are of relevance in understanding reactions of residents. Other studies argue that people in close vicinity to a project are more likely to value costs stronger than benefits (e.g. Aeschbacher, 2006; Lober, 1995). In addition, timing can also play a role; a shorter timespan until the project's execution is found to be associated with increased negative response (e.g. Devine-Wright, 2007; Dear, 1992). As such, in analysing responses of residents to highway projects, several contextual aspects could be taken into account.

2.2. Governmental information provision about highway projects

Residents' acceptance of proposed highway projects could be influenced by the information received from project teams assigned

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