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Understanding resident satisfaction with involvement in highway planning: in-depth interviews during a highway planning process in the Netherlands

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This study investigates resident satisfaction with provided involvement activities during highway planning processes, with particular attention given to the planned Southern Ring Road highway project in Groningen, the Netherlands. In-depth interviews with 38 residents living in the project area reveal important themes contributing to satisfaction. Satisfaction with passive information activities is motivated by the extent to which information addresses concerns, but (dis)trust in government and other information sources also plays a role. For residents preferring to obtain additional information, perceived access to such information and the extent to which it reduces concerns are also important to satisfaction. Finally, for residents who would rather participate actively, satisfaction is motivated by their perceived access to participation activities and the sense of being heard. Study results show how residents' evaluations of the themes underpinning involvement satisfaction are based on their perceptions of actual project team activities and contextual factors.

Keywords: information; participation; residents; preferences; satisfaction; highway; interviews; context

1. Introduction

The involvement of residents in government planning processes, such as the (re)development of highway infrastructure, has gained increasing attention in recent decades. Stakeholder involvement is not only supported from a democratic and legal point of view, and therefore incorporated in law in many countries, but is also associated with more efficient and effective planning when those activities increase trust in the government, improve plans through collecting local knowledge, and thereby increase acceptance of projects (Luyet *et al.* 2012; Innes and Booher 2004; Gil, Calado, and Bentz 2011; Henningsson *et al.* 2015). As a consequence, project teams assigned by government to plan highway projects in the Netherlands (and abroad) now provide residents with several possibilities for getting involved in highway planning projects.

If we follow Arnstein's (1969) 'steps' of the ladder, that is, the degree to which residents can be involved in government activities, one can proceed from 'non-participation', which is basically a one-way information flow from planning authority to public; through to 'tokenism', which generally requests consultation or seeks input from the public; and finally to 'active participation', i.e. ultimate citizen control or the

delegation of decision-making to the public. The importance of high involvement, i.e. active participation of stakeholders such as residents in planning processes, is also increasingly being recognised in the field of (transport) infrastructure planning (Gil, Calado, and Bentz 2011; Woltjer 2000; Bickerstaff, Tolley, and Walker 2002; Leendertse *et al.* 2015. Nevertheless, generally speaking, involvement in infrastructure planning has not (yet) reached its highest possible level of participation (Rijkswaterstaat 2009) partly due to tight project scopes (time, money) and strong national and regional interests that supersede local concerns.

Regardless of the provided involvement activities, studies also show that residents vary in their preference for degree of involvement; some groups of residents prefer to be more deeply involved in government decision-making (Bickerstaff and Walker 2001; Diduck and Sinclair, 2002; Hamersma *et al.* 2016). In addition, research suggests that contextual factors such as cultural aspects, historical events, and personal (socio-economic or attitudinal) factors may influence the way in which involvement activities of governments are perceived by residents (Luyet *et al.* 2012; Stenseke 2009; Irvin and Stansbury 2004; Chi, Xu, and Xue 2014; Webler, Tuler, and Krueger 2001; Hanna 2016; Hamersma *et al.* 2016). To better understand the effectiveness of involvement activities with residents, it therefore also seems important to account for personal contextual factors.

Although several studies touch upon aspects crucial to good involvement processes and also suggest the (potential) role of contextual factors, an in-depth understanding of how both jointly contribute to resident satisfaction with provided involvement activities is still missing from the literature, especially in the case of highway planning. This study addresses this issue while also accounting for differences in how residents prefer to be involved during the planning process: low involvement via passively receiving information, medium involvement via seeking additional information, or high involvement via active participation. We assume that resident satisfaction with involvement activities develops through the interaction between provided involvement opportunities and (personal) factors relating to context. Creating such an in-depth perspective could, we argue, contribute to a more *inclusive* framework of factors that stimulate or interfere with resident satisfaction with involvement activities provided by governments.

To this end, we have conducted in-depth interviews with 38 residents living in the vicinity of the urban highway 'Southern Ring Road' in Groningen, the Netherlands, just after the final decision for a large adjustment project had been taken. The neighbourhoods surrounding the urban highway are expected to undergo several changes with regard to accessibility and liveability as a consequence of the highway adjustment. The government project team responsible for the adjustment had offered residents several options for getting involved in the planning process for the project, including information brochures, meetings, (informal) discussion meetings, and (formal) written reactions ('Zienswijze') (Southern Ring Road Project 2015).

It is noteworthy that the literature suggests that, if participants are (not) satisfied, this does not automatically imply an (in)adequate involvement process, because participants' evaluations may be subjective (Coglianese 2003). However, when we consider how to better match involvement activities to preferences of (different) residents, we argue that it is essential to delve deeply in order to understand the process leading to a resident's satisfaction with involvement. Over the long term, insights into this process may contribute to increased acceptance of highway projects among residents.

2. Background

2.1. *Conditions for good involvement practices*

Resident satisfaction is likely to correspond to the quality of the provided involvement options. According to Dietz and Stern (2008), who studied public involvement in environmental decision-making, good involvement processes should stimulate (1) inclusiveness; (2) transparency; (3) good-faith communication; and (4) collaborative problem and process design. These aspects largely coincide with other studies of involvement processes in the transport infrastructure sector (Bickerstaff and Walker 2001; Bickerstaff, Tolley, and Walker 2002; Cascetta *et al.* 2015; Quick, Narváez, and Saunoi-Sandgren 2014). First, inclusiveness means that everyone should be encouraged to get involved in the planning process. In their study on participation in transport planning, Bickerstaff, Tolley, and Walker (2002), refer to 'inclusiveness' as the capacity of the planning process to include every citizen from the early phases of the planning process onwards. Second, transparency refers to the clarity of the planning process (Dietz and Stern 2008), or the extent to which external actors (e.g. residents) are able to monitor and assess the internal processes, decisions and performance of a (government) organisation (Welch 2012; Grimmelikhuijsen 2012). In this regard, the Internet is increasingly used to browse for information and as a means of access to information, thereby leading to improved transparency (Welch, Hinnant, and Moon 2005). Third, good-faith communication refers to a two-way dynamic process between the project leaders and its citizen participants (Dietz and Stern 2008; Crane and Livesey 2003). Good communication mechanisms should be provided and transmissions should address actual concerns (Dietz and Stern 2008; Frewer 2004). Luz (2000) argues that when environmental knowledge is not conveyed in a comprehensible way, people may feel that those who have power are behaving arrogantly. Several other studies mention that communication needs to be interactive and face-to-face, and that correspondence by way of documents and email is found to be insufficient for creating trust between the actors (Pinto-Correia, Gustavsson, and Pirnat 2006; Kasperson, Golding, and Tuler 1992). Finally, collaborative design focuses on the extent to which participants are actually involved in the co-design of a project, that is, actively participating (Arnstein 1969; Rowe and Frewer 2005; Luyet *et al.* 2012; Stenseke 2009; Quick, Narváez, and Saunoi-Sandgren 2014). Studies agree that collaborative design is better facilitated when participants are involved early in the process (Dietz and Stern 2008; Leach, Pelkey, and Sabatier 2002; Henningsson *et al.* 2015). Whether project teams are able to incorporate those aspects is likely to influence the extent to which residents will be satisfied with the involvement options.

2.2. *Involvement and contextual factors*

The degree of resident satisfaction with the provided involvement activities may also be influenced by contextual factors. For example, a few studies indicate that cultural/ political issues (e.g. type of institutional setting); social aspects (e.g. the way residential areas are organised); and historical aspects (e.g. previous experience with large scale projects) may play a role in understanding how involvement methods will be evaluated (Luyet *et al.* 2012; Stenseke 2009; Irvin and Stansbury 2004; Chi, Xu, and Xue 2014; Webler, Tuler, and Krueger 2001; Henningsson *et al.* 2015). The study of Irvin and Stansbury (2004) concludes that involvement efforts are more beneficial in residential areas with good neighbourhood representatives, as well as in cases where the topic of

involvement is of high interest to stakeholders. Other studies demonstrate that expectations of the role of government, often based on previous experience, may raise suspicion among stakeholders and possibly provoke negative attitudes (Rowe and Frewer 2000; Coglianese 2003; Bailey and Grossardt 2010; Edelenbos and Klijn 2007). Along the same line, Welch, Hinnant, and Moon (2005) argue that trust is a subjective attitudinal indicator rather than an objective indicator of government performance. In the context of Not in My Back Yard (NIMBY) research, in which highway development can be understood, the importance of trust is particularly critical in situations where there are involuntary risks, e.g. unwanted developments (Schively 2007; Frewer 2004). Also other socio-demographic and attitudinal factors seem to play a role. The study by Hamersma *et al.* (2016) finds that, in two highway projects in the Netherlands, some groups of residents were less satisfied with provided government information than others, depending on their socio-demographic characteristics. Their study shows significantly lower information satisfaction for older residents, households with children and individuals with few contacts in the neighbourhood. As contextual factors may differ among residents, it is likely that residents evaluate involvement activities differently.

Another issue to consider in understanding the development of satisfaction with involvement activities is that not every resident prefers to be highly involved in infrastructure planning processes. Studies in other contexts, such as environmental and community projects, provide several reasons for non-participation, such as: other priorities; the fact that concerns were adequately addressed; not being directly affected by the project; unwillingness to take responsibility; participation fatigue; discouraging previous experiences; overall trust in the government and their actions; a lack of understanding of what the project or involvement procedures are about; a perceived lack of skills needed to participate; little connection to the neighbourhood; and character traits such as illiteracy, laziness, indecisiveness, or apathy (Diduck and Sinclair 2002; Chi, Xu, and Xue 2014; Cornwall 2008). In general, studies concur that opponents of a project are more likely to actively participate than project supporters (Mansfield, Van Houten, and Huber 2001; Wright 1993; Hamersma *et al.* 2016). Furthermore, the argument that stronger socio-economic groups (higher incomes, male, higher educated) especially have more available time to invest in public engagement processes has been confirmed (Costa and Kahn 2003 ; Mansfield, Van Houten, and Huber 2001; Grillo *et al.* 2010; Hamersma *et al.* 2016) and are therefore less likely to be excluded from involvement practices. In this study, we analyse motives behind the development of satisfaction with provided involvement activities, while also accounting for a resident's preferred level of involvement.

2.3. *A research model for studying residents' involvement satisfaction*

Figure 1 provides the conceptual framework of our empirical analysis. Following the participation ladder of Arnstein (1969), we have identified a hierarchy of involvement levels from a resident's perspective. Residents could have 'preferred to be involved' on a low, medium, or high level. In our study, low involvement is defined as passively receiving information from the government project team. Medium involvement is defined as actively seeking information. High involvement means having a preference for actively participating in the government planning process. Residents could have had different motivations for (a change in) their preferred involvement levels throughout the planning process (Diduck and Sinclair 2002; Chi, Xu, and Xue 2014; Mansfield, Van Houten, and Huber 2001). Residents who preferred to be involved at higher levels (most of the time) also preferred to be involved at lower levels, but not the other way around.

Contextual factors ←■→ Project team factors

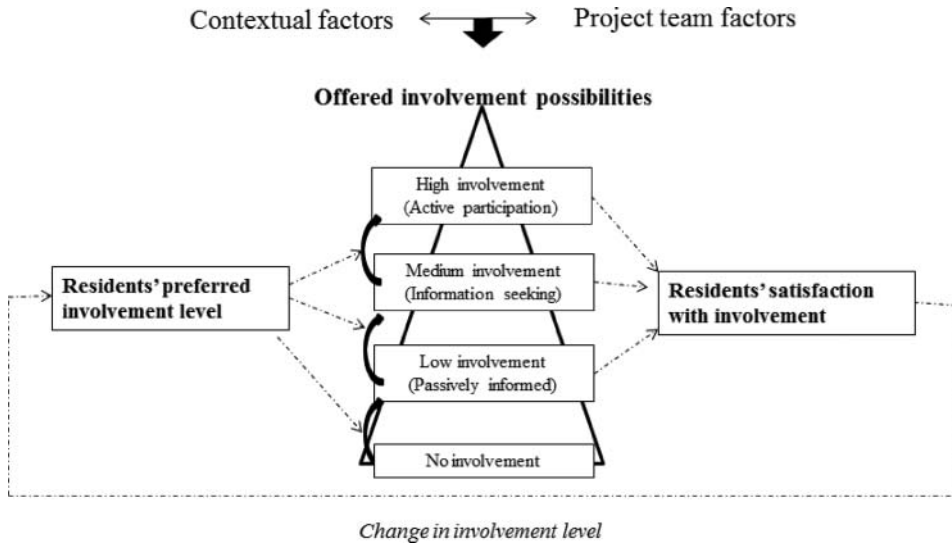**Offered involvement possibilities**

Figure 1. Research model on factors behind the development of a resident's involvement satisfaction.

As a consequence, the group of residents who preferred to be involved at higher levels is comprised by a selection of the people who preferred to be involved at lower levels.

We study the motives behind the development of resident 'satisfaction with involvement' in relation to referred involvement levels during the planning process. This satisfaction could be influenced by the quality of involvement provided, i.e. project team factors (Dietz and Stern 2008; Bickerstaff, Tolley, and Walker 2002), but could also have been influenced by (personal) contextual factors (Rowe and Frewer 2000, 2005; Coglianese 2003; Bailey and Grossardt 2010; Diduck and Sinclair 2002; Hamersma *et al.* 2016). Furthermore, as also shown in Figure 1, (dis)satisfaction with involvement at a certain level could have been the motive for preferring to move up or down the involvement ladder during the planning process.

3. Research design

3.1. *Research context: the Southern Ring Road Groningen redevelopment project*

This study analyses the motivations of residents in the context of Dutch highway planning. In the Netherlands, national highway planning projects are decided by the national government. The responsibility for planning such projects is given to a government project team consisting of representatives of Rijkswaterstaat (the executive agency of the Dutch Ministry of Infrastructure and the Environment), and is sometimes complemented by regional and local governments (Ministry of Infrastructure and the Environment 2014). Conforming with the Aarhus Treaty (1998), project teams are obliged to offer both formal (recorded in law) and informal (additional) options for residents and other stakeholders to get involved in the planning process. Generally speaking, those activities consist of both communication and participation opportunities. Although the possibilities for residents to participate are increasing, the options currently provided are still mainly at the level of public consultation (Rijkswaterstaat 2009).
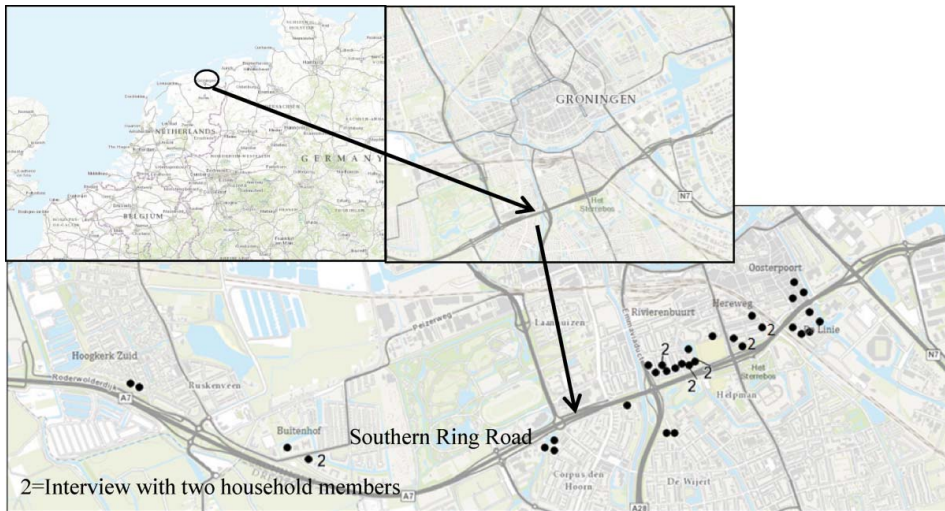
Figure 2.   Map of research area (the respondents' homes are marked with dots).

However, stakeholders opposing a project and who submit a formal reaction could indeed bring a project to court after the final decision ('Tracébesluit') has been taken. Once approved, the execution of highway projects in the Netherlands is given to construction companies selected and supervised by the government project team.

Using the conceptual framework presented in Figure 1, this study traces the development of resident satisfaction with involvement opportunities at different preferred involvement levels in the specific case of the 'Southern Ring Road' project in Groningen, the Netherlands (Figure 2). The Southern Ring Road is an urban highway serving as a connection between the west of the Netherlands and Germany; it crosses several neighbourhoods of the city of Groningen along the way (Hamersma *et al.* 2016). Plans for a large adjustment of the highway and the surrounding area have existed since 2008. The project is intended to improve accessibility, liveability and traffic safety by, among other things, changing connections and traffic directions, removing traffic lights, and by designing a park to cover part of the highway, thereby reconnecting neighbourhoods which were separated by the construction of the urban highway in the 1960s (Southern Ring Road Project 2015). Based on a large questionnaire sent out in the project's 2011 exploratory phase, the study by Hamersma *et al.* (2016) showed mixed reactions to the project in the residential population, with about an even number of people expecting a positive and a negative effect of the project on residential satisfaction at that time. Recently, the final decision ('Tracébesluit') was taken by the Ministry. At the time of this study's fieldwork, in 2014, several stakeholder groups – among them the citizen's group 'Stichting Leefomgeving' – had initiated a court case aiming to permanently halt the project. The Stichting Leefomgeving thinks that the project will result in decreased accessibility and liveability for at least part of the residential neighbourhoods, especially in the Rivierenbuurt and Helpman areas (see Figure 1). The realisation of the project is nevertheless expected between 2017 and 2021.

As mentioned above, and in line with other Dutch infrastructure projects, the responsibility for the project is given to a government project team formed by Rijkswaterstaat, the Province of Groningen and the Municipality of Groningen. During

Table 1. Involvement activities of the Southern Ring Road project team.

Preferred level of involvement (residents' perspective)	Involvement possibilities provided at involvement level
Low involvement (passive information provision)	– Brochures on several moments in the planning process – Information in local media
Medium involvement (activities for active information seeking)	– Project website – Information meetings/markets city broad – Neighbourhood information meetings – Digital newsletter
High involvement (activities for active participation)	– Giving formal reaction at several moments in planning process – Project broad discussion groups – Neighbourhood specific workgroups

the planning process, the project team strived to involve stakeholders in their activities with the aim to "build trust and respect to come to a better plan and to improve decision-making" (see also 'Tracébesluit A7/N7 Zuidelijke Ringweg Groningen fase 2' 2014, 9). In organisational terms, stakeholder involvement has thus far consisted of formal and informal communication and participation activities. We will next briefly discuss the provided involvement activities for residents in relation to the three preferred involvement levels defined in Figure 1.

With regard to low involvement, information was passively provided to residents at different times during the planning process via brochures and local media. For medium involvement activities, the project team provided several options for stakeholders to seek additional information. An interactive website containing information about the content and process of the project was created for this purpose. People could also subscribe to a digital newsletter. Citywide information meetings and, later on, more neighbourhood-specific information meetings were held at several stages of the planning process (Southern Ring Road Project 2015). Finally, in relation to high involvement in the project, residents were given opportunities to participate in both formal and more informal ways. Formally, they could react to the plans in writing at several prescribed points during the planning process (in Dutch: 'Zienswijze'). Whereas, informally, discussion platforms were set up for several groups of stakeholders, and a few working groups were organised at a later date to develop four specific neighbourhood design plans. According to the project team, some changes in the plan design were made as a result of citizen input (Southern Ring Road Project 2015). Table 1 provides an overview of the main involvement activities set out by the project team.

3.2. *Data collection*

We conducted interviews with 38 residents in 32 households living in the vicinity of the planned Southern Ring Road highway adjustment project. Our main selection criterion was to include residents with different involvement preferences and satisfaction with involvement in the highway adjustment planning process. In addition, we aimed for variation with respect to age, household type, house type, home ownership, distance from the highway, and neighbourhood (see Table 2). We recruited respondents in three ways. The majority of residents were recruited via an invitation letter in their letterbox, in which we announced that we would be knocking at their door in a few days time to

Table 2. Descriptives of interviewees.

Nr	Gender category	Age category	Neighbourhood	Living within 50m of highway	Car ownership household	Type of housing	Household type	Home owner	Preferred to be passively involved	Preferred to be medium involved	Preferred to be highly involved	Overall expected influence of project on residential satisfaction
1	Male	60+	Hoogkerk-Zuid	Yes	Yes	Detached house	Couple	Yes	Yes	No	No	Positive
2	Male	60+	Hoogkerk-Zuid	Yes	Yes	Detached house	Couple	Yes	Yes	No	No	Positive
3	Male	40–60	Buitenhof	Yes	Yes	Terraced house	Family	Yes	Yes	Yes	No	Positive
4a*	Male	40–60	Buitenhof	Yes	No	Terraced house	Family	No	Yes	Yes	Yes	Positive
4b*	Female	40–60	Buitenhof	Yes	No	Terraced house	Family	No	Yes	Yes	Yes	Positive
5	Male	20–40	Corpus	Yes	Yes	Apartment (7th floor)	Couple	Yes	Yes	No	No	Positive
6	Male	20–40	Corpus	Yes	Yes	Apartment (6th floor)	Couple	Yes	Yes	No	No	Positive
7	Female	40–60	Corpus	No	No	Apartment (5th floor)	One-person household	No	Yes	No	No	Positive
8	Male	20–40	Wijert	Yes	No	Apartment (3rd floor)	One-person household	Yes	Yes	No	No	Negative
9	Female	20–40	Wijert	Yes	Yes	Apartment (3rd floor)	One-person household	Yes	Yes	Yes	Yes	Negative
10	Male	60+	Wijert	Yes	Yes	Apartment (3rd floor)	One-person household	No	Yes	Yes	Yes	Negative
11	Female	20–40	Rivierenbuurt	Yes	No	Apartment (5th floor)	One-person household	Yes	Yes	No	No	Negative
12	Male	60+	Rivierenbuurt	Yes	Yes	Apartment (6th floor)	Couple	Yes	Yes	Yes	Yes	Negative
13a*	Male	60+	Rivierenbuurt	Yes	No	Apartment (3rd floor)	Couple	No	Yes	Yes	No	Negative
13b*	Female	60+	Rivierenbuurt	Yes	No	Apartment (3rd floor)	Couple	No	Yes	No	No	Negative
14	Female	40–60	Rivierenbuurt	Yes	No	Apartment (3rd floor)	One-person household	No	Yes	Yes	No	Negative
15	Female	60+	Rivierenbuurt	Yes	No	Apartment (3rd floor)	One-person household	No	Yes	Yes	No	Negative
16	Female	20–40	Rivierenbuurt	Yes	Yes	Apartment (ground floor)	Couple	No	Yes	No	No	Positive
17	Female	60+	Rivierenbuurt	Yes	Yes	Semi-detached house	One-person household	Yes	Yes	No	No	Negative
18a*	Male	40–60	Rivierenbuurt	Yes	Yes	Semi-detached house	Family	Yes	Yes	Yes	Yes	Positive
18b*	Female	40–60	Rivierenbuurt	Yes	Yes	Semi-detached house	Family	Yes	Yes	Yes	Yes	Negative
19a*	Male	60+	Rivierenbuurt	Yes	Yes	Semi-detached house	Couple	Yes	Yes	Yes	Yes	Negative
19b*	Female	40–60	Rivierenbuurt	Yes	Yes	Semi-detached house	Couple	Yes	Yes	Yes	Yes	Negative
20	Male	40–60	Rivierenbuurt	No	Yes	Apartment (ground floor)	Couple	Yes	Yes	Yes	No	Negative
21	Male	40–60	Herewegbuurt	Yes	Yes	Terraced house	Family	Yes	Yes	Yes	Yes	Negative
22a*	Male	60+	Herewegbuurt	Yes	Yes	Detached house	Couple	Yes	Yes	Yes	Yes	Negative

(continued)

Table 2. (*Continued*)

Nr	Gender	Age category	Neighbourhood	Living within 50m of highway	Car ownership household	Type of housing	Household type	Home owner	Preferred to be passively involved	Preferred to be medium involved	Preferred to be highly involved	Overall expected influence of project on residential satisfaction
22b*	Female	60+	Herewegbuurt	Yes	Yes	Detached house	Couple	Yes	Yes	Yes	Yes	Negative
23a*	Male	60+	Herewegbuurt	Yes	Yes	Detached house	Couple	Yes	Yes	No	No	Positive
23b*	Female	40–60	Herewegbuurt	Yes	Yes	Detached house	Couple	Yes	Yes	No	No	Positive
24	Female	40–60	Herewegbuurt	No	Yes	Terraced house	One-person household	Yes	Yes	No	No	Positive
25	Male	40–60	Linie	Yes	No	Apartment (2nd floor)	Family	No	Yes	No	No	Negative
26	Male	20–40	Linie	No	Yes	Apartment (3rd floor)	Couple	No	Yes	No	No	Positive
27	Male	20–40	Linie	Yes	Yes	Apartment (ground floor)	Family	No	Yes	No	No	Positive
28	Female	60+	Linie	Yes	Yes	Terraced house	One-person household	No	Yes	Yes	No	Positive
29	Male	60+	Linie	No	Yes	Detached house	Couple	Yes	Yes	Yes	No	Positive
30	Female	20–40	Oosterpoortbuurt	Yes	Yes	Apartment (1st floor)	Family	No	Yes	Yes	Yes	Positive
31	Female	20–40	Oosterpoortbuurt	Yes	Yes	Apartment (1st floor)	One-person household	No	Yes	No	No	Positive
32	Female	40–60	Oosterpoortbuurt	Yes	Yes	Detached house	One-person household	Yes	Yes	Yes	Yes	Positive

*Interview with two household members.

request their participation. A second group was formed by participants from an earlier survey in 2011 (Hamersma *et al.* 2016), in which they indicated their willingness to participate in further research on the same research topic. To ensure sufficient variation, a third group was approached via snowballing, i.e. recommended by other interviewees or by representatives of neighbourhood committees. To better understand the context of interviewees' stories, we also spoke with representatives of the project team, citizen groups and neighbourhood committees.

To abide by ethical considerations we informed all residents about the general purpose of the study, the research team, the handling of data, and the duration of the interview. We assured them that participation was voluntary, we gave them the option to withdraw from the interview at any time and to read the transcripts afterwards, and we requested that they sign a letter of consent (Hamersma *et al.* 2017). Figure 2 gives an overview of the geographical location of our interviewees, and Table 2 provides their background information.

The interviews were conducted in April, May, and June 2015, just after the final decision (In Dutch 'Tracébesluit') on the project by the Minister of Infrastructure and the Environment. Most took place in residents' homes and lasted approximately 45–90 minutes. We used a semi-structured interview design, starting in an open manner by asking residents about their general residential experience and which factors were important in this experience. Next, we discussed the highway adjustment project itself and the residents' involvement in it. We attempted to gain further insights into motivations behind the development of interviewees' preferred level(s) of, and satisfaction with, provided involvement opportunities, by reflecting on their experiences with involvement in the planning process thus far. For example, we asked respondents whether and how they are currently involved, motives for their present level(s) of involvement, and whether their involvement had changed during the planning process, and if so, why. During the interviews we also encountered a few practical issues; for example, although we had a semi-structured interview framework, in practice, topics were often discussed in random order as people began to tell their personal stories and we did not wish to interrupt. Nevertheless, we were able to attend to each of the topics pertinent to our study. In addition, due to residents' memory limitations in general, it was difficult for them to remember all their experiences of involvement in the planning process. Respondents primarily referred to the most recent activities. In response, we sometimes enquired into different activities that had occurred longer ago so as to refresh their memories. Moreover, we could not always be certain whether residents' stories matched the reality of how events took place and how the project team acted. We therefore considered it paramount to talk to residents with different viewpoints about the project but who had had the same involvement activities. Furthermore, in our interpretation, we chose to limit judgement on the actions of the project team and instead to focus on people's reasoning behind their experiences.

The interviews were then transcribed and coded, based on thematic coding, using ATLAS-TI. Thematic coding is a method of organising data based on key themes, concepts, and emergent categories across cases (e.g. Ritchie and Lewis 2003, 220). Respectively, we manually coded: (1) motives given by interviewees for their preferred level of involvement in project team efforts during the planning process; and (2) motives of interviewees which led to their satisfaction with the experience due to the government having provided involvement opportunities. We also coded specific project team-related or contextual factors when they were described by at least two residents as relevant to the understanding of their satisfaction. Key themes were identified based on their relevance

to research objectives, the frequency with which they were mentioned, and the extent to which they resulted in differences between groups of residents (Wakefield *et al.* 2001) and were discussed among the researchers in the team. Opinions of residents were included at every level at which they preferred to be involved.

3.3. Background: variation in interviewee viewpoints about the highway project

The interviewees expressed many different viewpoints towards the highway project. Irrespective of neighbourhood, 10 participants indicated their hope that car accessibility will increase as a result of the project. In regard to liveability impacts, interviewees in the Rivierenbuurt and the Wijert were, on average, somewhat more negative about the development plan than interviewees living in the other neighbourhoods; new highway connections are planned for the abovementioned two neighbourhoods which may increase traffic intensity and noise. Four residents specifically expressed concerns about air pollution as a consequence of increased traffic intensity on the Southern Ring Road. Moreover, four participants mentioned expected difficulties to reach the other side of the urban highway by bike after highway adjustment due to the removal of a bike tunnel. Three people in the Hereweg area voiced their concerns about the closure of an access lane which they often use. All interviewees in the Oosterpoort and Linie areas expressed the hope that the residential situation will improve since the highway will be deepened there and will be partly covered by a green park.

4. Satisfaction with involvement efforts among residents: research findings

In this section, we present our findings in regard to the development of satisfaction with involvement from a resident's perspective. We refer to themes which were deemed important in understanding this development, while also accounting for the different levels of preferred involvement. The defined themes are visualised in Figure 3. Table 3
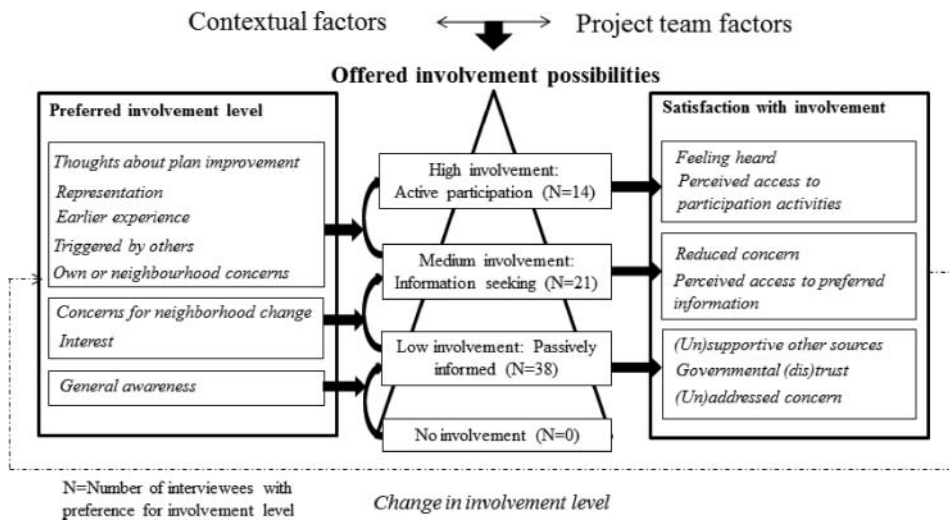

Figure 3. Overview of main factors in the development of residents' satisfaction with involvement efforts.

provides an overview of personal and project-related aspects described by residents as critical to their understanding of their experiences based on the defined themes.

4.1. Low involvement: satisfaction with information efforts

All interviewees indicated to have passively received (some) information from the project team about the planned Southern Ring Road project. They all preferred to be informed about the plans and considered this as a government responsibility (Figure 3, left side). The most important motives given by residents in understanding the development of their satisfaction with passively provided information centred around: The level to which it addressed concern, (dis)trust in the government and (un)supportive other (trusted) sources (Figure 3, right side).

4.1.1. (Un)addressed concerns through information provision

An important factor in understanding the development of satisfaction with passively provided information was the extent to which the information addressed their concerns, i.e. was perceived as sufficient in amount and content. Residents especially indicated that sufficient information about the project planning process, its implications for their daily activities and with regard to impacts on residents' direct neighbourhood on a regular basis, were evaluated positively in this respect (see Table 3 – 'Project team factors').

Residents also gave examples of contextual factors that influenced why their concern was more (or less) easily addressed by the project team information (see Table 3 – 'Contextual factors'). For instance, three interviewees mentioned that, based on the information received, they felt that the project would not change their direct environment in a negative way and, as a result, they thought to have received sufficient information. In another example, an interviewee living in the Oosterpoort area indicated that her concerns were addressed when she read that a park is to be created in her immediate surroundings. Others mentioned that they only expect a small number of changes in their immediate residential environment, which made them more easily satisfied. As one woman commented:

> No, I did not search for more information. Especially because I saw that only little will change in my immediate environment. If I would have lived in the Vondellaan (a street where traffic intensity might change due to the project, see Figure 2), I probably would have searched for more information. (Respondent #7, female, 40–60)

Furthermore, several interviewees stated that information had addressed their concerns, as they see the importance of improving car accessibility as a consequence of the Southern Ring Road project either for their own interests or for the city's economic potential. Two interviewees also reported that their concerns had been easily addressed, as they have plans to move house and may already be gone by the time the project starts. As one man living in a rental home directly facing the Southern Ring Road commented:

> Well, maybe something to take into account is that we thought that, by the time this is all going to happen, we may have already left the area. (Respondent #16, female, 20–40)

A weaker attachment to the neighbourhood and, as a consequence, less interest in what happens in the neighbourhood, was another motive mentioned by interviewees for

Table 3. Project team factors and contextual factors important in discussed themes.

Preferred involvement level	Defined themes for development of satisfaction	Project team factors	Contextual factors
High involvement: active participation	Feeling heard	+Adjust location of meetings to accommodate participant preferences +Feedback on what is and is not included in plans and why −Only changes possible in details of the plan	−Real concerns about the project +Having a representative −Active in participation too late
	Perceived access to participation activities	−Variety in participation possibilities (now mainly informal oral assessment) +Assistance in giving written reaction ('Zienswijze') +'Ease' of participating	−Perceived inability of giving opinion in public
Medium involvement: information seeking	Reduced concern	−Uncertainty among government team +Face-to-face contact with people from project team +Noise simulation	−Concerns about plans −Other priorities
	Perceived access to (additionally) preferred information	+Accessible website +Accessible location information meeting −Information meetings at wrong time −Difficult to get detailed/ sensitive information	
Low involvement: passive information	Supportive other sources		−Good connection with people opposing the project +/−Other local media +Family/friend in municipality/ 'Rijkswaterstaat'
	Trust in government	−Unrealistic pictures +Frequent updates +Information about positive and negative impacts +Information from positive and negative stakeholders −Contradictory information	+/−General (dis)trust in government +/−Previous experience
	Addressed concern	+Clear time schedule +Effects on daily activities addressed +Liveability consequences mentioned	+Expects little change based on information +Expects positive change based on information +Believe in importance of good car infrastructure +Intentions to move +Less attached to neighbourhood +Perceived flexibility of moving elsewhere (Younger age/Rental house) +/−Not interested in topic/other priorities +/−Neighbourhood

concerns to have been easily addressed. A few interviewees, especially younger individuals or renters, indicated that they did not worry much as they are flexible about dealing with change, for example, because of a perceived ease to move elsewhere. Interestingly, two people mentioned during the interview that they felt they should not complain about the amount of government information provided due to their own lack of interest in searching for additional information. As one young woman living directly alongside the Southern Ring Road mentioned:

> Yes, I think I received enough information. If you wanted to have more information you could have gone to an information meeting. But I did not do that because I was not interested enough. So, that was my own responsibility. (Respondent #11, female, 20–40)

Two residents indicated that their concerns were addressed by the project team information for now, as the actual execution of the plan is still some way off and they do not want to be bothered with it yet. A respondent directly alongside the Southern Ring Road highway said:

> Well it is enough for now, as I feel it will still take a long time before the execution will actually start. I feel it is still too far away for me to be interested in it." (Respondent #27, male, 20–40)

Nevertheless, another group of residents who, based on the information, were under the impression that – in their eyes potentially negative – changes are going to take place in their neighbourhood, stated that the information passively received from the government project team was too superficial and as such their concerns were not addressed. They felt that more detailed information on neighbourhood impacts would have been welcome. As one man living directly alongside the Southern Ring Road remarked:

> If you want to have detailed information, you really have to put in effort to get it. It is not in the ordinary brochures that are being distributed. (Respondent #12, male, 60+)

4.1.2.   (Dis)trust in the government

Apart from whether the information sufficiently addressed concerns, another important theme in how residents rate their satisfaction with government information was the overall level of trust in government actions. Some residents mentioned that they could trust the project team and believed them to be capable of the work with the best intentions towards the public, thus increasing residents' sense of satisfaction with the provided information (see Table 3 – 'Contextual factors'). This finding was in direct opposition to another group of interviewees who expressed general distrust with the government. They believed that the government project team had tried to 'sell' their activities to residents without also communicating the possible negative effects. As one woman mentioned:

> It is not that I am not satisfied with the information because of some insufficiency in the topics, but I just do not trust the source of the information, the government. (Respondent #7, female, 40–60)

Trust in information provided by the project team is also influenced by previous experience with infrastructure projects or past government actions. It is worth mentioning

that 10 residents stated that they cannot entirely trust the pictures to signify the future situation as presented in the folders about the project, as they are too optimistic. For example, three residents indicated that, during the previous highway adjustment project in 2008, some nice trees were also in the pictures, however, these trees were not realised in the end. Relating to that, one woman living alongside the Southern Ring Road mentioned:

> Yes, I think there is a chance that those nice things they present now will also not be realised. In the end the things I like a lot will probably be cut because of financial limitations. It is just experience that it works like that. (Respondent #28, female, 60+)

Residents also pointed to disbelief in the information given when they felt that the information was not in line with their perceived actual situation. For example, three residents referred to what they perceived to be unrealistic future noise calculations (generally based on future projections of the traffic situation) behind the information presented by the project team. For example, one woman mentioned that the project team information stated that the calculated noise level around her house in the new situation will be just 0.5 decibel (dB) below the legally allowed limit. She feels this to be so close to the norm that she does not believe it.

> Well, their conclusion was that the future exposure level surrounding our house will be 0.5 decibel below the limit. But then you talk about the highway, and not about the extra connecting road they are also going to construct here. But then they say 'We are not obliged to take further measures because of that.' This just doesn't feel right. (Respondent #19b, female, 40–60)

Residents also gave examples of how their trust in the information grew or decreased during the planning process as a consequence of actions by the project team (see Table 3 – 'Project team factors'). Residents indicated that the project team's effort to provide frequent updates on project developments, to provide information about positive and negative impacts, and to present opinions of both supporters and opponents of the project in their information provision contributes positively to trust. Conversely, residents who experienced contradictions in the provided information expressed lower levels of trust in government during the planning process. As one critical respondent said:

> First, they said that 5,000 cars are going to be passing along the planned new parallel road. Later, they said 10,000. Now, it is 11,000…You do not know what to believe anymore. (Respondent #18a, male, 40–60)

4.1.3.   (Un)supportive other (trusted) sources

Furthermore, residents articulated that the extent to which they trust government information is also influenced by the information they received from other (trusted) information sources. Some residents referred to information sources that have gained their trust; they know someone who works for the (local) government from which they regularly receive information about the project, which also corresponds with information provided by the project team (see Table 3 – 'Contextual factors'). For example, a female respondent living in the Rivierenbuurt area, where considerable changes will take place, mentioned that her son-in-law works for Rijkswaterstaat (one of the parties represented in the project team). He told her about the necessity of the project for greater accessibility of

the city and the region. This increased her trust in government information and her understanding of why the adjustment project is needed.

> At first, I did not really understand why this adjustment is needed because I do not have the impression that there are a lot of traffic jams around here. And I asked my son-in-law who works for Rijkswaterstaat about it. He said, well, they make these plans based on their expectations for the future, towards 2025. So that is why this is needed. (Respondent #15, female, 60+)

However, some residents mentioned other sources that led them to doubt the information provided by the project team. For example, five residents referred to information they had received from action groups against the project which reduced their trust in the government information. This was especially true for people who had close contact with someone in an action group or had concerns about changes in their direct environment based on what they had heard. Several residents remarked that they preferred to receive information from both 'sides' in order to be better equipped to make a personal evaluation of the project plan.

> Well, you have to collect information from different sources, from the opposing groups, and from the project team. Then you should delete the extremes in both, then you are close to the actual situation. Because the opposing group also makes use of things that go too far in my opinion… (Respondent #2, male, 60+)

4.2. Satisfaction with active information seeking

Of the interviewees, 21 preferred to seek additional information during the planning process based on what they had heard about the project. The project team made it possible for residents to find information on the project website, via digital newsletter or by attending information meetings. Most interviewees keen to obtain additional information were driven by a general interest in neighbourhood developments or infrastructure projects, or by concerns still unaddressed based on what they (passively) read or heard about the project. Three older residents who were worried about the impact of the plans on their surroundings noted that they also attended neighbourhood-specific information meetings to discuss their concerns with neighbours. Five interviewees indicated that their search for additional information increased during the process due to new information they had received passively, and which raised their level of interest or concern. For example, two residents referred to a questionnaire about the highway project sent by the local university in 2011[1] which made them realise they should learn more about the project (see Figure 2 – left side). Satisfaction with active information seeking was expressed mostly by the extent to which residents believed they had access to the information they sought, or the extent to which it helped ameliorate their worries (see Figure 2 – right side).

4.2.1. Perceived access to preferred additional information

Of the residents who preferred to be involved in information-seeking activities, several people attributed their satisfaction to ease of access to the additional information they wanted. Most interviewees remarked that it was straightforward to find information on the project website. In addition, interviewees who attended information meetings were generally positive about the locations and times of the information meetings, although

four people mentioned that they would have liked to have gone but had other priorities on those days.

Nevertheless, interviewees remarked that things got increasingly difficult whenever information provided on the website or during information meetings did *not* address their questions. Four residents commented on their difficulty in actually obtaining the preferred information quickly; it is true that more detailed information about aspects of the project would have to be requested formally, which takes time (see Table 3 – 'Project team factors'). This point was especially raised by people with strong concerns about the project (see Table 3 – 'Contextual factors'). As one woman respondent replied:

> Well, if you wanted to have more specific information, you needed a WOB (a legal request to get openness of information from the government). They just do not give you these data. The underlying calculations are not provided, only the end result. And arranging this takes a while… (Respondent #19b, female, 40–60)

4.2.2.   *Reduced levels of concern*

In addition to the benefit of perceived access, residents expressed satisfaction with information seeking by describing how communication options influenced their concerns about the project. For example, two residents who attended information meetings said that they appreciated the opportunity for face-to-face conversations with the people responsible for the project (see Table 3 – 'Project team factors'); this served to increase trust and relieve their unease.

> Well, we had a meeting at a school close to our home, that was good. And they showed the people behind the project, that also helped to create trust I think. (Respondent #18a, male, 40–60)

Furthermore, two residents indicated that the chance to get a sense of what the future noise level will be like using a noise simulator reduced their anxiety about what will actually happen. As one woman said:

> I liked the opportunity to listen to the future noise levels, or this is what so many decibels sound like… (Respondent #4b, female, 40–60)

By contrast, some residents stated that their concerns increased after attending an information meeting during which many questions posed to the representatives of the government project team had remained unanswered. This was partly due to the fact that the representatives were not familiar with all the details regarding the implications of the project for specific neighbourhoods. Moreover, several details about the final project design were not yet decided upon or will be added later by the construction companies responsible for the execution of the project. Residents sometimes wanted to be informed about aspects that the project team itself was not yet sure about. As one man indicated:

> Well, we recently visited an information meeting in which the party Groningen Bereikbaar (the party who will streamline the planning of different projects in the city) was going to explain more about the project. However, this Groningen Bereikbaar left many questions unanswered. A lot of things are still dependent on the contractor. As such a lot is still uncertain. (Respondent #4a, male, 40–60)

4.3. Satisfaction with active participation efforts

Fourteen interviewees preferred to be actively involved in participation activities provided by the project team during the planning process. Interviewees had the opportunity to participate in the general platforms that were organised on a regular basis ('Klankbordgroepen'), in neighbourhood specific discussion meetings ('Werkgroepen'), and/or by submitting a formal reaction ('Zienswijze') to the project. The main difference between those aiming and not aiming for active participation was the level of concern about the plans in relation to one's own personal situation. Most interviewees who preferred to actively participate said that they felt that the plans were going to have a direct, negative impact on their residential satisfaction. However, some respondents participated as a consequence of perceived social cohesion; three people mentioned that they had participated actively in order to represent their neighbourhood; four others indicated that talking with neighbours about the project had stimulated them to voice their opinions together in the hope of avoiding potential negative consequences. But a woman living in the Oosterpoortbuurt area stated that her decision to participate in government activities, as a supporter of the project, was triggered by her neighbour so that she could help counteract the voices of residents who opposed the project. Another interviewee claimed that his motivation for active participation related to his previous experience with highway adjustment projects, and that it was important to voice one's opinion in the early stages in order to avoid problems in later phases. Most residents who preferred to actively participate felt that they had some knowledge or ideas on how to improve the plan (see Figure 3 – left side).

Two main themes were relevant in understanding the development of resident satisfaction with active participation efforts: perceived access to active participation opportunities, and the feeling of being heard (see Figure 3 – right side).

4.3.1. Perceived access to active participation activities

Interviewees referred to their perceived access to participation activities in expressing their satisfaction. Three respondents who aimed to actively participate via submitting a formal reaction ('Zienswijze') had difficulty manually achieving this (see Table 3 – 'Project team factors'). They thought the system was complex and time-consuming and those difficulties made them feel less satisfied with how they had participated. One woman said that she took advantage of the opportunity to give her formal written reaction to the project during one of the organised information markets where the project team had offered assistance. She felt that this was convenient. Nevertheless, since she was not very well-prepared she completed the form too quickly, and as a result did not respond as thoroughly as she would have liked.

> Well, it was convenient that they provided the opportunity to submit your formal reaction to the project during the information meeting. However, as a result, I feel that I did it too quickly and did not really think it through. It was possible to change it again afterwards, but that I felt was rather complex… (Respondent #4b, female, 40–60)

In addition, three (especially female) interviewees thought that the provided informal opportunity to participate in discussion meetings was not attractive, as they preferred not to give their opinions in public (see Table 3 – 'Contextual factors'). Rather, they indicated their willingness to participate and give their reactions in a one-to-one setting or via a more anonymous medium such as a questionnaire. For example, one woman stated:

I do not like to participate in discussion meetings, as they are time-consuming and do not feel convenient. However, I would have been willing to participate, for example, by filling in a questionnaire which doesn't cost too much time. (Respondent #11, female, 20–40)

4.3.2. Feeling heard

Finally, interviewees expressed higher satisfaction with active participation when they felt that the project team did their best to adjust the plans or to thoroughly explain why it was not possible to incorporate their views in the plan. For example, one woman commented that the project team was willing to change the location of the meetings to a place that better suited the neighbourhood residents (see Table 3 – 'Project team factors').

Well, the meetings were at the viaduct at first. And I asked them whether it was possible to organise the meetings in the small building at the playground for the next time, as that is more easily accessible for us. They thought it was a good idea and so it happened. (Respondent #28, female, 60+)

Interviewees also gave examples of things they felt the project team had changed in the project design based on their views, or otherwise explained why things had not been changed. However, in general, residents thought that the number of changes actually made based on their input during the planning process was limited or small (see Table 3 – 'Project team factors'). One woman, for example, indicated that, as a participant of the regular discussion meetings, she had made several suggestions for improving the design of the park to be constructed to cover the highway. However, she did not feel that the project team really used her ideas, and she attributed this outcome to the lack of financial options for really investing in the liveability of the city.

Together with some neighbours, we organised ourselves as supporters of the plan(s). We came up with ideas to invest even more in the liveability of the city. However, they give you the impression that they are listening, but in the end, you find out that almost nothing is actually used. It is put in a book with an overview which is sent to you and that is it. You can read that (haha) and throw it away. (Respondent #30, female, 20–40)

We should mention that emotion played a role in how people spoke about their feeling of having influence (see Table 3 – 'Contextual factors'). People who feel that the plans will negatively impact on their immediate surroundings were more critical about their feeling of having influence. In relation to the feeling of influence, one man mentioned that he was passively involved at first, and only after a while he realised that something negative was likely going to happen due to the plan, and that action was needed. He felt disappointed about his lack of influence on the plans, but also noticed that he might have been sleeping through earlier phases of the project in which more things would still have been possible.

I have already known about the project for a long time, but it is getting clearer and clearer how the mechanisms work. In the beginning, I was quite happy to receive a brochure with some information about what was going to happen. But after some time, I realised that the brochure only mentioned positive things, and I thought, this cannot be true. Then I heard from someone I knew that he could hardly sleep because of the project. My eyes were opened too late. (Respondent #10, male, 60+)

Furthermore, some active residents believed that they had more influence on the project because their neighbourhood has an active front man with the right contacts. As one man living in a neighbourhood with good neighbourhood representatives commented:

> As a neighbourhood, we have an active frontman, which is great. All council members know him. They do not dislike him, but are also not really happy about him. He is not negative, but he does not give up. You need people like him to get things done. (Respondent #3, male, 40–60)

Finally, some residents remarked that their dissatisfaction with the participation options provided by the project team motivated them to change their type of involvement. This was especially the case for residents who were highly concerned about the plans. Three such residents indicated that they decided to be less actively involved in the project during the planning process in order to avoid too much stress. Three other interviewees mentioned that they felt they had to find other ways to express their dissatisfaction with fundamental aspects of the project process. They decided to join a citizen group to fight the project by providing information to residents, trying to influence politicians, and formally fighting the project in court. The feeling of dissatisfaction had motivated a search for other types of involvement outside the regularly provided activities.

5.   Discussion

The results of our study show that, in understanding the development of a resident's satisfaction with provided involvement options, both the quality of the provided activities, as well as (personal) contextual factors, are important. Let us next discuss the main research findings in relation to existing theory.

Satisfaction with involvement seemed to be influenced by the quality of the involvement activities provided by the project team. In describing their passive information satisfaction, residents referred to the extent to which government information was able to address concerns (stimulated by providing sufficient information about the planning of the project, impacts on daily activities and on their immediate surroundings), and was trustworthy (by giving frequent updates, providing information on positive as well as negative aspects of the plan, and sending a consistent message). Both aspects are also addressed in the literature as essential requirements for good communication (Dietz and Stern 2008; Frewer 2004). With regard to information-seeking activities, and in line with the literature (Pinto-Correia, Gustavsson, and Pirnat 2006), residents stressed the importance of options for interactive communication with project team members during information meetings for reducing concerns and getting answers to their questions about future changes. This latter point challenges project teams in highway planning in the Netherlands (and abroad) because exact details with regard to end result are often not yet clear in phases prior to actual project execution. In addition, the final design is partly decided by the construction companies responsible for the actual build. Furthermore, residents referred to perceived access to information seeking and participation options when describing their satisfaction, by pointing to adequate information channels and (lack of) variation in participation activities, thereby stressing the importance of inclusivity in involvement (Bickerstaff, Tolley, and Walker 2002). With regard to information seeking, residents also mentioned the perceived access to detailed or sensitive information. The latter indicates the importance of transparency, as is also emphasised in the literature (Welch 2012; Grimmelikhuijsen 2012). Furthermore, for those who preferred active participation, in accordance with the literature (Arnstein 1969; Luyet *et al*. 2012; Quick, Narváez, and Saunoi-Sandgren 2014) the level of perceived input in the project appeared to be a main driver. The number of changes based on residents' views and proper explanations of why residents' views were (not) incorporated

in the plan were mentioned as important to active participation satisfaction. Interestingly, although residents provided examples of things that were changed in the project, both supporters and opponents of the project felt that the extent to which they were really listened to could be improved. This indicates the need to generate sufficient dialogue with stakeholders in highway planning processes (Arnstein 1969; Innes and Booher 2004; Henningsson *et al.* 2015). Nevertheless, this is challenging as projects often have a narrow project scope with limited time and budget (Crane and Livesey 2003; Leendertse *et al.* 2015).

In the meantime, the results of our study show that (personal) contextual factors also influence resident satisfaction in terms of degree of involvement. For example, residents described how factors, such as feeling less harm due to being farther away from the project, lack of interest in neighbourhood developments, and intentions to move house meant that their concerns were more easily addressed. Furthermore, residents mentioned that previous experience with government actions and other (trusted) information sources in their personal environment had influenced their level of trust in the information provided by the project team; this confirms studies in other (NIMBY) research contexts, which indicate that distrust is a factor in scepticism against efforts to get involved (Welch, Hinnant, and Moon 2005 ; Schively 2007). Furthermore, the present analysis indicates that the level of concern about plans and the extent to which residents feel they have good neighbourhood representatives with the right contacts to actually influence the project, were important in how active participation satisfaction was expressed. Such contextual factors could also be considered when examining how residents' evaluations of provided government involvement efforts takes place.

In addition, our results provided insight into motivations behind the variety of involvement preferences of residents during the planning process (Figure 2 – left side). Partly in line with the literature in other research contexts (Diduck and Sinclair 2002; Mansfield, Van Houten, and Huber 2001), we can observe that residents' motivations for higher levels of involvement correspond with aspects such as high concerns, interest in the neighbourhood, social cohesion, previous experience, sufficient time, perceived skills, and ideas about city improvement. Residents also outlined situations where their interests and concerns and, as such, their enthusiasm for gaining more information or participation, had changed during the planning process through the additional information they received. This factor helps to explain why people may often become active too late in the planning process when the options to influence change in the plan become limited (Leach, Pelkey, and Sabatier 2002; Henningsson *et al.* 2015). Furthermore, although some residents indicated that their (dis)satisfaction affected their involvement preferences, residents did not always aim for higher participation when they were dissatisfied with lower involvement options. In that way, a lack of preference for higher involvement in the planning process could also be a barrier to the development of satisfaction.

Despite the insights gleaned from our study here, several questions remain for future research. First, whereas this study has described motivations behind the satisfaction gained from involvement at different preferred levels, additional research may focus on one specific level of involvement and inquire into people's experiences with certain brochures or involvement in specific types of participation activities. This could yield a more detailed understanding of involvement activities preferred and needed by different groups of people. Second, to improve the generalisation of our findings, it is worthwhile to study the motivations of residents in other communities or projects in order to enrich insights into motives behind the evaluation of project involvement activities in different contexts. Third, it may be fruitful to quantitatively study how the factors specified in this

analysis relate to involvement satisfaction, or how specific types of involvement activities relate to people's acceptance of highway projects in different phases of the planning process.

The findings here also bring to light several recommendations for highway infrastructure planning. For example, the importance of (personal) contextual aspects such as previous experience with government actions in a resident's evaluation of involvement options imply that government project teams should be aware that the impact of their activities goes far beyond their own project scope (Kasperson, Golding, and Tuler 1992). This also means that project teams have to deal with the legacy and actions of previous projects that have taken place in residential areas where they are once again operating. The awareness of the interaction between projects and their broader environment (Arts, Hanekamp, and Dijkstra 2014) is essential to the acceptance of projects over the longer term. Our findings also indicate that motivations, such as living far enough away from the project, benefitting more from infrastructure investment, and feeling less attachment to the neighbourhood – play a role in more rapid information satisfaction. It might therefore be worthwhile to distinguish between groups with different involvement needs so as to make involvement activities more effective. In addition, the present analysis demonstrated the importance of a good-quality involvement process with sufficient levels of communication, inclusivity, transparency, and active participation in creating satisfaction. However, those aspects are not straightforward in highway planning processes in which residents have different interests, complete information is not always readily available, different national and local interests have to be balanced, and project scopes are tight. Nevertheless, based on the stories of residents, we can offer some guidelines. For example, providing a variety of communication and participation options to residents in both oral and written form could increase inclusivity in involvement. Furthermore, being accessible to residents with questions or concerns, being knowledgeable on the implications for the broader community, and maintaining good contact with key neighbourhood representatives could help to improve communication. Cooperating with local municipalities could also be beneficial in this respect. In addition, proper internal communication; putting out a consistent message from different representatives of the project is likely to forge trust among residents. Transparency could be stimulated by clearly articulating why decisions are taken and why certain information cannot be provided, or how information should be interpreted. Finally, when people are asked to participate, there should be sufficient space for taking in their views; early involvement in plans is therefore essential (Elverding Committee 2008; Henningsson *et al.* 2015). The implication here is that participation activities should focus on the moments when residents can actually voice their views and also recognise when their (residents') views have been put into the plan. Meanwhile, it is worthwhile to examine ways in which the project scope can be extended to provide greater latitude for incorporating resident viewpoints. Quantitative assessment tools to gain insights into stakeholder views (e.g. residents) as found in De Luca (2014) and Stolp *et al.* (2002) may also be fruitful in that respect. We think that, in this way, greater acceptance of highway infrastructure projects may be established.

6.   Conclusion

Although many studies have analysed the characteristics of good quality involvement processes, there is much to be learned about how residents motivate their sense of

satisfaction through the options of getting involved during a planning process, while also accounting for personal contextual factors. The present article has aimed to contribute to existing knowledge by having studied those motivations in the context of a highway infrastructure planning process, through interviewing residents about their involvement in the large adjustment project planned for the urban highway 'Southern Ring Road' in the city of Groningen, the Netherlands.

We found that resident satisfaction with passively provided information relates to the extent to which it addressed concerns, but is also influenced by trust in government and other supportive (trusted) sources. In the case of the search for additional information, satisfaction was expressed by the perceived access to information-seeking options and the extent to which those activities reduced anxiety. For those who preferred to actively participate, the perceived access to active participation options and a sense of being heard were integral to the development of satisfaction with involvement opportunities. Our qualitative analysis contributes to the existing literature by showing how resident satisfaction with government involvement efforts develops in the interaction between the quality of the options given and contextual factors. The insights from this study may be used to better fit involvement activities to the preferences of different groups of residents, with the broader aim of increasing residents' acceptance of highway projects.

Acknowledgements

Note

1. The questionnaire was sent to several residents in the vicinity of the highway in 2011 as part of the same research project. Some of the interviewees were recruited as a result of their participation in the questionnaire.

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Disclaimer

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