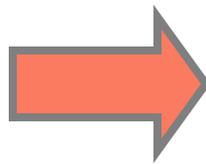


2015

Living near highways:
plans for highway adjustment projects
and residential satisfaction
A case study: Knooppunt Joure



Beitske Tijmstra – S2070839

University of Groningen

Faculty of Spatial Sciences

Master Environmental and Infrastructure Planning

Supervisors: Marije Hamersma & Jos Arts

20-8-2015

Preface

This master thesis – ‘Living near highways: plans for highway adjustment projects and residential satisfaction’ – is the final part of my master Environmental and Infrastructure Planning at the University of Groningen. This research is conducted because I have an interest in infrastructure projects. An infrastructure project is always aiming to improve the accessibility and traffic flow. Such an improvement should have benefits for everyone. Still, it may be that not everyone is satisfied with such a project, consider for example the concept NIMBY which describes the negative reactions against various locally unwelcome developments. I think it is interesting to examine to what extent an infrastructure project has an influence on the residential satisfaction of citizens which live near this project. The choice to carry out this research on the basis of the case ‘Knooppunt Joure’ was easy to make. This is because I have lived for more than twenty years in Haskerhorne. This is a small town near the roundabout of Joure. I often make use of the roundabout and therefore I know what problems the roundabout brings with it. Thereby, I also experience these problems when I go by bus from Groningen to my hometown Lemmer. During peak hours, the bus trip takes at least fifteen minutes longer. This is due to the traffic jams that occur on the roundabout. The problem in the case of this bus trip is that the bus must leave the roundabout to reach the bus stop in Joure. Thereafter, the bus has to ride again on the roundabout to continue the trip to Lemmer. This is a problem that daily happens during peak hours and it is really annoying. Because I have a lot of experiences with the roundabout of Joure, I made the choice to use this case for my thesis. According to this thesis, I hope to give the reader understanding in what effect highways and plans for highway adjustment projects have on residential satisfaction. In addition, I also hope that the perceptions of the residents with respect to the project will be included in the continuation of the project.

In this preface I would also like to take the opportunity to express my thanks to a number of people which have contributed to the realization of this thesis. First, I want to thank my mentor Marije Hamersma. Thank you for the time you have taken, for the useful comments and feedback and for the pleasant conversations. I also want to thank all the respondents. Both the stakeholder manager and the communication officer of the project office and the twelve residents. You have all provided me with interesting and useful information!

Beitske Tijmstra
Lemmer, August 2015

Abstract

There are many people that live near highways. All these people have a specific relation to this highway and specific perceptions of the highway. But what will happen with this relation and perception when a highway plan proposal is announced? It is interesting to investigate how the perception of the highway changes when a highway plan proposal is announced, because there is hardly specific information about it. Therefore, this research is about the residential satisfaction of citizens who live near a highway. Research has been done to investigate to what extent highways and plans for highway adjustment projects have an influence on residential satisfaction. To come to an answer, a set of research questions are devised. The research questions are answered on the basis of literature review, a case study and in-depth interviews. Based on literature review the concepts residential satisfaction, NIMBY and citizen participation are discussed. On the basis of a case study – namely Knooppunt Joure – it is investigated to what extent residents have received information about the project and whether they have been actively involved in the project. Based on this case, both the stakeholder manager and communication officer of the project are interviewed and also twelve residents who live within one kilometer of the junction.

Results from this research are that the residents are hardly aware of the negative and positive externalities of the highway. Accessibility, noise and traffic jams are mentioned as externalities of the highway, but the residents do not really dwell upon these externalities. Therefore, the highway has no influence on the residential satisfaction. In addition, the highway adjustment project has also no impact on the residential satisfaction. It turns out that the received information is sufficient and good and that it has no further effect on the residential satisfaction. This applies also to whether the residents have been actively involved. Despite the majority of the respondents have not been actively involved, this has no impact on the residential satisfaction. Therewith, it can be concluded that in this case the highway and the plans in order to adapt this highway hardly affect the residential satisfaction.

It is interesting to do further research in future to see what effect the new situation has on the residential satisfaction. An infrastructure project is always aiming to improve the accessibility and traffic flow. The question remains, will this improvement also contribute to the residential satisfaction? This can also be examined on the basis of in-depth interviews and could then be compared to the results of this study.

Keywords: highways; infrastructure; residential satisfaction; plans for highway adjustments projects; provision of information; citizen participation; positive and negative externalities; NIMBY

List of tables and figures

Figure 1 – <i>conceptual framework 'residential satisfaction'</i>	- page 12
Table 1 – <i>examples of dwelling characteristics</i>	- page 13
Figure 2 – <i>the ladder of citizen participation</i>	- page 16
Figure 3 – <i>overall conceptual framework</i>	- page 18
Table 2 – <i>a participant map of research ethics</i>	- page 22
Figure 4 – <i>stakeholders project Joure</i>	- page 27
Map 1 – <i>residential areas of the respondents</i>	- page 32
Table 3 – <i>personal characteristics of the respondents</i>	- page 33
Table 4 – <i>overview respondents who have been actively involved/ want to be actively involved in future</i>	- page 47

List of abbreviations

HBO – in Dutch: Hoger Beroepsonderwijs
Higher professional education – higher education;
An education in the Netherlands

LBO – in Dutch: Lager Beroepsonderwijs
Lower profession education - vocational education;
A former education in the Netherlands

LHNO – in Dutch: Lager Huishoud- en Nijverheidsonderwijs
Lower household and industrial education;
A former education in the Netherlands

MBO – in Dutch: Middelbaar Beroepsonderwijs
Secondary vocational education;
An education in the Netherlands

MULO – in Dutch: Meer Uitgebreid Lager Onderwijs
More extensive primary education;
A former education in the Netherlands

MER – in Dutch: Milieueffectrapportage
A report which describes the environmental consequences of a decision;
This report is issued before the decision is being made

NIMBY – Not In My Back Yard
Is a concept which indicates that many people want to use public services, but do not want to experience the nuisance

OTB – in Dutch: Ontwerp-Tracébesluit
It contains the precise location of the project/route and integration

PABO – in Dutch: Pedagogische Academie voor het Basisonderwijs
Pedagogic academy education;
An education in the Netherlands

RSP – in Dutch: Regiospecifiek Pakket
Money for the development of the economy and the accessibility of the north

RWS – in Dutch: Rijkswaterstaat
Is part of the Dutch Ministry of Infrastructure and the Environment;
Its role is the practical execution of public works, such as infrastructure

TB – in Dutch: Tracébesluit
One can submit views on the OTB an these views will be taken into account;
The OTB will be more optimized in the final decision, namely the TB

Table of contents

Chapter 1 - Introduction	7
1.1 Motivation	7
1.2 Research objective and research questions	8
1.3 Reading guide	9
Chapter 2 - Theoretical framework	11
2.1 Residential satisfaction	11
2.1.1 <i>Personal characteristics</i>	11
2.1.2 <i>Dwelling characteristics</i>	12
2.1.3 <i>Neighborhood factors</i>	13
2.2 Positive and negative externalities of road infrastructure	13
2.3 NIMBY	14
2.4 Citizen participation	15
2.5 Conceptual framework	17
Chapter 3 – Research design	19
3.1 Case selection	19
3.2 Data collection	19
3.3 Ethical issues	21
Results part I	23
Chapter 4 – Background information Knooppunt Joure	24
4.1 The Dutch spatial planning system	24
4.2 The project	25
4.3 Funding	25
4.4 Different phases of the project	25
4.5 Stakeholders	26
4.6 Nuisance	27
Chapter 5 – Provision of information and involvement of residents	28
5.1 Provision of information	28
5.1.1 <i>Provision of information in each phase</i>	28
5.1.2 <i>Purpose of information</i>	28
5.1.3 <i>Procedures</i>	29
5.2 Involvement of residents	29
5.2.1 <i>Positive feedback</i>	30

Results part II	31
Chapter 6 – General information residents	32
6.1 General characteristics respondents.....	32
6.2 Residential areas respondents	32
Chapter 7 – Residential satisfaction	34
7.1 Residential satisfaction and factors behind it	34
7.2 The highway and residential satisfaction	36
7.2.1 <i>The highway and the choice of housing</i>	36
7.2.2 <i>Advantages and disadvantages highway</i>	37
7.2.3 <i>Impact of the highway on residential satisfaction</i>	38
7.3 Traffic jams and residential satisfaction.....	39
7.3.1 <i>Experiences traffic jams</i>	40
7.3.2 <i>The impact of traffic jams on residential satisfaction</i>	41
Chapter 8 – The infrastructure project and residential satisfaction	42
8.1 The project	42
8.2 Provision of information.....	43
8.3 Involvement of residents.....	46
Chapter 9 – Concluding remarks	50
9.1 Conclusion	50
9.2 Discussion	51
9.3 Recommendations.....	53
9.4 Reflection.....	54
References	56
Attachments	58
Attachment I: letter/invitation interview.....	58
Attachment II: interview guide.....	59
Attachment III: codebook.....	65

Chapter 1 - Introduction

In this chapter the motivation to the topic of this master thesis is described. Subsequently the relevance of the topic is discussed by providing a problem statement and a research goal. Thereafter, the research objective and the research questions are presented. Finally, the chapter ends with a reader guide which describes what the reader can expect in the following chapters.

1.1 Motivation

Roads and highways in and around cities have significant impacts on human activity and quality of life that bring both positive and negative effects (Seo et al., 2014). Also according Hamersma et al. (2014) a road brings both positive and negative consequences with it. Some examples of positive effects are that a road brings accessibility and economic growth. Thus, a road can be associated with development and progress of areas. At the same time, negative relations with the road have increased as well due to increasing car mobility (Hamersma et al., 2014). During the second half of the 20th century Western countries experienced large-scale mobility growth. This growth was influenced by economic prosperity and societal developments. As a result, travel patterns changed and car ownership increased vastly (Banister, 2002; Mom & Filarski, 2008). In the Netherlands – in the period after 1975 – personal mobility kept growing. Between the years 1970 and 2000, the number of kilometers travelled doubled in the Netherlands (Heeres et al., 2012). During the 1980s and the 1990s the growth was at its highest. Between the years 2000 and 2012, the number of kilometers travelled increased less rapidly than during the 1980s and the 1990s. According to KiM (2013) there is a stabilization of the use of cars since 2005. MNP et al. (2006) state that a continuation of car mobility growth is expected for the period to 2040. However, this growth will be at a lower rate due to demographic developments. Even though the stabilization of car use will continue, the use of cars is still increasing. This growth of car use will have an impact on the capacity of roads. It can be said that when there are more cars on the road, the greater the likelihood traffic jams will occur. Nowadays, thousands of people are everyday stuck in kilometers long traffic jams on highways in the Netherlands. Most likely, these kilometers of traffic jams will continue to increase as car use also increases. To tackle the problem of congestion, investments are made to build new roads and improve current roads infrastructure (Hamersma et al., 2014). Furthermore, road infrastructure is associated with other negative externalities. Examples of negative externalities are noise, air pollution and accompanying health problems (Généreux et al., 2007). These negative externalities have led to opposition against road infrastructure growth (Arts, 1998).

These both externalities might influence people's choice to live near a highway or to live further away from a highway. Theoretically, residents living near roads and highways benefit the most from positive externalities. This refers to the accessibility gains that residents living near roads and highways experience (Hamersma et al., 2014). Giuliano (1989) states that in general the importance of accessibility in location choices seems to have decreased. However, according to Tillema et al. (2010), there are still specific groups of people who place great value on short travel time and low costs that determines their choice of location. Residents living near roads and highways do not only experience positive externalities, but are also confronted with negative externalities. Bateman et al. (2001) state that negative externalities are very important at the local level because these externalities are potentially contributing to a reduction in local environmental quality.

Both positive and negative externalities related to the road, could affect the choices people make to live in a certain place. Despite the negative externalities there are many people that live near highways. All these people have a specific relation to this highway and specific perceptions of the highway. But what will happen with this relation and this perception when a highway plan proposal is announced? Will the perception of the highway remain the same or will it change? It is interesting to investigate how the perception of the highway changes when a highway plan proposal is announced, because there is hardly specific information about it. The information that will be gained can contribute to better understanding in how and why people react in a specific way when plans to alter a highway are announced by the Rijkswaterstaat. Thereby, perhaps much can be learned from the results. Think of – in a case when citizens did not participate in the planning project – how citizens can be better involved in the planning project. Or how the citizens can be better provided with information. These are some examples. It remains to be seen whether these examples are true. The lessons learned may be able to contribute to a better coordination between the project and the citizens.

1.2 Research objective and research questions

For this research the perceptions of people that live close to highways has been studied. The aim of this research is to gain insight in to what extent the perception of the highway changes when a highway plan proposal is announced. In other words, to gain insight into the extent to which highways and plans for highway adjustment projects influence residential satisfaction. Research is done on the basis of literature and qualitative methods, and also on the basis of a case study. In depth-interviews were conducted to better understand the factors that drive people's perceptions and acceptance of plans. The information that has been achieved can contribute to better understanding in how and why people react in a specific way when plans to alter a highway are announced by the Rijkswaterstaat.

To get an answer to how perceptions of the highway changes when a highway plan proposal is announced the following main question and sub-questions have been devised.

Main question:

How do highways and plans for highway adjustments projects influence residential satisfaction?

Sub-questions:

1. What is residential satisfaction?
2. What factors affect the residential satisfaction of people living near highways?
3. How are citizens involved in contemporary highway adjustment projects?
4. To what extent do the citizens receive information about the highway adjustment project and how do the residents reflect on this?
5. To what extent are the citizens actively involved in the highway adjustment project and how do the residents reflect on this?

The first sub-question has been answered on the basis of literature review. On the basis of literature the definition *residential satisfaction* has been explained. It is important to study the concept of residential satisfaction because it is central to this research. On the basis of residential satisfaction the impact of highways and plans for highway adjustments projects has been examined. Also the factors that influence residential satisfaction have been explained on the basis of literature. This brings us to

the second sub-question. The factors that affect residential satisfaction have not only been examined on the basis of literature, but also on the basis of empirical research in order to determine whether the factors that are described in the literature also are mentioned among the residents. Empirical research has been done on the basis of in-depth interviews in order to understand what factors affect the residential satisfaction of people living near highways. The gained information of the in-depth interviews has been compared to what is described in the literature. Then, the third sub-question has been answered. First on the basis of literature review, namely on the basis of the concept *citizen participation*. This concept is discussed to see whether the case that has been studied – the project 'Knooppunt Joure' – uses citizen participation in practice. Therefore the question has also been answered on the basis of the case and an in-depth interview with the stakeholder manager and communication officer of the project. It is examined to what extent the project office involves the residents in the project. Subsequently, the sub-questions four and five have been answered. This sub-questions relate to the case study. The case for this research is 'Knooppunt Joure', a traffic hub located at the junction of the highways A6 and A7. The junction is designed as a roundabout, but it will be adjusted. Therefore, it is a good example of a highway adjustment project. In addition, the infrastructure project is still in its preparatory phase and this gave the opportunity to explore how plans for this adjustment project influence the residential satisfaction. Thereby, daily traffic jams occur on and around the junction. This gave the possibility to investigate whether these traffic jams have an influence on the residential satisfaction. Also, based on this infrastructure project it is investigated - on the basis of in-depth interviews with twelve residents - to what extent the citizens have received information about the project and to what extent they have been actively involved in the project. Ultimately, it is examined whether or not receiving information (described as information provision) and whether or not have been actively involved (described as citizen participation) have an influence on the current residential satisfaction. Information provision and citizen participation may have an influence on the current residential satisfaction of the residents. This is explained on the basis of the following assumptions. If information is provided, it may have a positive influence on the residential satisfaction. But in a case when no information is provided, residents may have the feeling that they are not involved in the project and therefore the residential satisfaction may decrease. Also, the participation of citizens may have an influence on the residential satisfaction. When residents have had a lot of input on the project, this may have a positive influence on the residential satisfaction because the residents are heard. If the residents are not heard at all, it may have a negative influence on the residential satisfaction. Answering all sub-questions eventually led to answer the main question.

1.3 Reading guide

The outline of the thesis is as follows: in chapter 2 on the basis of the theoretical framework the relevant theories and concepts are described. Section 2.1 discusses the definition of residential satisfaction and the different factors that have an influence on the residential satisfaction. Section 2.2 shows the positive and negative externalities of a highway. Then, in section 2.3 the focus is on the concept NIMBY. In section 2.4 the concept citizen participation is described as well as the advantages and disadvantages of the concept, and the ladder of Arnstein. Section 2.5 discusses the conceptual framework of this research. In chapter 3 the methodology of the research is represented. Section 3.1 shows the case selection and information about the project 'Knooppunt Joure'. In section 3.2 the data collection is discussed. On the basis of in-depth interviews data is collected. The advantages and disadvantages of in-depth interviews are represented. In section 3.3 the ethical issues are shown.

These issues must be taken into account before and during the interviews. In part I information is described which is obtained by an interview with the stakeholder manager and the communication officer. In chapter 4 the Dutch spatial planning system (based on literature) and the background information of the case is discussed. The following aspects are covered in this chapter: the funding of the project, the different phases of the project and the different stakeholders which have an interest in the project. Chapter 5 deals with information provision and the involvement of residents in the project. On the basis of information from the stakeholder manager and communication officer it is described how the project office deals with the provision of information and how residents are involved in the project. In part II information is described which is obtained by interviews with twelve respondents. In chapter 6 the general information of the respondents are represented. The personal characteristics are discussed and the residential locations in relation to the roundabout. Chapter 7 focuses on the residential satisfaction. In section 7.1 it is shown which factors contribute to the residential satisfaction. Section 7.2 discusses whether the highway has an influence on the residential satisfaction. In section 7.3 it is described whether traffic jams have an influence on the residential satisfaction. Chapter 8 focuses on the infrastructure project regarding to residential satisfaction. In section 8.1 it is described how the residents think about the project in general. Then, section 8.2 shows to what extent the residents have received information about the project and how they reflect on this. In section 8.3 it is described to what extent the residents have been actively involved in the project and how they reflect on this. Then, described in chapter 9 the concluding remarks, including a conclusion, discussion and recommendation. Subsequently a list of references is represented. It contains all sources that were used for this study. Finally, this thesis ends with the attachments: invitation letter for interview, interview guide and code book.

Chapter 2 - Theoretical framework

Chapter two contains the theoretical framework of this thesis. In section 2.1 the definition of residential satisfaction is described. Also the three groups with regard to factors influencing satisfaction will be described. It is relevant for the research to study the concept of residential satisfaction because it is the basis of the research. On the basis of residential satisfaction the impact of plans for highway adjustments projects are examined. Section 2.2 discusses the positive and negative externalities of road infrastructure. In section 2.3 the NIMBY project and how it affects the planning project is described. Then, in section 2.4 citizen participation is described. The section shows that nowadays the government does not make choices on their own. There are more actors and together choices are being made. The focus here is on the citizens. It is examined to what extent citizens can affect a planning project. The advantages and disadvantages of citizen participation are described. Finally, section 2.5 shows the conceptual framework of this research. It is described how the conceptual framework fits together.

2.1 Residential satisfaction

Residential satisfaction can be seen as a complex and multidimensional concept that is described in many different ways. In general, the concept residential satisfaction is analyzed by assessing satisfaction with the dwelling and satisfaction with the neighborhood (Buys & Miller, 2012). According Hamersma et al. (2013), residential satisfaction can be described as a resident who is satisfied with both the neighborhood and the dwelling. Kroesen et al. (2010) state that the focus can be on housing and neighborhood separately, but can also involve both. According to Buys & Miller (2012) three groups can be distinguished with regard to factors influencing satisfaction: personal characteristics, characteristics of the dwelling and neighborhood factors. These are objective factors, shown in figure 1 (next page). In addition to objective factors, subjective factors also play an important role, that is to say the perceptions and attitudes that people attach to attributes, in explaining differences between people (Kroesen et al., 2010).

2.1.1 Personal characteristics

Some examples of personal characteristics are age, gender, household income, highest level of education, marital status, occupation and ownership type (Buys & Miller, 2012). Lu (1999) states that residential satisfaction seems to increase when also the personal characteristics income, education level and age increase. Hamersma et al. (2013) state that the first two probably have to do with affordability which increases freedom in making residential choice, while the latter might relate to place attachment.

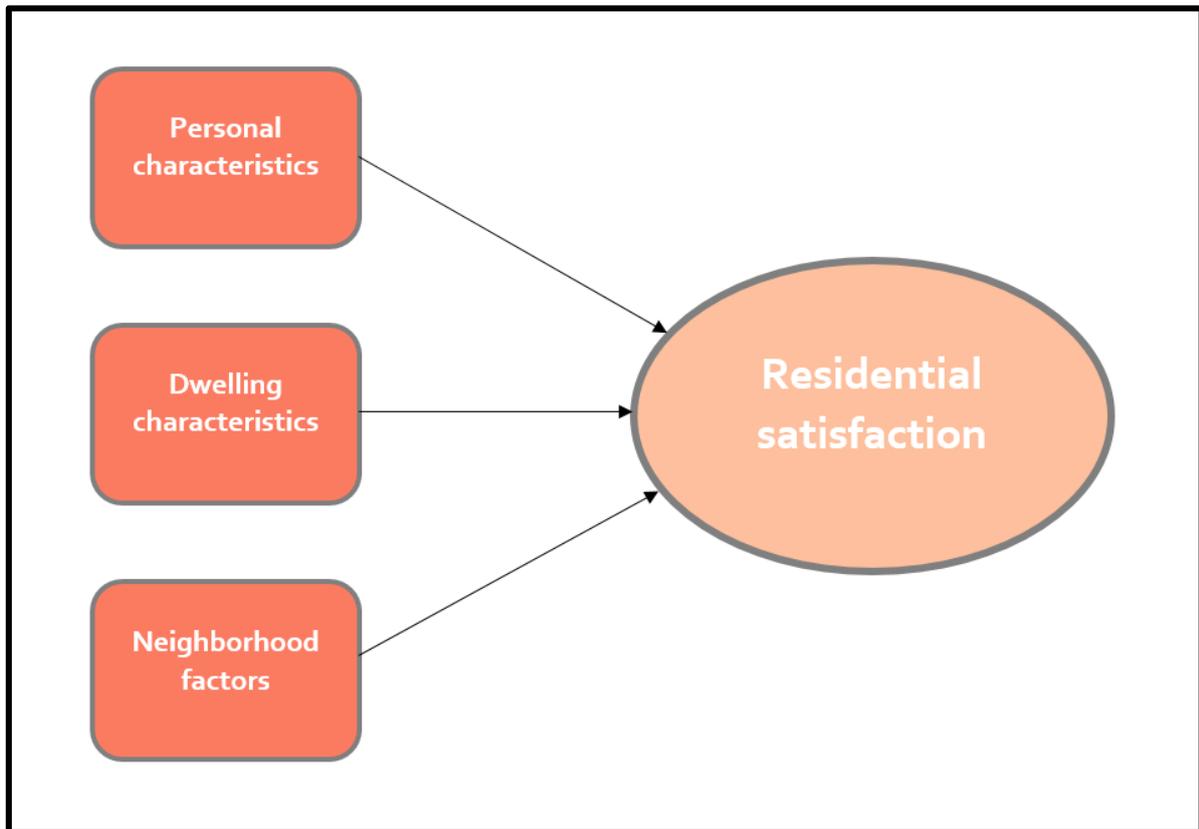


Figure 1: conceptual framework 'residential satisfaction'.

Source: based on Buys & Miller (2012).

2.1.2 Dwelling characteristics

The design of a dwelling has an influence on residential satisfaction and also the following dwelling characteristics have an influence on residential satisfaction: internal and exterior design features, age, size, structure, functionality and aesthetic feelings (Lu, 1999). According to Buys & Miller (2012) the following characteristics have an influence on dwelling satisfaction: facilities, upkeep, size, cost, design, surroundings, location, climate and environmental management. Table 1 illustrates these characteristics (next page). Buys & Miller (2012) state that aspects such as owning a house, house size, living in a detached house and attractiveness of design are all positively linked to satisfaction. Table 1 illustrates these characteristics (next page).

Dwelling attribute	Examples
Facilities	Facilities in your dwelling including sanitation, heating and communal facilities including pool, clothesline and laundry
Upkeep	Internal upkeep of your dwelling, control of pests, insects and vermin
Size	Spacious living/size of rooms, number of rooms and storage space
Cost	Purchase price, management fees, cost of heating, cooling, water and electricity
Design	Construction, position and design of dwelling, location of dwelling in the complex, privacy, noise
Surroundings	Natural surroundings, landscaping and gardens and view from the dwelling
Location	Proximity to services, proximity to work, proximity to public transport
Climate	Indoor climate of the dwelling, access to breezes, quality of outdoor air, natural light
Environmental management	Water efficiency, energy efficiency

Table 1: examples of dwelling characteristics.

Source: Buys & Miller (2012).

2.1.3 Neighborhood factors

If someone is satisfied with the neighborhood it contributes to residential satisfaction. According to Mesch and Manor (1998) satisfaction can be defined as the evaluation of features of the physical and social environment. Brower (2003) states that residential and neighborhood satisfaction play an important role in people's intention to move. If residents are highly satisfied with the neighborhood they will not move and induce others to move in. If residents are less or not satisfied with the neighborhood, residents will move out. The question remains what factors are important for neighborhood satisfaction. Neighborhood factors can be distinguished in two types: physical factors and social factors. Physical factors of a neighborhood consist of the physical environment, access to recreational opportunities, access to amenities, safety from crime, open space and traffic. Some examples of social factors are interaction by communication, interaction through favors and interaction through social activity (Hur & Murrow-Jones, 2008). When it comes to social neighborhood factors, residential satisfaction seems to be higher in rural and in more prosperous areas, and also in areas with fewer ethnic minorities. Furthermore, studies have shown that people seem to especially value social contacts, traffic safety and social safety, an attractive neighborhood with facilities in reach and a good environmental quality in their residential satisfaction (Buys & Miller, 2012).

2.2 Positive and negative externalities of road infrastructure

Road infrastructure is associated with positive and negative externalities. Some examples of positive effects are that a road brings accessibility and economic growth. Thus, a road can be associated with development and progress of areas (Hamersma et al., 2014). Road infrastructure can also be associated with negative externalities. There are many negative externalities that are associated with road infrastructure. The most important and most common are described below. The first negative externality that will be discussed is air pollution. The impacts from vehicle emissions contribute to air pollution. Air pollution in itself has also several additional impacts. Health effects appear to be the major impact of air pollution (Cravioto et al., 2013). Another negative externality of road infrastructure

is noise. According to Koyama & Kishimoto (2001), noise pollution is most commonly evaluated based on three variables: the levels of average constant noise from road traffic, the population exposed to such noise, and a cost factor per dB over the threshold. Cravioti et al. (2013) state that cost factors can be determined from noise annoyance or health effects, assessed together or separately. The third negative externality that is important are the accidents that road infrastructure entails. A consequence of accidents can be congestion. Which brings us to the last externality. According to Cravioti et al. (2013, pp. 64) the core problem of congestion is "the time lost due to the mutual disturbance among users of an overburdened infrastructure." Congestion can also be linked to other externalities, but delay in time is generally the most relevant effect (INFRAS et al., 2007). Some further examples of negative externalities are policy or emergency services, energy or natural resource depletion, the costs associated with urbanization, waste disposal, water pollution, crop and building damage, cleaning, amenities and aesthetics (Cravioti et al., 2013).

2.3 NIMBY

It is necessary to build new roads or to make substantial modifications to roads to be able to reduce congestion. However, building or adapting roads can be a cause of public opposition. This opposition is often seen as NIMBYism (Devine-Wright, 2012). The word NIMBY stands for 'Not In My Back Yard'. Dear (1992, p. 288) defines NIMBYism as "the protectionist attitudes of and oppositional tactics adopted by community groups facing an unwelcome development in their neighborhood". NIMBY is often used to describe the negative reactions against various locally unwelcome developments. These developments are perceived to have harmful effects to the environment and public health. Unwelcome developments are also perceived to cause a decline in quality of life (Pelekasi et al., 2012). According to Smith (1981) there is one universal factor that is present in all NIMBY conflicts, namely the geographical proximity. By this is meant that when residents are closer to an unwelcome development, the more likely they are to oppose it. Pelekasi et al. (2012) state that many researchers discuss that NIMBY conflicts arise because the external costs affect only the neighborhoods surrounding the unwelcome facility, while the benefits of such unwelcome facility is shared globally throughout the economy. Also other factors contribute to NIMBY behavior including bad decision-making processes and mistrust of government or even private actors. However, the external costs contribute most to NIMBY behavior (Pelekasi et al., 2012).

Building a new road can be an example of an unwelcome development in the neighborhood. Residents do often agree that new roads are necessary, but not near their homes. This reaction of the residents is described by Dear (1992) as NIMBY. In a case like building and adapting (new) roads a lot is involved. Think for example of noise nuisance by building the road. But not only during the construction of the road this nuisance will be presented. Even when the road is finished, the nuisance will remain. This is because of the cars that will cause a nuisance.

2.4 Citizen participation

Over the years, citizens have become more involved in policymaking and policy implementation. This is observable in practice (Geurtz & van de Wijdeven, 2010). Nowadays governments no longer operate as actors that are self-determined decisions. Governments have to share power and influence with various other actors, including citizens. At the same time, citizens became more critical towards government and its performance (Putnam, 2000). In Dutch road planning the Ministry of Infrastructure & Environment is a major player and involved in many roles including policy development and decision-making. However, many other actors are involved as well including the local government, companies, environmentalists, commuters and of course the citizens. These different actors have different interests. For this research the focus is on the citizens and therefore the shift described above can be seen as a *move towards the citizens* (Geurtz & van de Wijdeven, 2010). According to Geurtz & van de Wijdeven (2010) there are two main motives that contribute to this move: an instrumental motive and a democratic motive. From the instrumental perspective, the participation of citizens helps to generate a better output in terms of support and also in terms of activating citizen expertise (in addition to professional and political expertise). From a democratic perspective, it can be said that when more people participate it is better. It makes a decision-making process more democratic in a normative sense. Furthermore, it can be said that through participation citizenship is (re)created which leads to a vital civil society (Geurtz & van de Wijdeven, 2010).

According to Arnstein (1969) there are eight levels of citizen participation. These eight levels are illustrated on the basis of a ladder pattern, see figure 2 (next page). Each step represents the amount of power of the citizens. The higher you are on the ladder, the more participation of the citizens. *Manipulation* (1) and *Therapy* (2) are the bottom steps of the ladder and represent levels of 'non-participation'. This means that citizens do not participate in the planning processes. Instead of participation, the citizens are educated by powerholders (Arnstein, 1969). The following two steps are *Informing* (3) and *Consultation* (4) and represent levels of 'tokenism'. In these cases, the citizens may hear and be heard. However, there is still a lack of power. Another form of tokenism is the fifth step *Placation* (5). It is a higher level of tokenisms because in this case the citizens are able to advise. However, the powerholders still have the right to decide. The last three steps represent different degrees of citizen power. Citizens can be part of a Partnership (6) that enables them to negotiate and engage in trade-offs with powerholders. In the cases of Delegated power (7) and Citizen control (8), the citizens have the power to make own decisions (Arnstein, 1969). It has to be said that the ladder of citizen participation is a simplistic representation of the reality. However, it makes clear that there are different types of citizen participation.

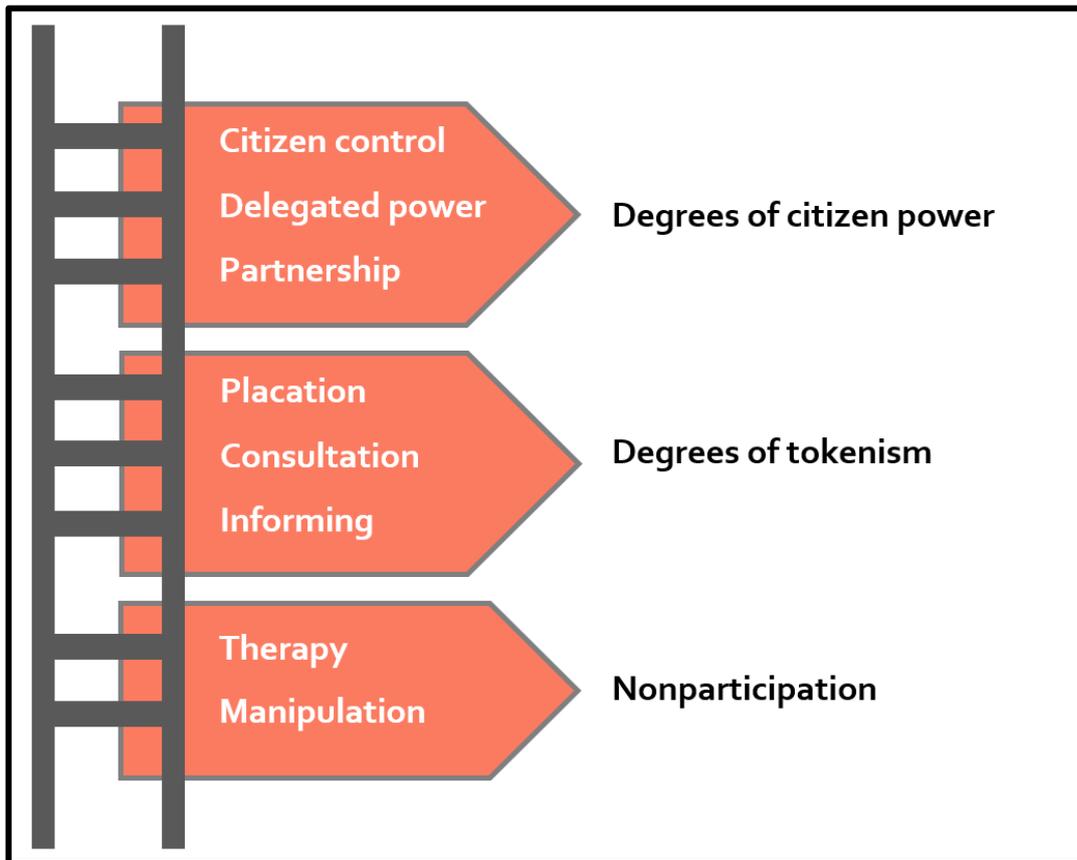


Figure 2: The ladder of citizen participation

Source: based on Arnstein (1969).

In the Netherlands there are many new and innovative forms of citizen involvement, including neighborhood livability budgets and interactive decision-making (Geurtz & van de Wijdeven, 2010). Municipalities aiming for stronger citizen involvement in policymaking and implementation in order to bridge the gap between citizens and government (Geurtz & van de Wijdeven, 2010). Many types of citizen participation try to involve the citizens and go beyond the usual opportunities for public consultation. An example of citizen participation is to involve the citizens in interactive sessions (Geurtz & van de Wijdeven, 2010). In this case the involvement in interactive sessions give citizens influence. According to Michels & De Graaf (2010) citizen participation has positive effects on aspects of democracy including that citizen participation in policy making makes people feel more responsible for public matters and increases public engagement. However, citizen participation should not be seen as a panacea for all problems with which governments are dealing. There are two possible dangers that should be described. The first problem is that some groups are excluded from active participation. As a result, some quiet voices are never heard, which may eventually contribute to lowering public trust in government and a diminishing quality of democracy. The second problem refers to expectations. Michels & De Graaf (2010) state that citizens take part in policy making projects with enthusiasm. The citizens have the feeling that they can contribute to improvement in their neighborhood. A common pitfall is the disappointment that can occur among the citizens, due to high expectations on the part of the participants. This often leads to citizens who do not want to participate anymore during the process or deciding not to take part in future projects.

2.5 Conceptual framework

Figure 3 (next page) shows the conceptual framework for this research. Explanation of this conceptual framework is as follows: there are four main factors that may have an impact on the residential satisfaction: personal characteristics, dwelling characteristics, neighborhood factors and the planning project. Personal characteristics may affect the residential satisfaction, however, the focus in this research is not on these characteristics. Dwelling characteristics may also affect the residential satisfaction. Also neighborhood factors may contribute to the residential satisfaction. Based on both literature and empirical research it is investigated what factors have an influence on residential satisfaction. This has given answer to the second sub-question. As described earlier in this chapter, the neighborhood factors can be divided in physical and social factors. For this research, the physical factors are the most important. Think of the physical environment which may contribute to the residential satisfaction. A highway is an example of a physical factor, living near highways may affect the residential satisfaction. The highway brings both positive and negative externalities with it. These externalities are again examples of neighborhood factors and may also have an influence on the residential satisfaction. An example: when a highway brings many negative externalities with it, it can result in a decrease of the residential satisfaction. Based on empirical research it is investigated whether externalities have an influence on residential satisfaction. The case – Knooppunt Joure – used for this research is a highway. This highway may have an influence on the residential satisfaction of the residents who live closest to it. In addition, the highway is being addressed because of congestion. It may be that such an infrastructure project may affect the residential satisfaction. For this research the planning project is divided in two factors, namely information provision and citizen participation. These two factors may have an influence on the residential satisfaction. Based empirical research it is investigated whether information provision and/or citizen participation have an influence on residential satisfaction. This has given answers to the fourth and fifth sub-questions. For example: in a case when residents do not receive information and are not actively involved in the planning project, the residential satisfaction may decrease. When the residents do receive information and are actively involved, the residential satisfaction may increase. On the basis of in-depth interviews it is investigated whether dwelling characteristics, neighborhood factors, the highway and the planning project have an influence on the residential satisfaction. These results can be found in chapter seven and eight.

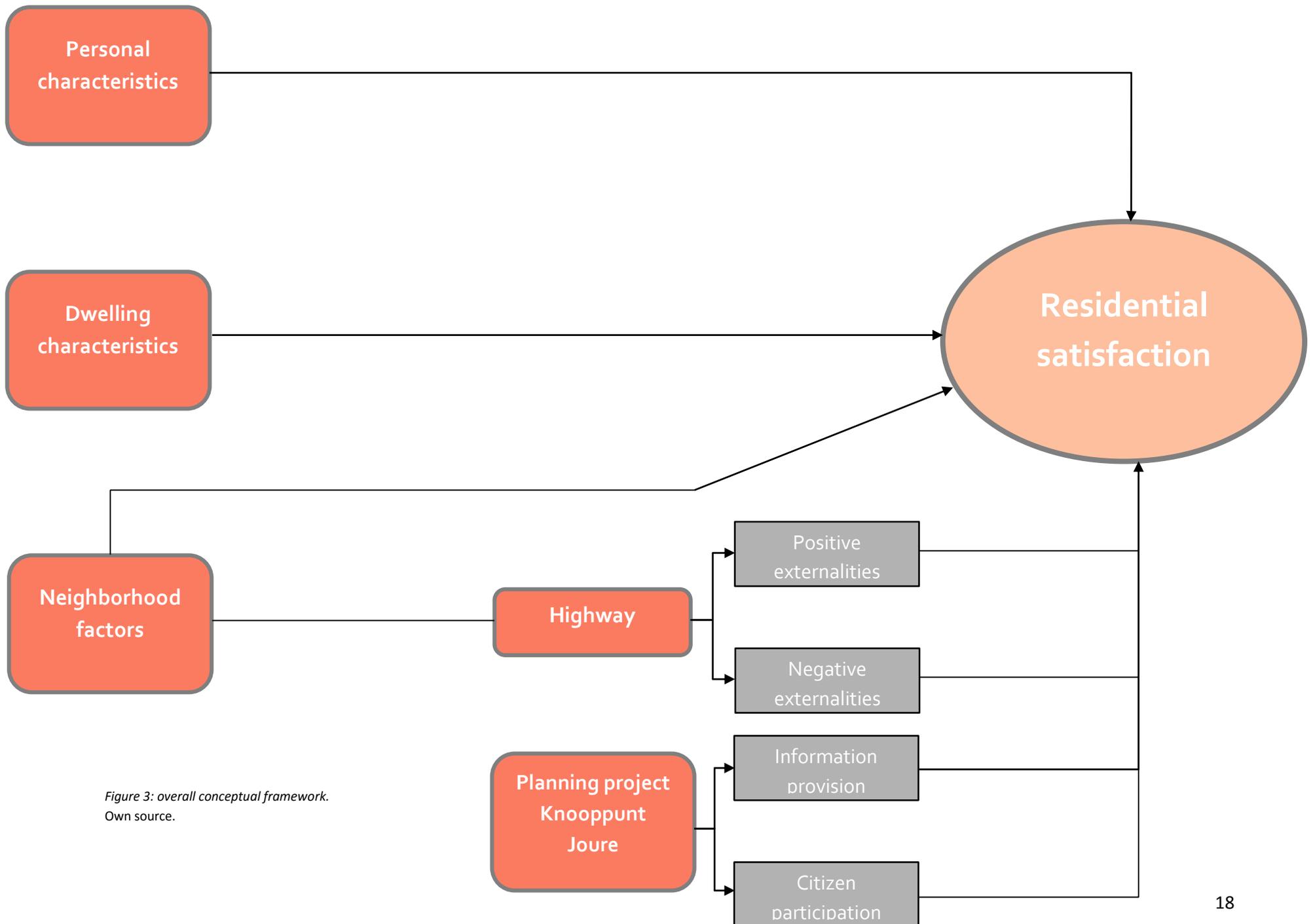


Figure 3: overall conceptual framework.
Own source.

Chapter 3 – Research design

In this chapter the research design of the study is described. In section 3.1 the case study is briefly described and explanations are given why this case study is used. Subsequently, 3.2 describes the data collection. It is explained why in-depth interviews are used for this research instead of for example surveys. Finally, in section 3.3 the ethical issues are described which you encounter as a researcher.

3.1 Case selection

To get an answer to the question *how do highways and plans for highway adjustments projects influence residential satisfaction* a case study is being done. For this research the focus is on the junction of Joure, also called 'Knooppunt Joure' or 'Ronde Joure'. This case is relevant for the research because it is an example of a highway adjustment project. 'Knooppunt Joure' is a traffic hub located at the junction of the highways A6 and A7. The junction is designed as a roundabout, but will be adjusted. Therefore, it is a good example of a highway adjustment project. In addition, the infrastructure project is still in its preparatory phase and this gave the opportunity to explore how plans for this adjustment project influence the residential satisfaction. Thereby, daily traffic jams occur on and around the junction. This gave the possibility to investigate whether these traffic jams have an influence on the residential satisfaction.

The junction – which is designed as a roundabout – is located in the southern part of the province Friesland. It is a crossroad of the Rijksweg A6 leading from the junction of Muiderberg via Almere, Lelystad, Emmeloord and Lemmer, towards Joure and the A7 Bad Nieuweschans-Zaandam. The roundabout is designed as three stripes and three bypasses. The three bypasses are meant for traffic from Emmeloord towards Heerenveen, traffic from Sneek towards Emmeloord and traffic from Heerenveen towards Joure. The roundabout has a diameter of 250, is rotary floors and has no traffic control. The junction serves both for the flow from the Randstad towards Groningen and also for the commuting between the provinces of Friesland, Flevoland and Groningen. The problem of the junction is that traffic jams daily occur during peak hours. During these hours the roundabout has a limited capacity that results in traffic jams and alternative routes that are taken. For this problem a solution is already found. The junction will be reconstructed and the roundabout will disappear. The solution is based on a through connection A6/A7 Lemmer-Joure-Heerenveen, with perpendicular A7 Bolsward-Sneek via overpass connections. As a result, the traffic flow and traffic safety will be improved and positive effects on the environment and quality of life can be achieved (MIRT, 2014).

Before the problems of the roundabout will be resolved, preparations must be taken. At the end of this year the contractor will start with the construction of the road. The question that remains is to what extent the residents receive information and are actively involved. And what impact this has on the residential satisfaction. To gain information in the perception of these residents, in-depth interviews are held.

3.2 Data collection

Research is done on the basis of literature and qualitative methods. Literature review has been done for several reasons. First, to determine what kind of research on plans for highway adjustment projects and residential satisfaction has already been done. Secondly, literature review was needed

to describe and explain the most relevant concepts, including residential satisfaction, positive and negative externalities, NIMBY and citizen participation. Qualitative research has been done in order to determine whether that what is described in the literature is in line with the results obtained from the field, and also to obtain new results and insights which can create new knowledge. For this research it is most appropriate to conduct in-depth interviews because the research question requires in-depth qualitative data. The research is about perceptions, experiences, values and feelings. It is difficult to explore feelings and perceptions on the basis of surveys, and therefore in-depth interviews are more appropriate. On the basis of in-depth interviews the deeper picture of the reasons behind living near highways and residential satisfaction can be explored. Residents are likely to experience living near highways and residential satisfaction in different ways and therefore it is interesting to understand the different reasons. For this research twelve residents have been interviewed to gain detailed insight in their personal experiences about living near highways. And also to better understand the factors that drive the residents' perceptions and acceptances of plans. Thereby, in-depth interviews were also held to gain information from the project office. The stakeholder manager and communication officer have been interviewed in order to gain information about the project and how the project office provides residents with information and how the office involves the residents in the project.

Before conducting in-depth interviews it is important to find suitable participants. First, an appointment was made with the stakeholder manager and communication officer. They are both employed at the province Friesland. Both have been interviewed at the same time at the project office in March 2015. Much information is gained about the project in general and about information and involvement of residents. The next step was to approach residents. The study population in this case are residents who live within one kilometer of the roundabout. The reason for this is that residents who live outside this kilometer will hardly experience the positive and negative externalities of the highway. Due to the requirement of one kilometer a non-random method of recruitment is done, also called purposive recruitment (Ritchie et al., 2013). Google Earth has been used to map the houses that are located within one kilometer of the roundabout. After that, some houses are selected and the residents were informed by letter (attachment I). A total of twenty-three letters were sent. It took two weeks before the first responses came in. In total, twelve residents were willing to cooperate. The in-depth interviews were all structured (attachment II) and were conducted individually at the respondents' homes in the month of May and June 2015. The respondents come both from Haskerhorne and from Joure. The in-depth interviews were held at the respondents' homes on the grounds that home for the respondents is a familiar environment. As a result, the respondents are likely to be more open and thus able to give more information. In addition, respondents were also able to show certain things, so there is a clearer picture of the situation created. All the in-depth interviews are recorded, the respondents have given oral consent. An advantage of recorded in-depth interviews is that the researcher has the opportunity to listen to the in-depth interviews again at a later moment and is in this way able to analyze more information. Arranging interviews and holding interviews takes much time and therefore the interviews were conducted well on time.

To analyze all the in-depth interviews, a codebook is used (attachment III). The codebook is designed as a list that consists of all codes that are relevant to the research. Each code refers to a topic, an issue or an idea that is evident in the data (O'Leary, 2010). A distinction is made between deductive and inductive codes. Deductive codes have been originated from the topics in the interview guide and the conceptual framework. Inductive codes are derived directly from the data. These codes reflect the

issues that the respondents consider as important (O'Leary, 2010). For each code a name and description has been given. The codebook is used for a reason: coding the transcripts contributes to reduction of the data. All the data is segmented into smaller meaningful parts for analysis. The results of the different respondents is sorted and therefore it is easier to compare the data.

Conducting in-depth interviews is a good manner of data collection, however it also has its limitations. In-depth interviews can be considered as subjective and value laden. In this case an interviewer should be aware of the researcher's role. In addition, it is important that the researcher can manage his own subjectivities (O'Leary, 2010). Thereby, in qualitative research (in-depth interviews) there may be respondent bias. With this is meant that a respondent presents itself better than he or she really is, or when a respondent gives socially desirable answers. It is difficult to determine whether there is actual respondent bias. However, it should be taken slightly into account. At least, it is necessary that the personal information is treated confidentially.

On the basis of theoretical saturation, the quality of the data can be explained. O'Leary (2010) states that theoretical saturation means that additional in-depth interviews no longer add new perspective. In other words this means that no new information is gathered. After twelve in-depth interviews theoretical saturation had been reached. The data that is gathered can be considered as reliable. Yet, on the basis of twelve in-depth interviews it is hard to make generalizations. In order to be able to generalize, more data will be needed and probably in the form of surveys. However, keep in mind that surveys are not well suited to investigate perceptions and experiences.

3.3 Ethical issues

During the research process it is important to take ethics into account because it is at essence about how study participants are being treated well. Ritchie et al. (2013) state that ethical issues have become a more central issue in discussion of research methods. Ritchie et al. (2013, pp. 78) say that "good ethical qualitative research means being able to anticipate what might arise but also to respond to the unexpected, working in a thoughtful and reflective way. It means developing an ethical conscience that puts participants' interests at the heart of decision-making." According to this statement, it may be obvious that ethics do play an important role within qualitative research. By conducting in-depth interviews it is important that the participant is treated well during the interview. However, it is also important that the participant is treated in a correct way before and after the interview. For example, this means that the participant is not forced to participate and is informed well. After the interview and the completion of the study, the participants will have the opportunity to read the research. Table 2 (next page) shows more examples of research ethics.

Before the interview	During the interview	After the interview
Unpressured decision-making about taking part	Being able to exercise the right not to answer a question or to say more than they want	Right to privacy and anonymity respected in storage, access and reporting of the research
Research is independent and legitimate	An unpressurised pace, time to think	Unbiased and accurate reporting
Knowing why they were selected to be approached	Feeling comfortable and at ease, valued and respected, not intimidated or judged	Opportunity for feedback on findings and use
Clear and worthwhile objective, purpose and intended purpose	Opportunity for self-expression and for own views to be recorded	Use is actually made of the research for social benefit
Knowing what to expect and being able to prepare especially in terms of coverage and questioning	Questions are relevant, not repetitive, clear	
Openness, honesty and being able to correct misunderstandings	Left without negative feelings about participation	

Table 2: a participant map of research ethics.

Source: Graham et al., 2007 in Ritchie et al., 2013.

In this research it was chosen to invite the respondents by letter, in which an explanation was given about the research. The respondents contacted to make an appointment. They could choose when it suited them best to be interviewed and whether they wanted to be interviewed at home. The preferences of the respondents were leading. During the interviews, it is tried to give the respondents a comfortable feeling. What contributes to this feeling was that the interviews with the respondents were taken at their homes. In addition, the time is taken to let the people tell what they preferred. There is also asked whether the respondents wanted to add something during the interview. After the interview, the information of the respondents are confidentially analyzed. The real names of the respondents are not used, they are indicated by numbers.

Results part I

Project office



Chapter 4 – Background information Knooppunt Joure

In this chapter the Dutch spatial planning system and background information of the case study 'Knooppunt Joure' are described. The information which is described in section 4.2 to 4.6 has been won on the basis of an in-depth interview with the stakeholder manager and communication officer of the project office, and this also applies to chapter 5. First, the Dutch spatial planning system is described in section 4.1. Then, general information is described in section 4.2. Subsequently, in section 4.3 the funding of the project is described. Section 4.4 describes the different phases of the project. Subsequently, in section 4.5 the stakeholders which have an interest in the project are described. And at least, in section 4.6 it is described how the project office deals with nuisance.

4.1 The Dutch spatial planning system

In the Dutch legislation it is determined what needs to be done before a road may be constructed or widened, a procedure must be carried out. This procedure is described in the 'Tracéwetprocedure' (in English: Record of Decision). The 'Tracéwetprocedure' has two procedures. The first one is an extensive procedure for the construction of new roads, or a modification of an existing road whereby the road will be widened with more than two lanes. During this extensive procedure, there are three moments when one can respond: 'Ontwerpstructuurvisie', 'Ontwerptractébesluit' (OTB) and 'Tracébesluit' (TB). The second one is a regular procedure for adjusting existing roads. During a regular procedure one can only respond to the 'OTB' and the 'TB' (Rijkswaterstaat, 2015).

The 'Tracéwetprocedure' consists of the following steps: the procedure begins with the start decision (in Dutch: startbeslissing). It is examined whether there is an existing or potential future problem - or lack - of a main road. In the start decision the area in question is observed, and the explored problem, including the relevant spatial developments. During the start decision it will also be determined whether a structure plan (in Dutch: structuurvisie) will be drawn during the exploration phase (in Dutch: verkenningsfase). The second step is the exploration. During the exploration phase it is determined whether the identified problem can be solved. In this phase, information is gathered about the area, the nature of the problem, relevant spatial developments and possible solutions. In the exploration phase, the civil society, organizations and government bodies are involved through information meetings. The third step is called the preferred decision (in Dutch: voorkeursbeslissing). Based on the exploration, the Minister takes a preferred decision, possibly with a draft structure plan and 'MER' in the case of the extended procedure. The fourth step is the 'OTB'. During this phase the preferred decision is elaborated in a draft TB. Usually also a 'MER' is drawn. The draft 'TB' may be viewed and one can respond. The fifth step is the 'TB'. After the reactions have been taken into account, the Minister of Infrastructure and the Environment takes the final 'TB'. Stakeholders who responded to the 'OTB' may appeal against this final 'TB'. When the 'TB' becomes irrevocable, the province and municipalities have to make sure that the solution will be integrated into the area. This will be done by adjusting the zoning and for example to grant the necessary permits. The sixth step is the realization phase. The 'TB' for the project is taken in this phase. All procedures have been completed and the funds are available. The construction can be started. The last step consists of the evaluation and completion test. The evaluation checks whether there is a proper assessment of the environmental impact made in the 'MER'. The completion test is used to verify compliance with the legal requirements (Rijkswaterstaat, 2015).

4.2 The project

The junction Joure between the A6 and A7 is a vulnerable link in the road network in the province of Friesland and on the main links between the Randstad and the northern Netherlands. There are regular traffic jams occurring on the node, especially during rush hours. The immediate surroundings of the junction also suffer from congestion, the traffic does not flow well. The problems of accessibility and traffic flow are due to the limited capacity of the junction and due to how the road network is connected to the junction. In addition, the junction is considered as unsafe with an annually high concentration of accidents. Traffic that wants to avoid the junction, sneaks through the cores around Joure, including Scharsterbrug, Sint Nicolaasga, Haskerhorne and Oudehaske. As a result, problems arise with regard to the liveability and safety of these villages. There is also a part of the traffic that chooses a route via the N354 and Follega instead of Sneek-Lemmer. It can be said that the main reasons for the realization of the project are congestion, cut-through traffic and road safety. By addressing the junction, traffic jams will be avoided, there will be no question of cut-through traffic and the road safety will be optimized. In addition, after completion of the project the accessibility of the north should be improved.

4.3 Funding

There are three main parties involved in the project: Rijkswaterstaat, the province of Friesland and the municipality De Friese Meren. These three parties use a regional approach (in Dutch: gebiedsgerichte aanpak). This means that the province works together with the municipality and Rijkswaterstaat. At the regional level, the partners work together to solve existing traffic and transport problems. Before a final solution was devised, use would be made of temporary measures. In 2005, the three governments have agreed to take joint measures for the short and medium term. An example of a short-term measure is the construction of the bypass from Sneek to Lemmer in 2006. However, since it was announced that the government had decided not to realize the Zuiderzeelijn, it was decided to come up with a definitive solution for the problems of the junction. In 2007 the joint parties decided to stop the procurement for the medium-term measures and come up with a final solution for the junction. Because the Zuiderzeelijn was canceled, the government has decided to compensate their financial contribution to the North. The amount of 2.16 billion euros is intended for optimizing the development of the economy and the accessibility of the North. Therefore the northern provinces have set up a region specific package of projects, including the junction of Joure in Friesland. The estimated expenditure for the project of Joure is 76.7 million euro. This while 72 million is available. This 72 million euro is financed as follows: 52 million was obtained from the Regional Mobility Fund. The government has made a contribution of 9 million, and the region contributes 11 million. The province bears the financial risk.

4.4 Different phases of the project

In 2003, RWS, the province and the municipality agreed to tackle the problems that occur on the junction of Joure together. In 2005, the different parties approved to conduct joint measures for the short and medium term. However, since it was announced that the government had decided not to realize the Zuiderzeelijn, it was decided to come up with a definitive solution for the problems of the junction. In 2007 the joint parties decided to stop the procurement for the medium-term measures

and come up with a final solution for the junction. In 2008, the agreement has been signed between the government and the region concerning the Region Specific Package (RSP). In 2008, the three governments have started to investigate the problems that occur on and around the junction of Joure. These three parties have made a study on a final solution to the junction. This is also called the exploration phase. Based on the results of the exploration, the parties agreed in 2010 to start an administrative planning study for the reconstruction of the A6/A7 junction. This includes the 'OTB/MER' en 'TB'. In the summer of 2014, the 'Tracébesluit' has become irrevocable and as a result the preparation started. In the end of 2014 the tender has been launched for the construction of the junction. Nine contractors have signed up as interested parties to carry out the work. In January 2015 five contractors were selected: Boskalis Nederland, Gebr. van der Lee, Ballas Nedam, BAM van Oord and Van Gelder. These five contractors have presented their plans and cost estimates in mid-May. In the beginning of July it is announced that Gebr. van der Lee had made the best offer on the basis of price and performance. They offer good quality and durability and will minimize disruption during work. Therefore, they may carry out the construction. The construction starts at the end of 2015. The infrastructure project has to be completed at the end of 2017.

4.5 Stakeholders

Besides Rijkswaterstaat, the province and the municipality, there are more stakeholders involved in the project. Figure 5 (next page) shows the various stakeholders involved. Gebr. van der Lee is the company that will carry out the construction. The water board is involved because the water balance will be adjusted. The landfill is also involved because it is sensitive ground that is located close to the affected area. The companies McDonald Joure and Hajé Joure are involved because they are located near the junction. After the completion of the project their location will be further away from the highway. What at first does not seem beneficial for both companies. That is the reason that they are involved in the project. In addition, the village community, residents, business areas and emergency services are also involved. According to the stakeholder manager, the project office is trying to involve the various stakeholders as much as possible. The stakeholder manager states that the residents are both involved on the basis of information as actively involved. Chapter 5 tells more about this.

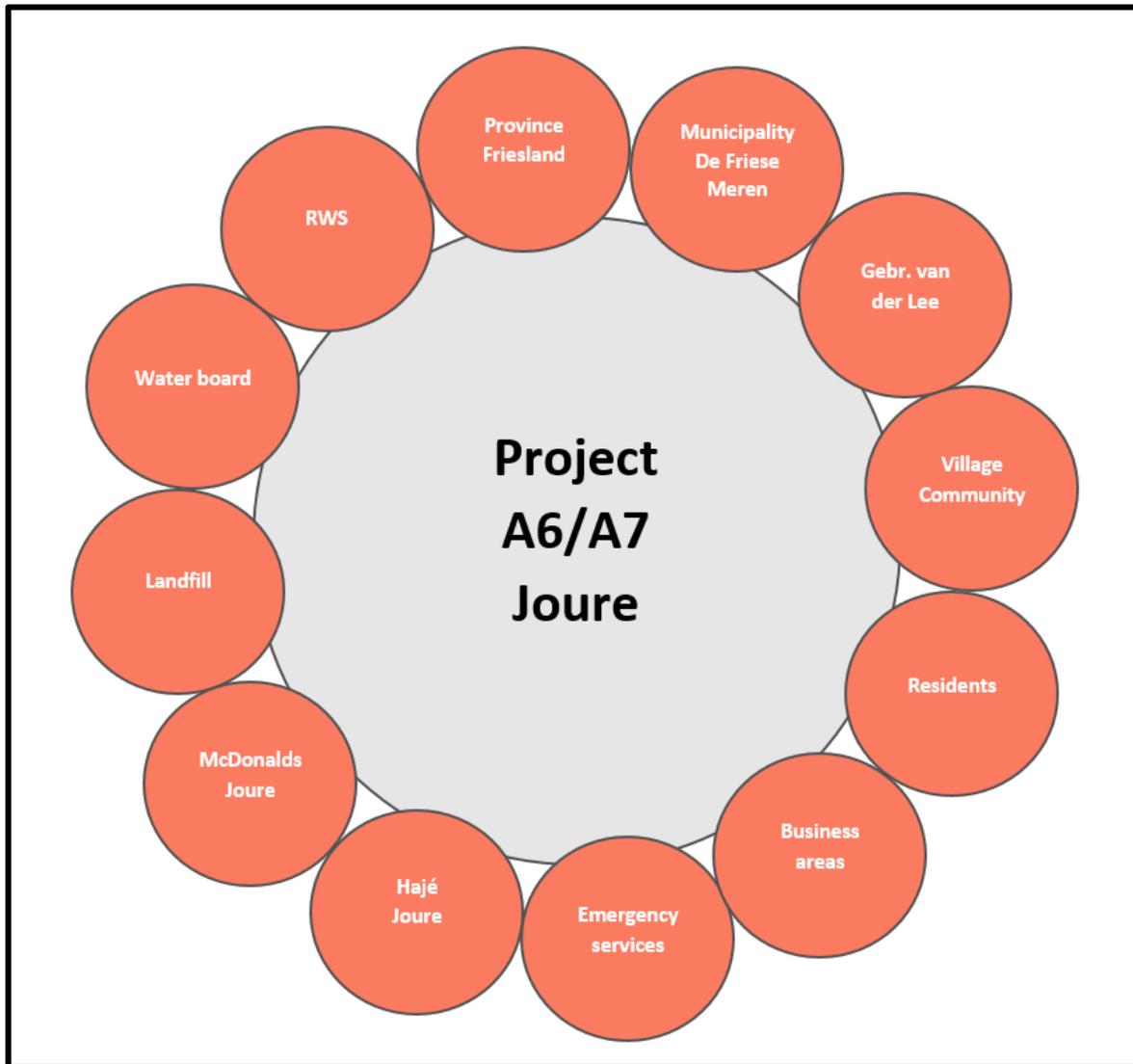


Figure 4: stakeholders project Joure.

Source: based on information from the project office (2015).

4.6 Nuisance

According to the project office there will of course be nuisance during the construction phase, but the office will try to keep this to a minimum. There will be not much hindrance because many of the construction take place in pasture. Road users will experience little discomfort. It is agreed that the main road will be accessible during the construction phase. It is important that communication takes place on time about possible nuisance. The project office and the future contractor will pursue this. It is also important that the planning is clearly indicated. The project office clearly indicates that it is always available for questions and complaints. Clear agreements have been made regarding to 'slots'. By this is meant that there is an agreement between the project office and the contractor at what times certain roads may be closed. This is stated in the contract. An important point is that the main road should always be accessible.

Chapter 5 – Provision of information and involvement of residents

In this chapter the provision of information and involvement of residents are described. Also in this chapter the information that is described has been won on the basis of an in-depth interview with the stakeholder manager and communication officer of the project office. In section 5.1 it is described how the project office provides the residents with information. Section 5.2 describes how the project office has actively involved the residents in the project.

5.1 Provision of information

So far, most newsletters are published on paper. On the basis of a file of addresses newsletters are sent to the inhabitants of Joure. However, the project office will now proceed to digital newsletters. It has to be said that not every inhabitant of Joure has internet. The project office will take this into account. So far, there are two inhabitants who do not have internet access and still want to stay informed. They will be invited to the information center and will be informed about the progress of the project. The project office is also trying to reach people through Twitter. The office reaches a lot of people with it. There is also a site www.knooppuntjoure.nl where all relevant information is displayed. The three main parties: Rijkswaterstaat, the province and the municipality also display a lot of information on their websites. In addition, the local and regional press are continuously monitoring the project and disseminate information through their websites. The project can also use different channels, including village communities. These communities can then further disseminate information among the residents and/or interested parties. Also the project office itself serves as information. The project office has a strategic location, which is next to the roundabout. Large letters are pasted on the office 'knooppuntjoure.nl'. So, the office also reaches people through this way as it is easy to read from the highway.

5.1.1 Provision of information in each phase

The communication officer states that in the initial phase of the project newsletters are sent by post to the nearest residents. More and more people were interested in the newsletter and have signed up for it. During information evenings there was the opportunity to sign up for the newsletter. The stakeholder manager states that more information sessions will be organized during the realization of the road. The project office wants to spread information more intensely. When the contractor is known, information will also be the task of the contractor. The contractor is responsible for providing information during the realization phase. He should clearly indicate the planning and inform the residents about the planning. Even when there is nuisance, the contractor is responsible. The target group for information depends on the impact of the work being done. For example, if the Hollandiastraat will be addressed, the people who live near this road will be informed. When working on the highway itself, a much greater audience will have to be informed.

5.1.2 Purpose of information

According to the stakeholder manager, information is spread on the basis of a two-track policy. The main goal is to inform both road users and residents. Road users are mainly informed by the social media. The contractor will inform road users using text signs about any nuisance. Rijkswaterstaat will

inform road users through the site www.vananaarbeter.nl. This site has a wide range. It is important that what is promised, is also really honored, namely indicate nuisance on time. The website www.knooppuntjoure.nl is always kept up to date. The stakeholder manager states that the project office is trying to bring much, but also expects that the residents themselves will gather information. When residents come up with answers 'I did not know', they have clearly not asked the project office for information. All information is available and as a resident you can find out everything. It may not be the case that the residents knew nothing. It is a kind of two-way traffic, the project office provides information, but one must also come to get it. The office has a good accessibility, the residents know where to go for questions and complaints.

5.1.3 Procedures

According to the stakeholder manager, carrying out different procedures can be tricky. He states that Rijkswaterstaat follows tight procedures, including nuisance categories. This means that construction activities are divided into nuisance categories. At the beginning of a project or new phase the nuisance category of work is determined. The traffic nuisance categories are a measure of the nuisance for individual road users who have to deal with deposits on the road. The nuisance categories are based on a classification by the degree of delay (RWS, 2009). On the basis of these nuisance categories the road users are informed. The project office has to take this into account. Still, the project office is also free to give information. According to the stakeholder manager, it is true that you have to deal with different parties (province, municipality and Rijkswaterstaat). Each party has its own way of providing information. The stakeholder manager indicates that the province does not follow a strict procedure. In addition, once in a while the project offices of all infrastructure projects in Friesland are coming together. An information evening is organized where the way of information is discussed. The goal is to learn from each other.

5.2 Involvement of residents

The stakeholder manager states that the project office tries to work as transparent as possible towards the environment and the residents. According to the stakeholder manager, residents are very involved in the project and have certainly had a say. The project office has listened carefully and included the ideas in the project. Examples are the Hollandiastraat en the entrance of Joure. In both cases the residents came up with various ideas. The ideas were developed on the basis of two workgroups. According to the stakeholder manager there has been a clear cooperation between the project office and the residents. The results of this cooperation are passed on. The entrance of Joure is truly designed by the residents themselves and will be realized. If something cannot go on, it is explained properly why it cannot continue. As long as there is a good explanation why something cannot continue, the residents have eventually peace with it. During the construction phase the residents are no longer involved in the design, but are still involved on the basis of information. The stakeholder manager states that after the realization of the new road, trees will be planted. These new trees should compensate the trees which are harvested in March 2015. It is quite certain where these trees will be planted, but the residents have also a say in this. They may come up with ideas.

5.2.1 Positive feedback

The stakeholder manager states that he has only heard positive comments and reactions so far. He states that residents are wondering when the construction of the new roads will start. The first “negative” message that has been heard, is that after the tree-cutting the whole area looks really ugly. According to the stakeholder manager, the residents would prefer that the construction of the new road will be started as soon as possible, so that the ugly and bare plain disappears soon. There has been no discussion with the residents with respect to the project. The project has no opponents. For the realization of the project three farms have been established. The stakeholder manager mentions that the family members do not like that they have to leave their farms. In some cases, the farm is a family farm, where the inhabitants are attached to. However – according to the stakeholder manager – the families receive a good compensation.

Results part II
Residents



Chapter 6 – General information residents

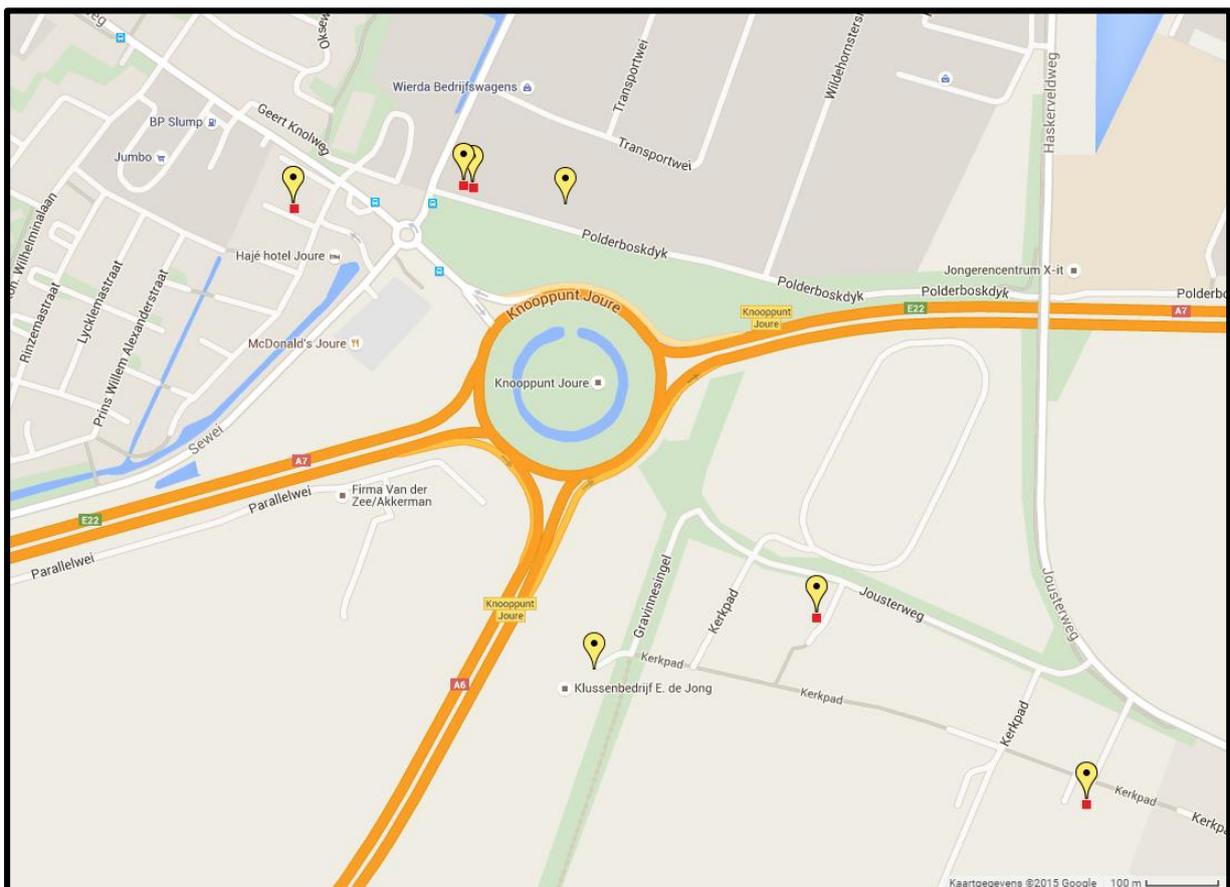
In this chapter the general information of the respondents are described. The information that is described in this chapter – and also in chapter 7 and 8 – has been won on the basis of in-depth interviews with twelve residents. Section 6.1 describes the personal characteristics of the respondents and in section 6.2 the residential areas of the respondents are described.

6.1 General characteristics respondents

The respondents show quite some differences in terms of the personal characteristics. Table 3 – see the other page – shows these differences. In total, twelve residents cooperated in the investigation. Among the youngest and oldest respondent there is an age difference of forty-three years. All respondents are born in the province Friesland and are familiar with the roundabout of Joure. As can be seen, the distances of the residential locations are quite different with respect to the roundabout. These different distances may affect the outcome.

6.2 Residential areas respondents

Map 1 shows the residential areas of the different respondents. When there is a red cube stated under the location indication it means that two respondents living in the same place.



Map 1: residential areas of the respondents.

Source: Batchgeo (2015).

Respondent	Gender	Birth year	Birthplace	Residence	Education	Profession	Household Composition	Marital status	Car(s)	Distance roundabout
Respondent #1	Male	1956	Idskenhuizen	Haskerhorne	MBO	Commercial employee in service	Two persons	Married	Two cars	735 meter
Respondent #2	Female	1958	De Knipe	Haskerhorne	PABO	Teacher	Two persons	Married	Two cars	735 meter
Respondent #3	Female	1987	Joure	Joure	HBO	Sales person and own business	One person	Single	No car	100 meter
Respondent #4	Male	1969	Haskerhorne	Haskerhorne	MBO	Farmer	Four persons	Married	Two cars	310 meter
Respondent #5	Female	1970	Oudehaske	Haskerhorne	MBO	Teaching assistant	Four persons	Married	Two cars	310 meter
Respondent #6	Male	1944	Scharnegoutum	Joure	MULO A	Retired	Two persons	Married	One car	295 meter
Respondent #7	Female	1946	Katljik	Joure	Housekeeping school	Housewife	Two persons	Married	One car	295 meter
Respondent #8	Female	1951	Heerenveen	Joure	LBO	Homecare and hospitality industry	Two persons	Married	Two cars	160 meter
Respondent #9	Male	1948	Joure	Joure	Technical school	Contractor	Two persons	Married	Two cars	160 meter
Respondent #10	Female	1960	Sloten	Joure	MBO	Funeral director	Two persons	Married	Two cars	150 meter
Respondent #11	Male	1958	Leeuwarden	Joure	MBO	Technician	Two persons	Married	Two cars	150 meter
Respondent #12	Female	1963	Joure	Haskerhorne	LHNO	Main conductress	Three persons	Cohabitation	Two cars	200 meter

Table 3: personal characteristics of the respondents.

Own source.

Chapter 7 – Residential satisfaction

In this chapter the residential satisfaction of the respondents is discussed. On the basis of the results of the in-depth interviews it is seen if the respondents are satisfied with their residences. In addition, it is investigated which factors contribute to the respondent's residential satisfaction. Are the characteristics of the house important, or rather the characteristics of the neighborhood? Or do they both affect the residential satisfaction of the respondents? In section 7.1 the factors that contribute to the residential satisfaction are discussed. In section 7.2, the focus is on the highway. It describes what for impact the highway has on the residential satisfaction. Section 7.3 describes the role of traffic jams with respect to the residential satisfaction. Finally, this chapter ends with a short summary.

7.1 Residential satisfaction and factors behind it

It is investigated whether the respondents are satisfied with their residential area. It can be said, that all respondents are satisfied with their residential area. Of course, the degree of satisfaction differs. The following quotes show the degrees of satisfaction.

"Highly satisfied"

Respondent #1 - male

"I am satisfied with the living situation"

Respondent #2 - female

"Wonderful, I like living here!"

Respondent #5 - female

"Good. We are happy to live here, yes."

Respondent #7 - female

"Yes, good. I have always lived here with pleasure."

Respondent #11 - male

Despite that at the moment all respondents are satisfied with the residential area, it is for two respondents still the question of whether they will remain satisfied at that location. One respondent indicated that her residential location at this time is nice, but not for a longer period because she lives above a business.

"It is nice for now, but not for the rest of my life, but that is because I live above a business, and therefore there is always noise from the company itself. Yes, it is, I have no garden, it really is a single dwelling, it is fun for now. I do not know how long I will live here. I have no plans to leave, but I do not think it is a five-year location."

Respondent #3 - female

Another respondent is generally quite satisfied, but finds her residential area sometimes annoying. This is due to the traffic jams.

"Sometimes I find the residential area a little bit annoying, because it is always full of cars here. And when I need to go to the Midstraat or anywhere else by car, I quite often must detour. Well that is, yes I think that is annoying."

Respondent #10 - female

Knowing that respondents are generally satisfied with their residential area, it is interesting to study the factors that contribute to this. It is examined what kind of factors play an important role in the residential satisfaction of the respondents. The respondents were asked whether characteristics of the house contribute more to this residential satisfaction or characteristics of the neighborhood, or that the residential satisfaction is contributed by a combination of both. It can be said that there is a variety in answers. The neighborhood factors and a combination of both (neighborhood and dwelling factors) are mentioned as factors that contribute most to the residential satisfaction of the respondents. In the case of the neighborhood factors, it is mainly the physical environment which is mentioned as a key factor.

"It is the freedom that you have here. The environment. Yes especially freedom around the house, I think. No neighbors. Lovely."

Respondent #5 - female

"Well, of course you live in a beautiful place. Although, look there, the roads are a bit close. And so once the roads come to lie even closer. But I do not mind if I see cars driving on the highway. If you live in the middle moors, which seems to me nothing. Nothing happens there, you know. So I do live quietly here, in a cul-de-sac. There is little traffic. Yet you still have some movement around you. Here and there ... Behind we have the pasture and forest. Yes, you cannot be unhappy here."

Respondent #4 - male

But the physical environment is not only mentioned as a key factor in the case of the neighborhood factors. Also in the case of a combination of both factors (neighborhood and dwelling factors), the physical environment plays an important role.

"Well it is actually a normal size house. But just the atmosphere. It is an old house. We have adapted certain things, home improvement. The atmosphere (...) And, we do actually live so close to nature. Near the forest, we have land at the door and there is water nearby."

Respondent #2 - female

"The environment, too, and the house also. The environment is beautiful. If you want to cycle here, you can pretty cycling and the neighborhood is great fun, so uh, we live here with pleasure."

Respondent #7 - female

It can be said that regardless of the choice of factor(s) that contributes most to the residential satisfaction, the physical environment has a great influence on these residential satisfaction. Although there is an exception among the respondents. There is one young woman who really wanted to leave her parents' house. In her case, the dwelling and neighborhood factors did not play a role

in her choice of residence, and do hardly contribute to her residential satisfaction. It may be said that the personal characteristics contribute more to her residential satisfaction.

"I did not start to live there because of the location, but just because I really wanted to leave the parents' house. And I came here because of my father. He said it would be released, and asked me if it was something for me. And it is affordable. It is just an apartment above a business. I have to go through the company to come into the house. So, that is why I live there, because it is affordable and I wanted to get out of the house (...) If the location of the apartment would be somewhere else, I would also live there."

Respondent #3 - female

7.2 The highway and residential satisfaction

In the first section the general factors are studied that contribute to the residential satisfaction. In this section is discussed to what extent the highway has played a role in the choice of housing, what the advantages and disadvantages are of living near the highway, and whether the highway affects the residential satisfaction.

7.2.1 The highway and the choice of housing

It is investigated if the highway have had played a role in the choice of housing. It is remarkable that all respondents indicate that the highway had no effect on the choice of housing. During the residential choice, the respondents have not really thought about the highway within the meaning of accessibility. In retrospect, it often appears that living near the highway is quite convenient.

"In retrospect, though. When we bought this house, I was not thinking about the fact that we would come to live close to the highway. I was more thinking about the environment; the nature and live freely. But in recent years, I realize that the house has an ideal location, so close to the roundabout."

Respondent #2 – female

"No, no. Not at all. I have never thought about it. You do not think about it at all. Now I am aware of it, now it is going to change. But when I came here, you think, it is just there, the highway. So, I had not really an idea about it. Let me put it in this way: the highway has not kept me busy."

Respondent #5 – female

"No, then, the highway did not play a role. Now it is easy. But, then, we did not think about it."

Respondent #11 - male

One respondent does have taken into account the presence of the highway before they finally decided to buy their house. The respondent wanted to determine to what extent the highway produced noise and how much hindrance she might encounter when she would live there. Several times she has been to the house to hear how the noise is during rush hour.

"Yes, we went here several times to hear. With rain, and during the day. Because the highway was already there, thirteen years ago. But it was not as busy as now. But, uh we also went here during the rush hour. It is not so bad here. And if you sit on the terrace, you actually do not hear the noise."

Respondent #12 – female

7.2.2 Advantages and disadvantages highway

When asked what advantages living near the highway brings with it, nearly all respondents react the same. For the most respondents, a big advantage of living near the highway is accessibility. The respondents find it easy that they are in no time on the highway.

"You are, of course, in no time on the highway. And in no time you get very far. If I need to go to Düsseldorf, then I am on the highway in a short time. Or when I have to go to Amsterdam, or wherever. That is for sure. I do not need to drive first on small thirty-kilometer roads, no. So that is an advantage."

Respondent #1 – male

"For me the only advantage is, that when you go to the south, or somewhere else, you are in a short time on the highway. If you live somewhere in a corner of Friesland or Groningen, you first have to drive a half hour before you reach the highway. And that is, yes, you live here very central. You live between Heerenveen and Joure and you are close to major roads. So you are quickly anywhere (...) Yes, everything is accessible. And fast. And that is the biggest advantage actually."

Respondent #4 – male

A female respondent indicates that living near the highway offers no benefits for her within the meaning of accessibility. What she sees as an advantage is that there is a lot of action. There is always something to see, daily minor collisions happen and occasionally major accidents.

"Action, yeah. Action, accidents and that kind of stuff. Yes (...) And sometimes there are a lot of cars at once, and then they have a rear-end-collision. Here. And on the other side, from Sneek, they often drive too fast through the turn. Over there. You can sometimes wait because it has been smooth, and then you hear it again 'bats!', someone drove against the against the guardrail. And then we run and we look 'oh yes, it is that time again. Someone hit the guardrail!'"

Respondent #12 – female

Also when asked what disadvantages living near the highway brings with it, nearly all respondents react the same. What often is seen as a disadvantage is the noise that is produced by the traffic. For some respondents the noise is really a disadvantage. And also the noise is perceived as annoyance.

"Noise, yes. Noise (...) Sometimes I really annoys me. When I sit in the garden, I often sit behind the house because it is too noisy at the front of the house. But, it also depends on the wind of course. But, yes what a noise. I like to sleep with the windows open, but that almost never happens (...) The traffic and noise goes on day and night."

Respondent #5 – female

When the woman is asked how she deals with the experienced nuisance, she says that she always sits behind the house and closes the windows before she goes to bed. Even though she likes to sleep with open windows.

Another example of noise and nuisance is this woman who is experiencing discomfort from the cars and the noise.

"Disadvantages, oh yes. Those cars and the noise. At the end of the summer then I am like 'uuuhlg', all those cars, and then honking and boom boom boom, with that music. But no, yes we once thought to leave here, but where do we have to go? (...) Sometimes I am done with it. But that is not always the case. We now have a huge refurbishment, so we stay here for the next ten to fifteen years if possible (...) Yes and in the near future it will all be better, when the project is finished."

Respondent #10 – female

This woman deals in a different way with the experienced nuisance than the woman described above (respondent #5). She does not really take measures to minimize the nuisance. She often grumbles a while and then it is done.

Several other respondents cite noise as a disadvantage, but are not disturbed by it. They do hear it, but there is no nuisance. The following quotes illustrate this.

"Nah, not really a nuisance, but I also love great silence. And you do not find that here. Also because the traffic has become much busier in recent years."

Respondent #2 – female

"I am hardly prone to things. At night you can hear the noise, but I sleep well. But, I can also enjoy silence and I do not find that here. So, for example when I go by bike to my parents, and sit there in the garden, then it is more quiet and I really enjoy it. And I realize it too."

Respondent #3 – female

There are also a number of respondents that indicate that living near the highway has no disadvantages for them. They are hardly aware of it, and are totally accustomed to the noise. What has been noticed among the twelve respondents, is that women are annoyed by noise rather than men. Perhaps women are more sensitive to sound than men. However, no generalizations may be made on the basis of twelve respondents.

7.2.3 Impact of the highway on residential satisfaction

Knowing that the highway brings advantages and disadvantages with it, it is interesting to know whether these advantages and disadvantages also effect the residential satisfaction. Does the highway has anyway an impact on the residential satisfaction?

Most respondents indicate that the highway has no impact on the residential satisfaction. The advantages and disadvantages mentioned above are experienced, but are not that strong in the sense that it has an impact on the residential satisfaction. The following quotes indicate that there is no question of the highway that affects the residential satisfaction.

"No the highway has actually no effect on me at all. Advantages or disadvantages. I have also never really thought about it actually that it is easy to have the highway near my place. I have never thought about it."

Respondent #1 – male

"Well, I do not believe that if the highway were not here now, I would be more satisfied. No, I do not believe. No."

Respondent #4 – male

Also for the next respondent applies that the highway does not affect the residential satisfaction. Although she bought the house because of the nature and to live freely, yet she says that she sometimes prefers to live in a more remote location, with more nature and tranquility around her. However, in recent years she found out that her house has an ideal location. Now she is getting older, she thinks it is better to live near the highway.

"Uuh, well no, no influence. Sometimes I think it would be nice to live in a more quiet place. With more nature around me. But actually it is, when you get older it is not easy to live in a more remote location. Then it is better to live near a village with facilities and a highway where you can go either way."

Respondent #2 – female

There is also a respondent that indicates that the highway has no impact on her residential satisfaction, because she knows that her living place is temporarily. Though, she mentions that if she will ever buy a home, it will not be located too close to the highway.

"Look, for me it is not a big issue. But I would not want to live for the rest of my life near a highway. Because it will affect the peace in the area, so there is no quietness."

Respondent #3 – female

7.3 Traffic jams and residential satisfaction

During rush hour daily traffic jams occur on the roundabout. The residents who live close to the roundabout have to face the traffic jams daily. It is interesting to examine how they experience these traffic jams and whether those traffic jams affect the residential satisfaction. This is examined through a series of questions.

It is a fact that the use of cars is increasing (KiM, 2013; MNP et al., 2006). This growth of car use has an impact on the capacity of roads. When there are more cars on the road, more traffic jams will occur. The respondents also experience that over the years the traffic jams on the roundabout have increased. One respondent indicates that she does not really know whether the traffic jams have increased during the years, because she just lives there. She knows at least, that traffic jams have always been a common problem in Joure, and that is also one of the reasons why the roundabout will disappear.

"No, I do not know. I just live there, not that long. I know that the roundabout was always a problem for Joure. Yes, maybe the traffic jams are more worse on weekdays, but I thought it was always especially on Friday afternoon when these long traffic jams occur. And now, traffic jams occur on a daily basis."

Respondent #3 – female

7.3.1 Experiences traffic jams

Knowing that the traffic jams have increased in recent years, it is interesting to see if the residents also suffer from these traffic jams. It is noteworthy that most respondents do not suffer directly from the traffic jams that occur several times a day. A number of respondents indicate that they do take the traffic jams into account before they leave the house.

"Daily traffic jams emerge on the roundabout, but most of the time I go by bike, so I can easily go through it, then I do not suffer. It is true that when I use for example the car of my parents and have to go to the store, I consciously keep in mind that there are traffic jams during rush hour. So then, I leave earlier, or later."

Respondent #3 – female

"Yes, we usually avoid the traffic jams. We try to leave before the traffic jams occur, and come back home if the traffic jams are gone. We often stay somewhere longer, because you know there are traffic jams (...) Yes we keep the traffic jams in mind. I try to leave the house before the traffic jams occur. We know that around 4 PM you should not be on the roundabout. And in the mornings we do not have to be there so early. You have to come back after 6 PM, then the traffic jams are quite resolved."

Respondent #7 – female

There are also two respondents who were not directly affected by the traffic jams, but suffer from the cut-through traffic which is a result of the traffic jams.

"The consequences of the traffic jams. When the traffic is stuck on the roundabout, then the roads here are also crowded. That is a problem (...) Yes, I suffer from cut-through traffic."

Respondent #1 – male

"No, because I avoid the roundabout. I do not necessarily use the roundabout to get to my work. I can use other roads to get to my destination. So, I do not suffer from the traffic jams (...) Cut-through traffic, in Haskerhorne and Oudehaske it has become more busy. And when I go home from work, it can be busy in Oudehaske."

Respondent #2 – female

It is remarkable that two respondents truly enjoy the traffic jams. They really enjoy the view. Because they have always an eventful view. They often sit behind the window with a cup of coffee to enjoy the view.

"No, no. Sometimes we just sit in the chair and then look, there is always something to see, we always have a view. Ha-ha. And people who come here always say and ask 'what a nice view! Do you not suffer from the traffic jams?' No, we do not suffer. There is plenty to see. Last Sunday it was full here. Fifty buses. People stood in the pasture to take pictures. It was really busy here. And from Sneek there were many caravans. The Germans went home again. They celebrated their holidays on the islands, and in the long run they return to their homes. It took a few hours before the traffic jams were gone. And then you look 'oh look, a lot of caravans! Oh yes, another one! What a rush!'"

Respondent #8 – female

"I really like to watch the traffic jams ha-ha!"

Respondent #9 – male

It must be said that the traffic jams have only found to be annoying when someone necessarily needs to go on the roundabout to get – for example – at work.

"Because, then I am stuck in the traffic, when I go to my work (...) Yes, then I leave the house, and after twenty minutes I am still on the roundabout (...) And especially the mini roundabout, when it is too busy, in a short time the traffic stands still. A few days ago, five trucks drove for me, and it takes a lot of time before they can leave the mini roundabout which is located near the roundabout"

Respondent #5 – female

Aforementioned woman only experiences discomfort when she is stuck in the traffic. If she is at her home, and sees the traffic jams, she does not suffer from it. There is no question of sight pollution. Also the other respondents indicate that they do not suffer from sight pollution.

7.3.2 The impact of traffic jams on residential satisfaction

The respondents hardly suffer from the traffic jams. When a respondent does suffer from congestion, it is only when this person necessarily has to go on the roundabout to get to the destination. In addition, residents often avoid the roundabout. They know when the traffic jams occur. This certainly applies to residents who have a good view of the roundabout. They know exactly when it is busy. Since respondents hardly suffer from congestion, traffic jams have no impact on residential satisfaction. And this makes sense, since the highway also has no effect on the residential satisfaction of the respondents. The following quote illustrates that the traffic jams do not affect the residential satisfaction.

"No, the traffic jams have no influence. No, the roundabout nearby is no reason for me to leave here, no, no."

Respondent #11 - male

Summarizing

The physical environment has an important role in contributing to the residential satisfaction. Of course, personal characteristics do also play an important role. However, these characteristics are hardly adapted in this study. It is obvious that the highway has not played a role in the choice of housing. On behalf of the respondents, the biggest advantage of living near the highway is accessibility. In a short time you are on the highway and you can go anywhere. However, the highway also brings disadvantages with it. In the case of the respondents noise is a disadvantage. How noise is perceived, varies per respondent. In addition, it can be said that the highway does not affect the residential satisfaction. Daily traffic jams occur during rush hours on the roundabout. This seems to be very annoying. Nevertheless, most respondents do not suffer directly from the traffic jams. The traffic jams are mostly taken into account before the respondents leave the house. A result of congestion is cut-through traffic, this can be annoying. There are also two respondents who enjoy the traffic jams, there is always something to see. Traffic jams have only found to be annoying when someone necessarily needs to go on the roundabout to get. Since respondents hardly suffer from congestion, traffic jams have no impact on residential satisfaction.

Chapter 8 – The infrastructure project and residential satisfaction

In this chapter the infrastructure project related to the residential satisfaction of the respondents is discussed. On the basis of the results of the in-depth interviews is seen whether the respondents agree that the roundabout will disappear. It is also investigated to what extent the respondents are aware of the planned activities. In addition, research has been done to what extent the respondents received information, and to what extent the respondents have been actively involved in the project. Section 8.1 describes the opinions of the respondents with respect to the current and future situations. In section 8.2, the focus is on the provision of information. Section 8.3 describes to what extent the respondents were actively involved in the project. Finally, this chapter ends with a short summary.

8.1 The project

Background information of the infrastructure project Knooppunt Joure can be found in chapter 4. In this section the focus is on the respondent with respect to the project. It is discussed how the respondent thinks about the current situation and about the future situation.

The respondents do all know why the roundabout will be tackled, namely because of the traffic jams. It has been for years that daily traffic jams occur on the roundabout. The respondents are all well aware. Most respondents are not satisfied with the current situation and are glad that the roundabout will disappear. It is time that the roundabout will be tackled. It is said that the construction is allowed to start immediately. And the respondents which are not satisfied with the current situation are really looking forward to the future situation.

"For me, the roundabout may be gone tomorrow directly!"

Respondent #1 – male

"So, for me, they may immediately begin with the construction (...) Then, we will be quite fast by bike in Joure, and also with the car it will be easier. So, therefore they may start immediately."

Respondent #2 – female

"I really look forward to the improvement, that is because, then you can easily... you are faster on the highway."

Respondent #7 – female

There are also a number of respondents who just say that they are satisfied with the current situation. They do not suffer from the current situation. One reason is that they do not need to make use of the roundabout. So, they are not disturbed by the traffic jams.

"Yeah, look, well I am actually satisfied with the current situation. I do not need to make use of it. I really believe that when you have the use the roundabout every day, then you are done with it. But, for me, personally, little changes."

Respondent #4 – male

However, the above-mentioned reason is not the only reason to say that one is satisfied with the current situation. A woman, living in Haskerhorne, indicates that she prefers to retain the current situation instead tackling the roundabout. This is because a piece of her land will be taken to realize the new road.

"Well, we know that the roundabout will be addressed, but to my opinion it was not needed (...) A wall will be constructed here to protect us from the noise. The wall will be about 180 meter long, and will be two meter above the road, so then we do not see cars anymore. They will all be gone. And the wall will be green. So, our view is a green wall. The wall will come to lie very close, Beitske (...) The wall will be located in our pasture. If you take the corner of our house, and then walk 35 meter, then we stand against the wall. That is the smallest distance (...) Look, Schultz has got us good. The first plan hit us too, but the damage would be less. But then, Schultz said the speed will be adjusted from 120 to 130km/h. Suddenly the plan became very different, because now the radius was too sharp, it had to be flatter. So, now almost our whole pasture will be used."

Respondent #12 - female

It seems that the concept NIMBY comes up here. As is described above, the woman is a victim of the future situation. She will lose a whole piece of her land. In this case, the infrastructure project can be seen as an unwelcome development that causes a decline in the quality of life. However, as compensation, she receives a whole new piece of land. This land is located behind her house. Eventually, she will have more land than before. Though, she indicates that despite she gets more land, she would rather had kept the piece of land in the front of her home. Because then, when you come by car to her place, it looks like a pretty complete picture. And this view will be gone in the future. Although this woman is a victim, she is still very positive. She is aware that she cannot change a thing about the situation. She will again make the best of it. Since the woman - even though she is a victim of the future situation - still is very positive, there is no question of the concept NIMBY.

"My man would not leave the place anyway. Because we live here really lovely. So yes, what do we do? We have to make the best of it! We will again create a beautiful place! And it will be good again. However, it will take a while."

Respondent #12 - female

Despite the different perceptions of the current situation, all respondents are well aware of how the future situation will look like. The closest residents are well informed. How they are kept informed, is discussed in the next section.

8.2 Provision of information

In this section is described to what extent the residents have received information about the project, through which sources they got this information and if they are satisfied with the received information. It is also described what kind of information the respondents want to receive in the realization phase. Finally, it is described whether the received information has an impact on the residential satisfaction.

It is analyzed whether the respondents receive information about the project. All respondents indicate that they have received information about the project. Most have received information through a newsletter. This newsletter is occasionally issued and the respondents receive this newsletter in their letterbox. One respondent states that she does not know whether she has received this newsletter because she shares her letterbox with the company. And she also does not know if the company receives these newsletters. She got her information from her father and from the internet. More respondents indicate that they also get information from the Internet. Information is collected through the website www.knooppuntjoure.nl. Other sources of information are village newspapers, local newspapers and information evenings. The most direct residents - people who have a direct view of the roundabout - are occasionally invited to visit the project office. There the residents receive information about the project. And then there are a number of respondents who lose a piece of land by the construction of the new node. They do not only receive information on the basis of newsletters, but are also informed by the municipality, province or RWS. Occasionally someone will come along to discuss the specific issues.

"Oh yes, yes. Yes, we did receive information. And we were also briefed, you know. Then, someone came from the province or the municipality (...) Look the plans are changed quite often. And they discuss it with the residents, they tell it us in person. So, that has always gone well."

Respondent #4 – male

"Yes, yes, yes. And from RWS. With which we were negotiating. They came along or my man went over there (...) We have been working on it for four years. But now we finally have an agreement. That took a long time. To sell the ground, and to gain new ground."

Respondent #12 – female

Knowing that all respondents receive information, it is interesting to look at what the respondents think about the received information. All respondents who have received the newsletter are satisfied with the received information. They find that they receive sufficient information and they consider the quality of the information properly.

"Yes, there is sufficient information sent (...) Yes, the information described in the brochures is very clear."

Respondent #2 – female

"Yes, I think so. From the brochures I can get anything what I want to know."

Respondent #11 – male

The woman who does not receive the newsletter, gets her information from the website www.knooppuntjoure.nl. She indicates that the information on the website can be improved. She believes that there are too many pictures on the site, and there is little recognition in those pictures. However, she indicates that it is a while since she has looked at the site.

"Could be better. I think it could be more informative. Though, it is a while since I have looked at it, maybe it is also adapted. But I felt that there was only a picture of how it looks right now, and a picture of how it will look. But in the future picture were actually no landmarks."

Respondent #3 – female

However, another respondent indicates that she is very satisfied with the information which is described on the website. She thinks the information is very good and tells that there are 3D photos on the site where you can see the future situation very clear.

"Yes, that 3D is really great, you can see it better because I always find it so difficult to imagine how the future situation will be constructed. And with this 3D you can see the old and new situation and then you get a much better picture of it."

Respondent #2 – female

Knowing how the current information is experienced, it is also interesting to look at what kind of information the respondents prefer to receive during the realization phase. When asked what kind of information the respondents want to receive during the realization phase, two kind of responses are mentioned. First, there are respondents who find it especially important to receive information about the traffic disruption that is likely to take place, so information about the roads that will temporary no longer be accessible.

"Well then I think it is very convenient that you hear those practical things about on which roads you have to drive. Because, yes there will be detours. And also when something is done, when you can already use it. That is very important to know. Where you have to drive."

Respondent #2 – female

"Well, look, the nuisance which we will experience. Information about which road will be closed. I really want to receive information about that."

Respondent #9 – male

However, there are also respondents who do not bother whether they would receive information about traffic nuisance. They would like to receive information about the progress of the project.

"Yes, be kept informed of how and when. Because we do not know that. But also come together to discuss the situation and the future situation. Because it will be a big mess."

Respondent #8 – female

"The planning of the progress. And I want to know whether they are ahead or behind the schedule. I think that is important. Those kind of things. Information about the progress schedule."

Respondent #11 – male

It is not only investigated how respondents experience the received information, it is also investigated whether the received information has an impact on the current residential satisfaction. So, it has been found that all respondents have received information and most respondents consider this information as sufficient and good. This would probably might have an impact on the residential satisfaction in the sense that sufficient and good received information may increase the residential satisfaction. However, this is not the case. All respondents indicate that receiving information have had no effect on the residential satisfaction. Perhaps it works the other way around, when no information was received the residential satisfaction might have been decreased. One respondents also indicates this, he imagined that if he would have had no information, it might have an influence on his residential satisfaction.

"Yes, if you would not receive information, then you might be annoyed or frustrated. That you do not hear a thing, and they suddenly begin with the construction or whatsoever. Yes, that would give vexation."

Respondent #4 – male

Knowing that receiving information does not affect the residential satisfaction, it is checked whether or not actively involved in the project has an impact on the residential satisfaction. This is discussed in the next section.

8.3 Involvement of residents

In this section is described to what extent the residents have been actively involved in the project and whether they want to be actively involved in the next phase. It is also described how important the respondents find it to be actively involved in an infrastructure project. Finally, it is described whether active involvement or no active involvement has an impact on the residential satisfaction.

It is analyzed whether the respondents have been actively involved in the project. There are respondents who have been actively involved in the project, as well as respondents who were not actively involved in the project. Seven respondents indicate that they were not actively involved in the project. It is interesting to know why they have not been involved. One respondent states that he was not involved because in the past he experienced that residents are not actually involved in such projects. He has very little faith. This is due to his past experience.

"You are not... My opinion is that residents are not really involved in public projects. They only show you how the future situation will look like. You may think that you have influence, but in my eyes you do not have any influence. The future situation will be like this, period. Under the guise of, people may say something, but nothing is done with it (...) Yes, this is how I think about public projects, I experienced this in the past. And why should it be different."

Respondent #1 – male

Another respondent states that she was young when the project was started, and apparently she had no interest. Thereby, she did not live there yet.

"Maybe, yeah I do not know. I do not know when they started with active involvement of residents. But then, I am 28, do you have interest in it at this age, and when they really started with the idea I was even younger."

Respondent #3 – female

On the other hand, five respondents indicate that they have been actively involved in the project. They also believe that there is listened to their ideas and that the project office really used their ideas. The respondents are very positive regarding their involvement.

"We are totally satisfied! We cannot say anything about it, that is good. They really involved us. Especially in the beginning we were actively involved, they did it really good (...) We had to draw, at a large table with drawings (...) Yes, yes, yes, that was fun! That was how we did it."

Respondent #9 – male

"Yes, especially in the beginning. With the design and how certain situations would be solved. Yes, we were actively involved, we have introduced ideas with the neighborhood. And the project office listened to our ideas and made use of our ideas. Yes, they have used our ideas. Yes."

Respondent #11 – male

It is noteworthy that the majority of the respondents who were till so far not actively involved in the project, state that they prefer to be actively involved in the next phase. In particular, it is about the replanting of trees. The project office has indicated that the residents partially have an influence on this replanting. Most respondents are enthusiastic and are willing to cooperate in this work.

"Yes, I would like to be actively involved. Be actively involved and to participate and come with ideas (...). Yes, yes, because nature has always been very important for me, and because many trees were cut here. So, they may replant them, because we live also very close to the forest."

Respondent #2 – female

"Yes, yes I do. Look, then they are allowed to take this mess - what you see over there - away. And then, they can plant new trees there."

Respondent #10 – female

The table (4) below shows clearly which respondents are actively involved in the project and which respondents want to be actively involved in the next phase of the project. Three respondents have not been actively involved and do not want to be actively involved in the future. A reason for this is that there is no trust. Residents are not really involved in public projects. Five respondents have been actively involved and want to be actively involved in the future. A reason for this is that they were very satisfied with the way they have been actively involved and therefore also like to become actively involved in the future. Four respondents have not been actively involved, but prefer to be actively involved in the future. A reason for this is that they were unaware of active involvement, and now they have heard that there is still the possibility to be actively involved, they also like to be actively involved.

Respondent	Has been actively involved	Wants to be actively involved in future
#1 – male	✘	✘
#2 – female	✘	✔
#3 – female	✘	✔
#4 – male	✔	✔
#5 – female	✔	✔
#6 – male	✘	✘
#7 – female	✘	✘
#8 – female	✔	✔
#9 – male	✔	✔
#10 – female	✘	✔
#11 – male	✔	✔
#12 – female	✘	✔

Table 4: overview respondents who have been actively involved/want to be actively involved in future. Own source.

Knowing that some of the respondents has been actively involved and whether the respondents want to be involved in the future, it is interesting to see how important the respondents think it is to be actively involved in infrastructure projects. All respondents indicate that it is important to be actively involved in infrastructure projects. It is said that it is important that residents have a say.

"Well, well, uh, you get the feeling that you are taken seriously. And look the greatest lines are of course well known, but you may still think about the smaller things around it. Yes, then it gives you the feeling that you have somewhat to say. So, that is a good thing."

Respondent #4 – male

"Yes, in my eyes it is really important, because if you have a say and influence, it provides benefits for you. Once the project is finished or that the plans are already implemented, you cannot make changes anymore."

Respondent #11 – male

Despite all respondents indicate that they find it important to be actively involved, a number of respondents indicate that in reality residents often do not have as much to contribute. Then, residents are asked to give their opinion, but these opinions are not taken into account.

"I think it is really important. Because the residents live there, it is their residential area. Residents should be actively involved (...) The project office should use the information given by the residents. In the past we had a bad experience in Joure. We lived in a small neighborhood, and there was a project, and we were actively involved - as they called it - we came up with ideas. But in the end, we did not have any influence. So, that is why I have little faith, they just want to keep the residents satisfied by telling them that they have a say, while they actually do not have a say. That was my experience."

Respondent #2 – female

"Yes, it is important, but often the residents have not a great influence. That is how it often works."

Respondent #12 – female

It is not only investigated to what extent the respondents have been actively involved in the project, it is also investigated whether the involvement has an impact on the residential satisfaction. So, it has been found that five out of twelve respondents have been actively involved in the project, and so seven respondents were not actively involved. This may probably have an impact on the residential satisfaction in the sense that being actively involved may increase the residential satisfaction, and not being actively involved may decrease the residential satisfaction. All respondents indicate that being actively involved or not being actively involved has no impact on the residential satisfaction. Thus, there is no distinction between whether actively involved or not. The respondents who are actively involved obviously like it. The respondents who are not actively involved indicate that this is also their own choice. If they really wanted to be actively involved, they also should go to the information sessions. This also indicates that not being actively involved has had no impact on the residential satisfaction in this case, because it is partly their own choice.

"I did not extract information about whether you could be actively involved. I have not visited the information evenings."

Respondent #1 – male

"I mean, the village organization has been working on the project, you also got information and was kept informed. And also by the municipality. But I did not went to these evenings. So, it is also my own fault. I have never visited these evenings."

Respondent #2 – female

Summarizing

The respondents do all know why the roundabout will be addressed. Most respondents are not satisfied with the current situation. However, there is a woman who prefers the current situation because she is a victim of the future situation. All respondents are well aware of how the future situation will look like. All respondents have received information about the project. The most of them received information on the basis of a newsletter produced by the project office. The quality of this newsletter is perceived as good. The perceived information has no influence on the residential satisfaction. It can be said that most respondents have not been actively involved in the project. However, the majority of these respondents prefer to be more active in the next phase. All respondents indicate that they think it is really important that residents are actively involved in infrastructure projects. However, not everyone has confidence in public projects. Despite the majority is not actively involved, this has no negative impact on the residential satisfaction.

Chapter 9 – Concluding remarks

In this final chapter concluding remarks are described. In section 9.1 answers are given to the sub-questions and eventually to the main question. In section 9.2 the conclusions have been further developed and explanations are given. Section 9.3 describes the recommendations for further research and in section 9.4 the reflection of this study is discussed.

9.1 Conclusion

Highways bring both positive and negative externalities with it. These externalities could affect the choices people make to live in a certain place. Despite the negative externalities there are many people that live near highways. All these people have a specific relation to this highway and specific perceptions of the highway. But what will happen with this relation and perception when a highway plan proposal is announced? It is interesting to investigate how the perception of the highway changes when a highway plan proposal is announced, because there is hardly specific information about it. Therefore, in this research it is investigated whether highways and plans for highway adjustment projects influence the residential satisfaction. It was expected that when the residents would have received information and would have been actively involved in the project, the residential satisfaction could increase. And – the other way around – that when the residents have received no information and would not have been actively involved, the residential satisfaction could decrease. To find out whether these expectations are correct, research is done on the basis of literature review, a case study and in-depth interviews. In addition, to answer the main question a number of sub-questions are devised.

First, the concept residential satisfaction is discussed. According to the literature residential satisfaction is a complex and multidimensional concept that is described in many different ways. The literature shows that there are three main groups that influence residential satisfaction: personal characteristics, dwelling characteristics and neighborhood factors. On the basis of in-depth interviews – with twelve residents – it is investigated whether these factors contribute to the residential satisfaction. The respondents indicate that the physical environment contributes most to the residential satisfaction. However, the highway – which is an example of a physical factor – has in this case no influence on the residential satisfaction. When asked what advantages living near the highway brings with it, nearly all respondents mention accessibility as an advantage. What is seen as a disadvantage is the noise that is produced by the traffic. Accessibility and noise is experienced by the respondents, but are not that strong in the sense that it has an impact on the residential satisfaction.

Subsequently, the concept citizen participation is discussed. According to the literature citizens have become more involved in policymaking and policy implementation. The literature shows that governments nowadays do not longer operate as actors that take self-determined decisions. Governments have to share power and influence with various other actors. It is investigated whether this also applies to the project 'Knooppunt Joure'. On the basis of an in-depth interview with the stakeholder manager it is investigated which stakeholders have an interest in the project. One of these actors are the residents. According to the stakeholder manager, the residents are really involved

in the project and have certainly a say. The project office has organized work groups and information evenings. On the basis of these residents have been actively involved. The project office listens carefully to the ideas of the respondents and takes these ideas into account.

Thereafter, it is investigated whether the respondents have received information about the project and how the respondents have perceived this information and whether the received information has an influence on the residential satisfaction. All respondents have received information about the project. The majority of the respondents have received information on the basis of a newsletter which is provided by the project office. The information that is described in this newsletter is experienced as sufficient and good. This would probably might have an impact on the residential satisfaction in the sense that sufficient and good received information may increase the residential satisfaction. However, in this case the received information has no influence on the residential satisfaction.

Finally, it is investigated whether the respondents have been actively involved in the project. As described earlier, the stakeholder manager indicates that the residents are really involved in the project. And also the respondents who have been involved in the project, indicate they were really actively involved. However, it seems that most respondents have not been actively involved in the project. It is important to mention that these respondents indicate that it was their own choice to not visit the information evenings. Being actively involved may increase the residential satisfaction and not being actively involved may decrease the residential satisfaction. All respondents indicate that being actively involved or not being actively involved has no impact on the residential satisfaction.

On the basis of the answers given to the sub-questions, it can be concluded that in this case the expectations which are described at the beginning of these section do not match with the results. The residents indicate that the received information and that actively involvement/no actively involvement do not affect the residential satisfaction. Therefore it can be said that – in this case – highways and plans for highway adjustment projects have no influence on the residential satisfaction.

9.2 Discussion

In this section the conclusion have been further developed, and explanations are given for the conclusions which are described earlier. On the basis of the same format as in the conclusion, the conclusions are further elaborated.

First, it is seen whether the results of the respondents – regarding the factors that contribute to residential satisfaction – correspond with what has been described in the literature. It is important to mention that the study focuses on the dwelling characteristics and neighborhood factors. According to the respondents the dwelling characteristics and/or neighborhood factors contribute to their residential satisfaction. The physical environment is the most important factor. Physical factors are also mentioned in the literature. The most common examples of physical factors – according to the respondents – are open space and nature. There may be an explanation for this. The most respondents have unobstructed and spacious views. These beautiful spacious views are partly reason why the respondents live in that certain place. Therefore, these factors contribute to the residential satisfaction. Thereby, it is also important to mention that the highway – which can also be seen as a physical factor – has in this no influence on the residential satisfaction. The respondents do actually not realize that the highway brings positive effects with it. And that is also the reason why the highway

did not play a role in the choice of housing. The respondents barely suffer from the negative effects that the highway brings with it. Taken this two into account – not realizing that the highway brings positive effects with it and barely suffering from the negative effects – it is quite logical that in this case the highway has no impact on the residential satisfaction.

Subsequently, according to the literature citizen participation is a concept that in recent years increasingly is used. Governments nowadays do not make decisions on their own anymore. They have to share their power and influence with various other actors. It is investigated whether this also applies in practice, namely to the project 'Knooppunt Joure'. The stakeholder manager indicates that the project office has to deal with many actors which all have an interest in the project. The stakeholder manager indicates that the project office tries to engage all actors as much as possible. One of these actors are the residents. According the stakeholder manager, the project office is always very open to the environment and the residents. He indicates that the respondents are not only associated with the project on the basis of information, but also on the basis of active involvement. On the basis of information from the stakeholder manager it can be said that the active involvement of residents corresponds with what is described in the literature on citizen participation. In addition to the opinion of the stakeholder manager, it is also interesting to hear the views of the residents. On the basis of in-depth interviews it is investigated whether the residents have been actively involved in the project. Even though the stakeholder manager says that the residents have been actively involved, the majority of the respondents indicate they have not been actively involved. Explanations can be given. The stakeholder manager indicates that the residents were actively involved in the project. But, he did not mention how many residents were actively involved and where these residents came from. Coincidentally, the results of the in-depth interviews show that only five out of twelve residents have been actively involved. When a respondent has not been actively involved, this was also his/her own choice. Despite the majority has not been involved, the results are still in line with the literature. After all, the concept citizen participation is taken seriously and is used. Residents are actively involved in the project, and these residents are very enthusiastic about it.

Regarding the provision of information, the stakeholder manager indicates that the project office sends newsletters by post to the nearest residents. The residents confirm this and show that the content of this information is sufficient and that the quality is good. The project office wants to spread more information during the realization of the road. The stakeholder manager indicates that the contractor is also responsible for providing information during the realization phase. The contractor should clearly indicate the planning and inform the residents about the planning. Thereby, the contractor is also responsible for the nuisance, and should inform the residents about this nuisance. This again corresponds with the views of the respondents about what for information they want to receive during the realization phase, namely information about the planning and information about nuisance. An explanation can be given for these two answers. If the respondents look at it from the perspective of a road user, it is important to know what kind of nuisance will be experienced. If the respondent looks at it from the perspective of a resident, it is important to know how far the constructor will be with the construction of the road.

It is striking that the results do not match with the expectations which are outlined at the start of this study. In this case the received information and the involvement or no involvement have no influence on the residential satisfaction. Also for this explanations can be given. First, it has been noticed that

the respondents have never really thought about the highway and residential satisfaction. They take it as it is and are not really aware of the presence of the highway. However, they are aware of the adjustment of the highway, but have never experienced such a big project before. It is also stated that it is the respondent's own choice to not be actively involved, and it therefore has no effect on the residential satisfaction. Finally, it must be said that the respondents are looking forward to the end result and therefore it may be that the respondents focus more on the end results instead of how they are involved by the project.

Finally, it is important to identify a number of issues. It has to be said that no generalizations can be made on the basis of the qualitative data, because only twelve respondents were interviewed. With this is meant that the results do not have to correspond with other residents who are dealing with plans for highway adjustment projects. In this case study, the respondents do actually not realize that the highway brings positive and negative effects with it. And that is also the reason that the highway did not play a role in the choice of housing. However, this will certainly not apply in all other cases. In other cases the residents may certainly be aware of the positive and negative externalities. As described in the introduction of this thesis, both externalities might influence people's choice to live near a highway or to live further away from a highway. Therefore, the conclusion about that the highway did not play a role in the choice of housing is not generalizable. Another conclusion that emerges from this study is that the highway does not affect the residential satisfaction. However, it can be said with great certainty that in other cases, the highway does affect the residential satisfaction. For example, think of when someone faces continuous problems with noise, smell or sight pollution. In such a case, a highway can really have an effect on the residential satisfaction. Therefore, the conclusion emerged from this study about the highway and residential satisfaction is not generalizable. However, despite that no generalizations can be made, perhaps the conclusions emerged from this study may apply to other residents who live within one kilometer from the roundabout of Joure. It is important to mention that each case has – of course – a different context. This context has an influence on the results. However, despite that no generalizations can be made, the data is reliable and can be used for further research.

9.3 Recommendations

This study showed that all respondents are satisfied with the information they received about the project. The newsletters provided by the project office has been experienced as sufficient and good. The manner of providing information can certainly be recommended. Thereby, the study also showed that the majority of the respondents have not been actively involved in the project. Partly because of their own choice to not visit information evenings. The question may now be asked whether or not residents should be actively involved in infrastructure projects. A short but powerful answer can be given. Residents should absolutely be actively involved in projects. Firstly, there is always a group of residents who think it is really nice to be actively involved. Secondly, residents should be actively involved in order to prevent any future resistance. If the residents are not actively involved in the project, the likelihood of the concept NIMBY may be larger. Therefore, it can be recommended that residents should be actively involved infrastructure projects, also to create support which again might result in no or less resistance.

For further research it might be interesting to interview the same respondents within three years, at least after the project is completed. In future, it is interesting to examine how the respondents have experienced the construction phase, and how they have been involved during this phase. It may also be interesting to investigate whether the new situation has an influence on the residential satisfaction. An infrastructure project is always aiming to improve the accessibility and traffic flow. The question remains, will this improvement also contribute to the residential satisfaction? This can also be examined on the basis of in-depth interviews and could then be compared to the results of this study.

9.4 Reflection

This last section describes the reflection. The reflection consists of three parts: a reflection on the literature review, a reflection on the research methods and a reflection on the research results.

Literature review

It is discussed to what extent the theory was useful for the research. The concept of residential satisfaction was the most important theory of this study, as this concept is the basis of this research. The factors that contribute to the residential satisfaction are also described. On the basis of residential satisfaction it is checked whether the factors are also mentioned among the respondents. Also, the positive and negative externalities of a highway was important to mention in this research. It is examined to what extent these externalities have an influence on the residential satisfaction. The concept of citizen participation has also been very useful for this research. On the basis of this concept it is examined to what extent residents have been involved in the infrastructure project 'Knooppunt Joure'. Knowledge of the concept was necessary to determine whether the project office made also use of citizen participation. Then, the concept NIMBY remains. This concept has also been important for this research. However, it turned out that NIMBY did not play a role in this case. It can be said that the concept therefore has not been useful for this research. However, it must be said that in advance you do not know whether the concept NIMBY plays a role in the case. In addition, there may be still talk of NIMBY. However, among the respondents NIMBY did not play a role.

It is important to mention that the key concepts of the main-question and the underlying sub-question was good to define on the basis of literature. However, it must also be said that the word residential satisfaction is not always understood by the respondents. This soon became clear after a few interviews. In the following interviews, the concept residential satisfaction was described differently so that the respondents understood it better.

Research methods

It is seen whether correct research methods are used to find an answer on the main question and sub-questions. For this research it is chosen to use a case study, namely 'Knooppunt Joure' and on the basis of this case, to held in-depth interviews with the residents who live within one kilometer of the roundabout. In-depth interviews are most appropriate because the research question requires in-depth qualitative data. The research is about perceptions, experiences, values and feelings. It is difficult to explore feelings and perceptions on the basis of surveys. Though, surveys could be used for additional information. For example, to what extent other residents consider the received

information as useful and to what extent they have been actively involved in the project. This results could have been compared with the results from the in-depth interviews.

The study population – namely residents who live within one kilometer of the roundabout – was quite easily to reach. On the basis of letters the respondents were informed. The respondents have emailed or called to schedule an appointment. It took only a few weeks before responses came in. Eventually, twelve residents were interviewed. It can be said, that it was quite easy to find respondents. Perhaps this is because the researcher is known in the region, and then, people may be more inclined to participate in a study.

Research results

In this case the problems that occur on the roundabout are clearly recognized by the respondents. The respondents are well aware of these problems. Therefore, the respondents are positive about the infrastructure project. However, it must be taken into account that this will never be the case in all other infrastructure projects. The context is really relevant. It was also found that respondents are quite satisfied with the information they received about the project. And, that the respondents who were actively involved in the project, found it very pleasant to be actively involved. This is not necessarily the case in other infrastructure projects. Therefore, also for these outcomes it becomes clear that the context is important. Another important finding is that most respondents have not been actively involved in the project. This is partly because the respondent's own choice. There might be wondered whether residents should be actively involved in infrastructure projects. It is advisable to actively involve residents in order to prevent any future resistance.

It is also important to mention that the results do not meet the expressed expectations. It was expected that if a resident has not received information and has not been actively involved in the project, this would have a negative impact on the residential satisfaction. However, this is not the case. A reason is that it is the respondent's own choice to not visit information evenings, and sessions. And, it was expected that if a resident has received information and has been actively involved in the project, this would have a positive impact on the residential satisfaction. Also, this is not the case. It is difficult to measure residential satisfaction on the basis of information provision and citizen participation. Besides, the concept residential satisfaction is not always understood by the respondent which makes it even more difficult to measure residential satisfaction. For further research, it would perhaps be easier to measure the residential satisfaction on the basis of the new situation compared to the previous situation.

References

- Arts, J. (1998) *EIA Follow-up, On the Role of Ex Post Evaluation in Environmental Impact Assessment*. GeoPress, Groningen.
- Banister, D. (2002). *Transport Planning*. London: Spon Press.
- Batchgeo (2015). *Location respondents*. Accessed on 09/07/2015 via <https://nl.batchgeo.com/map/eob8572eef7a0a55d2e356d55dbc4b1a>.
- Bateman, I., Day, B., Lake, I. and Lovett, A. (2001) *The effect of road traffic on residential property values: a literature review and hedonic pricing study*. Scottish Executive and Stationery Office, Edinburgh.
- Brower, S. (2003). *Designing for community*. College Park: University of Maryland Press.
- Buys, L. & Miller, E. (2012). Residential satisfaction in inner urban higher-density Brisbane, Australia: role of dwelling design, neighbourhood and neighbours. *Journal of Environmental Planning and Management*, 55(3), 319-338.
- Cravioti, J., Yamasue, E., Okumura, H. & Ishihara, K. (2013). Road transport externalities in Mexico: estimates and international comparisons. *Transport Policy*, 30(2013), pp. 63-76.
- Dear, M. (1992). Understanding and overcoming the NIMBY syndrome. *Journal of the American Planning Association*, 58 :3, 288-300.
- Devine-Wright, P. (2012). Explaining 'NIMBY' objections to a power line: the role of personal, place attachment and project-related factors. *Environment and Behaviour*, 45(6) 761-781.
- Généreux, M., Auger, N., Goneau, M. & Daniel, M. (2007). Neighbourhood socioeconomic status, maternal education and adverse birth outcomes among mothers living near highways. *Journal of Epidemiology and Community Health*, vol. 62, pp. 695-700.
- Geurtz, C. & Wijdeven, T. van de (2010). Making citizen participation work: the challenging search for new forms of local democracy in the Netherlands. *Local Government Studies*, 36:4, 531-549.
- Giuliano, G. (1989). New directions for understanding transportation and land use. *Environment and Planning A*, 21, 145-159.
- Hamersma, M., Tillema, T., Sussman, J. & Arts, J. (2014). Residential satisfaction close to highways: the impact of accessibility, nuisances and highway adjustment projects. *Transportation research*, vol. 59, pp. 106-121.
- Heeres, N., Tillema, T. & Arts, J. (2012). Integration in Dutch planning of motorways: From "line" towards "area-oriented" approaches. *Transport Policy*, 24(2012), 148-158.
- Hur, M. & Morrow-Jones, H. (2008). Factors that influence resident's satisfaction with neighborhoods. *Environment and Behaviour*, 40(2008), 619-635.
- INFRAS, CE Delft and ISI, 2007. *Handbook on Estimation of External Cost in the Transport Sector. Produced within Internalisation Measures and Policies for all external Cost of Transport [IMPACT]*. CE Publications, Delft, Netherlands.
- KiM (2013). *Mobiliteitsbalans 2013*. Den Haag: Kennisinstituut voor Mobiliteitsbeleid.

- Koyama, S. & Kishimoto, A. (2001). A valuation of road transport external costs in Japan. *Transport Policy Studies' Review*, 4-2.
- Kroesen, M., Molin, E., Vos, H., Janssen, S. & Wee, B. van (2010). Estimation of Effects of Transportation Noise Annoyance on Residential Satisfaction. *Transportation Research D*, 15, 144-153.
- Mesch, G. S., & Manor, O. (1998). Social ties, environmental perception, and local attachment. *Environment and Behavior*, 30, 504-519.
- Michels, A. & De Graaf, L. (2010). Examining citizen participation: local participatory policy making and democracy. *Local Government Studies*, 36:4, 447-491.
- MIRT (2014). *MIRT projectenboek 2014*. Accessed on 25/01/2015 via <http://mirt2014.mirtprojectenboek.nl/>.
- MNP, CPB, RPB (2006). *Welvaart en leefomgeving*. Accessed on 25/01/2015 via <http://www.welvaartenleefomgeving.nl/>.
- Mom, G. & Filarski, R. (2008). *Van Transport Naar Mobiliteit: De Mobiliteitsexplosie [1895-2005]*. Zutphen: Wallburg Pers.
- Pelekasi, T., Menegaki, M. & Damigos, D. (2012). Externalities, NIMBY syndrome and marble quarrying activity. *Journal of Environmental Planning and Management*, 55:9, 1192-1205.
- Putnam, R.D. (2000). *Bowling alone. The collapse and revival of American community*. New York: Simon & Schuster.
- Rijkswaterstaat (2015). *Tracéwet*. Accessed on 19/08/2015 via <http://www.rijkswaterstaat.nl/wegen/wetten-regels-en-vergunningen/wetten-aanleg-en-beheer/tracewet.aspx>.
- Ritchie, S., Lewis, J., McNaughton Nicholls, C. & Ormston, R. (2014). *Qualitative research practice: a guide for social science students and researchers* (2nd edition). Los Angeles: Sage.
- RWS (2009). *Werkwijzer MinderHinder*. Accessed on 03/07/2015 via http://www.rijkswaterstaat.nl/images/Werkwijzer%20Minder%20Hinder%20Wegen%20Deel%20A%20De%20hoofdlijn_tcm174-336140.pdf.
- Seo, K., Golub, A. & Kuby, M. (2014). Combined impacts of highways and light rail transit on residential property values: a spatial hedonic price model for Phoenix, Arizona. *Journal of Transport Geography*, 41 (2014), 53-62.
- Smith, C. J. (1981). Residential proximity and community acceptance of the mentally ill. *Journal of Operational Psychiatry*, 12, 1: 2-12.
- Tillema, T., Wee, van B. and Ettema, D. (2010). The influence of (toll-related) travel costs in residential location decisions of households: A stated choice approach. *Transportation*, 44, 785-796.

Attachments

Attachment I: letter/invitation interview



Aan de hoofdbewoner van dit adres

Geachte meneer, mevrouw,

Mijn naam is Beitske Tymstra en op het moment volg ik de Master Environmental and Infrastructure Planning aan de Rijksuniversiteit in Groningen. Een onderdeel van deze Master is het doen van onderzoek. Mijn afstudeeronderzoek gaat over de woontevredenheid van bewoners die in de buurt van een snelweg wonen, in dit geval in de buurt van Knooppunt Joure. Dit wil ik graag onderzoeken door middel van interviews met verschillende bewoners in Joure.

Zou u mij willen helpen met mijn onderzoek door mee te werken aan een interview? Ik zou het zeer waarderen. Het interview gaat over een drietal thema's: de keuze destijds voor de huidige woonlocatie, de huidige beleving van de woonlocatie en uw beleving van (mogelijke) veranderingen hierin. Specifieke voorkennis is niet nodig. Uw informatie wordt vertrouwelijk en anoniem behandeld en wordt alleen gebruikt voor wetenschappelijke doeleinden.

Het interview zal worden afgenomen in de periode april – mei 2015. Het duurt ongeveer een uur en ik kan bij u thuis langskomen om het interview af te nemen. Het interview kan tijdens kantooruren of 's avonds plaatsvinden. Uw voorkeur is hierbij leidend. Ik hoop dat de hierboven genoemde informatie duidelijk is en dat u wilt meewerken aan het onderzoek. U zou mij er ontzettend mee helpen. Voor eventuele vragen en/of deelname kunt u mij telefonisch of per mail bereiken.

Alvast hartelijk dank voor uw reactie!

Met vriendelijke groet,

Beitske Tymstra
Rijksuniversiteit Groningen
Faculteit Ruimtelijke Wetenschappen
Mobiel: 06-48510359
Email: b.tijmstra@student.rug.nl



Interviewhandleiding

Een introductie, openingsvragen, kernvragen en afrondende vragen

Interview nummer	
Datum interview	
Locatie	
Naam participant	
Geboortedatum participant	
Lengte interview	

Algemene introductie

Toelichting onderzoek

Mijn afstudeeronderzoek gaat over de woontevredenheid van bewoners die in de buurt van een snelweg wonen, in dit geval in de buurt van Knooppunt Joure. Dit wil ik graag onderzoeken door middel van interviews met verschillende bewoners in Joure.

Het interview gaat over een drietal thema's: de keuze destijds voor de huidige woonlocatie, de huidige beleving van de woonlocatie en uw beleving van (mogelijke) veranderingen hierin. Het interview zal ongeveer een uur duren, maar dit hangt af van hoe veel u met mij wilt delen. Uw informatie wordt vertrouwelijk en anoniem behandeld en wordt alleen gebruikt voor wetenschappelijke doeleinden.

Heeft u nog vragen voordat ik start met het interview?

Krijg ik uw toestemming om het interview op te nemen?

** Aanzetten van de recorder*

** Herhaal de vraag of het interview mag worden opgenomen – mondelinge toestemming*

Openingsvragen – persoonlijke kenmerken

Als eerste wil ik u vragen of u mij kan voorzien van algemene informatie over uzelf.

Kunt u mij wat meer vertellen over uzelf?

1. Wat is uw naam?	
2. Wat is uw geboortjaar?	
3. Wat is uw geboorteplaats? Komt u uit de regio?	
4. Geslacht (door mijzelf genoteerd).	

5. Wat is uw hoogst voltooide opleiding?	
6. Wat voor beroep oefent u uit?	
7. Uzelf meegerekend, uit hoeveel personen bestaat uw huishouden?	
8. Hoe ziet de samenstelling van uw huishouden er uit (burgerlijke staat)?	
9. Beschikt uw huishouden over een of meerdere auto's?	

Ik zou nu graag iets meer willen weten over uw woonlocatie.

10. Hoe lang woont u hier al?	
11. Waar heeft u hiervoor gewoond?	
12. Hoe beleeft u uw woonlocatie? Hoe tevreden bent u met uw woonlocatie? <ul style="list-style-type: none"> • welke factoren dragen hierbij aan? • kenmerken van het huis? • kenmerken van de omgeving? • of kenmerken van huis én omgeving? 	
13. Waarom bent u hier gaan wonen? <ul style="list-style-type: none"> • welke factoren hebben hierbij een rol gespeeld (huis en/of omgeving)? 	
14. Is de woonbeleving veranderd sinds u hier woont en waardoor?	
15. Maakt u zich zorgen over dingen in uw omgeving?	

Kernvragen

Nu ik u wat beter heb leren kennen, zou ik graag een aantal vragen willen stellen over in hoeverre de snelweg en de rotonde invloed hebben op uw woonlocatie.

De snelweg met betrekking tot woontevredenheid

16. U woont dichtbij een snelweg, heeft de snelweg invloed gehad op uw woonkeuze? Leg uit.	
17. Welke voordelen ervaart u van dichtbij de snelweg wonen (bereikbaarheid)?	
18. Levert dit voordeel ook daadwerkelijk voordelen voor u op? Heeft u er echt voordeel van?	
19. Welke nadelen ervaart u van dichtbij de snelweg wonen (overlast)?	
20. In hoeverre ervaart u de nadelen als hinderlijk?	

21. Hoe gaat u met de beleefde overlast om?	
22. Heeft u veel last van de files die regelmatig plaatsvinden hier – vindt u de files ook vervelend? Is dit door de jaren heen veranderd (verergerd/verminderd)? En waar komt dit dan door dat het is veranderd door de jaren heen?	
23. Heeft u veel last van geluidsoverlast? Is dit door de jaren heen veranderd (verergerd/verminderd)? En waar komt dit dan door dat het is veranderd door de jaren heen?	
24. Gebeuren er volgens u veel ongelukken op en rondom de rotonde? <ul style="list-style-type: none"> • zo ja, ervaart u daar hinder van? • is dit door de jaren heen veranderd (verergerd/verminderd)? • en waar komt dit dan door dat dit is veranderd door de jaren heen? 	
25. Hoe ervaart u in het algemeen de verkeersveiligheid van de rotonde?	
26. Hoe weegt u de bereikbaarheid af tegen de hinder die u ervaart?	
27. Heeft het wonen naast de snelweg invloed op uw woontevredenheid? Leg uit.	
28. Heeft de filevorming invloed op uw woontevredenheid? Leg uit.	

Ik zou u nu graag wat vragen willen stellen over het infrastructuurproject.

Het project met betrekking tot woontevredenheid

29. In hoeverre bent u tevreden met de huidige situatie Knooppunt Joure?	
30. Maakt u zelf vaak gebruik van de rotonde? Af en toe – regelmatig – dagelijks?	
31. Ervaart u zelf veel hinder van de huidige situatie?	
32. Heeft de huidige situatie invloed op uw woontevredenheid (eventueel benoemen bomenkap). Leg uit.	
33. In hoeverre bent u op de hoogte van de geplande werkzaamheden rondom het project?	
34. Heeft u enig idee waarom de rotonde wordt aangepakt?	
35. Bent u op de hoogte van hoe het er uit zal komen te zien (fly-over)?	
36. In hoeverre bent u het ermee eens dat de rotonde wordt verwijderd en er een fly-over voor in de plaats komen (voor of tegen)?	

Welke redenen spelen hierbij een rol? Wat is voor u belangrijk bij zo'n project?	
37. Heeft u zelf belang bij de aanpak van de rotonde? Leg uit.	
38. Wie denkt u dat meer belang heeft bij de aanpak van de rotonde, de weggebruiker of de omwonende? Leg uit.	

Informatie voorziening

39. Heeft u informatie ontvangen over het project?	
40. Van welke bronnen heeft u informatie gekregen (projectbureau; buurvrouw; dorpsbelang)?	
41. Ontvangt u nog steeds informatie over de verschillende werkzaamheden rondom het project? <ul style="list-style-type: none"> • zo ja, op welke wijze wordt er informatie verstrekt (post/mail)? • wat doet u met deze informatie? • zo niet, waarover had u informatie willen ontvangen en op welke wijze? 	
42. Ontvangt u voldoende informatie? En vindt u de kwaliteit van de informatie goed?	
43. Ervaart u de informatie als betrouwbaar?	
44. Wat voor informatie is belangrijk voor u?	
45. Hoe belangrijk vindt u het dat de omwonenden worden voorzien van informatie?	
46. Wat voor informatie zou u willen ontvangen tijdens de realisatiefase (bijvoorbeeld informatie over verkeershinder)?	
47. Bent u van mening dat het projectbureau informatie moet verstrekken, of dat bewoners zelf op zoek moeten gaan naar informatie?	
48. Op welke wijze ontvangt u het liefst informatie: via de post of per mail?	
49. Heeft het wel/niet ontvangen van informatie invloed op uw woontevredenheid? Leg uit.	

Betrokkenheid bewoners

50. Heeft u het idee dat bewoners actief bij het project zijn betrokken geweest (meedenken; meehelpen)? <ul style="list-style-type: none">• zo ja, op welke manier zijn de bewoners betrokken geweest bij het project?• zo niet, op welke wijze hadden bewoners naar uw mening wel kunnen worden betrokken?	
51. Bent u zelf betrokken geweest bij het project? Waarom wel/niet?	
52. Zou u in de volgende fasen van het project meer betrokken willen zijn? Waarom wel/niet?	
53. Op welke manier zou u dan betrokken willen zijn? Actief betrokken, denk hierbij aan meedenken en meehelpen – of, betrokken zijn aan de hand van informatie?	
54. Zijn er bewoners uit uw buurt betrokken geweest bij het project?	
55. Hoe belangrijk vindt u het dat bewoners actief worden betrokken bij het planning proces?	
56. Heeft het wel/niet betrokken zijn bij het planning proces invloed op uw woontevredenheid? Heeft het invloed op verwachtingen rond het project? Leg uit.	

Afrondende vragen

57. Wat is namens u de meest efficiënte manier om zoveel mogelijk bewoners te voorzien van informatie?	
58. Op welke wijze kunnen bewoners beter worden betrokken bij infrastructuur projecten?	
59. Wat zou de overheid kunnen doen om uw woonsituatie te verbeteren (compensatie)? Tijdens de bouw? Daarna?	

60. Heeft u nog iets op-, aan te merken of toe te voegen?	
---	--

** Uitzetten van de recorder*

Wat vond u van het interview?

Heel erg bedankt voor uw medewerking!

Attachment III: codebook

General information respondent

Code	Type	Description
Year of birth	<i>Deductive</i>	How old is the respondent?
Place of birth	<i>Deductive</i>	Where was the respondent born?
Gender	<i>Deductive</i>	Male or female?
Education	<i>Deductive</i>	What is the highest completed education of the respondent?
Profession	<i>Deductive</i>	What is the profession of the respondent?
Household composition	<i>Deductive</i>	With how many people does the respondent live?
Marital status	<i>Deductive</i>	What is the marital status of the respondent?
Car(s)	<i>Deductive</i>	How many cars does the respondent have?

Residential area respondent

Code	Type	Description
Dwell time	<i>Deductive</i>	For how long does the respondent lives here?
Previous residential area	<i>Deductive</i>	Where did the respondent live before?
Residential satisfaction	<i>Deductive</i>	How satisfied is the respondent with its residential area?
Dwelling characteristics	<i>Deductive</i>	What influence have dwelling characteristics on the residential satisfaction of the respondent?
Neighborhood factors	<i>Deductive</i>	What influence have neighborhood factors on the residential satisfaction of the respondent?
Choice of residential area	<i>Deductive</i>	Why does the respondent have chosen to live there?
Change of living experience	<i>Deductive</i>	Has the living experience of the respondent changed during the years?
Worry about environment	<i>Deductive</i>	Does the respondent worry about his surroundings?

The highway with respect to residential satisfaction

Code	Type	Description
Highway influence housing choice	<i>Deductive</i>	Did the highway have had an influence on the residential choice of the respondent?
Benefits highway	<i>Deductive</i>	What benefits does the respondent experience by living near the highway?
Actual benefits	<i>Deductive</i>	Are these benefits actually benefits for the respondent?
Cons highway	<i>Deductive</i>	What cons does the respondent experience by living near the highway?
Actual nuisance	<i>Deductive</i>	To what extent does the respondent experiences the cons of the highway as nuisance?
Handling nuisance	<i>Deductive</i>	How does the respondent deal with the experienced nuisance?
Nuisance congestion	<i>Deductive</i>	Is the respondent affected by the traffic jams?
Worsening congestion	<i>Deductive</i>	Has the congestion become worse during the years according to the respondent?
Noise	<i>Deductive</i>	Does the respondent experience hindrance of noise?
Worsening noise	<i>Deductive</i>	Has the hindrance of noise become worse during the years according to the respondent?
Accidents	<i>Deductive</i>	Do many accidents happen on the roundabout according the respondent?
Worsening accidents	<i>Deductive</i>	Do there occur more accidents on the roundabout during the years according to the respondent?
Safety roundabout	<i>Deductive</i>	How does the respondent experience the safety of the roundabout?
Accessibility – nuisance	<i>Deductive</i>	How does the respondent weights accessibility against nuisance?
Highway – residential satisfaction	<i>Deductive</i>	Does living near the highway have an impact on the residential satisfaction of the respondent?
Congestion – residential satisfaction	<i>Deductive</i>	Does congestion have an impact on the residential satisfaction of the respondent?

The project with respect to residential satisfaction

Code	Type	Description
Satisfaction current situation	<i>Deductive</i>	To what extent is the respondent satisfied with the current situation of the roundabout?
Use roundabout	<i>Deductive</i>	How often does the respondent use the roundabout on a weekly basis?
Nuisance current situation	<i>Deductive</i>	Does the respondent experience hindrance of the current situation?
Current situation – residential satisfaction	<i>Deductive</i>	Does the current situation have an influence on the respondent's residential satisfaction?

Awareness planned work	<i>Deductive</i>	To what extent is the respondent aware of the activities planned?
Reason approach roundabout	<i>Deductive</i>	Does the respondent know why the roundabout will be removed?
Awareness fly-over	<i>Deductive</i>	Is the respondent informed of how it will look like in the future (fly-over)?
For or against fly-over	<i>Deductive</i>	Is the respondent for or against the fly-over?
Self-interest fly-over	<i>Deductive</i>	Does the respondent have interest in addressing the roundabout?
Road-user / residents	<i>Deductive</i>	Who has more interest in addressing the roundabout according the respondent, the road-users or the local residents?

Information provision

Code	<i>Type</i>	Description
Received information	<i>Deductive</i>	Does the respondent have received information about the project?
Source of information	<i>Deductive</i>	From which source does the respondent have received information?
Contemporary information	<i>Deductive</i>	Does the respondent still receives information about the project?
Handling information	<i>Deductive</i>	How does the respondent deal with the information?
Sufficient information	<i>Deductive</i>	Does the respondent receive sufficient information?
Quality of information	<i>Deductive</i>	Does the respondent thinks that the quality of the information can be considered as good?
Reliable information	<i>Deductive</i>	Does the respondent thinks that the information can be considered as reliable?
Important information	<i>Deductive</i>	What kind of information is important for the respondent?
Residents and information	<i>Deductive</i>	How important is it that residents are provided with information, according to the respondent?
Information construction phase	<i>Deductive</i>	What kind of information does the respondent want to receive during the construction phase?
Project office – residents	<i>Deductive</i>	Does the respondent think that the project office is responsible for information provision or that the residents should look for information?
Information post/mail	<i>Deductive</i>	In which manner does the respondent wants to receive information, by post or by mail?
Information provision - residential satisfaction	<i>Deductive</i>	Does the provision of information has an influence on the respondent's residential satisfaction?

Involvement residents

Code	Type	Description
Citizen participation	<i>Deductive</i>	Does the respondent have the idea that residents have been actively involved in the project?
Respondent's participation	<i>Deductive</i>	Was the respondent involved in the project?
Involvement next phase	<i>Deductive</i>	Does the respondent will be more involved in the next phase?
Which way involvement	<i>Deductive</i>	In which way would the respondent be more involved?
Involvement neighborhood	<i>Deductive</i>	Does the respondent has the idea that neighbors were involved in the project?
Importance involvement residents	<i>Deductive</i>	To what extent the respondent considers it is important that residents are actively involved in the planning process?
Involvement residents – residential satisfaction	<i>Deductive</i>	Does the involvement of residents have an influence on the respondent's residential satisfaction?

Conclusion

Code	Type	Description
Efficiency information provision	<i>Deductive</i>	What is the most efficient way to provide information according to the respondent?
Better involvement respondents	<i>Deductive</i>	In what way can residents be more involved in infrastructure projects according to the respondent?
Improve living conditions	<i>Deductive</i>	What should the government do to improve the living conditions during the construction phase, according to the respondent?
Comments	<i>Deductive</i>	Does the respondent has something to note?

Inductive codes

Code	Type	Description
Three cutting	<i>Inductive</i>	How does the respondent experience the three-cutting?
Past experience	<i>Inductive</i>	What impact has the respondent's experience of the past on the view about actively involved in the project?
Alternative for fly-over	<i>Inductive</i>	What is a good alternative to the fly-over according to the respondent?
Future situation	<i>Inductive</i>	What does the respondent know about the future situation?
Victim future situation	<i>Inductive</i>	Why is the respondent victim of the future situation?
Bought land	<i>Inductive</i>	Why the respondent had to sell a piece of land?
Purpose bought land	<i>Inductive</i>	What is the purpose of this piece of purchased land according to the respondent?