ENHANCING SOCIAL FEASIBILITY OF THE IMPLEMENTATION OF MEASURES INDUCING REDUCED DEMAND IN CAR MOBILITY

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Final thesis

June 17, 2020

Master (MSc.)
Metropolitan Analysis, Design & Engineering (MADE)

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ACKNOWLEDGEMENTS

Thanks to:
Jan Anne Annema and Clemens Driessen, supervisors, for their critical and supporting role during this quest. The provided feedback and advise have been of great value.

Dirk Iede Terpstra, traffic expert, main contact municipality of Amsterdam.
Rosemarie Aben, data analyst FCD, municipality of Amsterdam.
Camiel Roskam, project manager Brug 108, municipality of Amsterdam.
Peter de Vos, project manager rail renovation van Woustraat, GVB.
Thijs Turèl, program manager Urban Data & Intelligence Research & Valorisation, AMS Institute.
Jaap Koen Bijma, innovator, CTO municipality of Amsterdam.
Stephan van Dijk, director of innovation, AMS Institute.
Jeroen van Berkel, alderman, Stadsdeel West, Amsterdam.

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- Dimitri Drijver, project manager “Agenda Autoluw” and circulation measures,
- Jesse Bolscher, advisor for “Agenda Autoluw”,
- Bart van den Hoek, project manager circulation measures at “Agenda Autoluw”,
- Dirk Iede Terpstra, advisor Openbare Ruimte,
- Niels Veld, thesis student at “Agenda Autoluw”,
- Max Klemens, assistant of Danielle for pilot Knip Weesperstraat,
- Barry Ubbels, Verkeer en openbare ruimte, team research and knowledge,
- Jeff Guinee, advisor for “Agenda Autoluw”,
- Marcel Bouman, project leader for the redesign of the van Woustraat,
- Danielle Meiboom, project manager Knip Weesperstraat and liaisons manager for other traffic projects.,
- Fokko Kuik, Policy advisor Verkeer en openbare ruimte, mainly public transport,
- Rick Batelaan, Policy advisor Verkeer en openbare ruimte.

Alfred Kayser, Wouter Kayser and Jasper Kayser, the ever-supporting home office.

SUMMARY

The motive for this research is to contribute to the development of a resilient city, specifically to the transition to a sustainable car system. Road removal or road reallocation can be considered as a means to induce reduced demand for car mobility. Yet, the implementation of these measures can count on resistance. This resistance is negatively influencing the plan development and decision making required for the transition. The aim of this research was to gain insight in and obtain knowledge on the social feasibility of the implementation of measures inducing reduced demand, to be able to enhance this social feasibility and so to enable the transition.

The main research question is:

"How to enhance the social feasibility of the implementation of measures inducing reduced demand in car mobility?"

To answer this question not only the practice of implementing measures inducing reduced demand has been researched, but also theory has been researched to gain insights on an abstract level which can contribute to answering the main research question.

The aim of the research in practice was to gain insight in various aspects of social feasibility for road closure projects in Amsterdam. For this a case study was performed. The case study entailed of an combination of research methods: interviews with professionals, a survey and a reflection group as well as some methods to gain neighbourhood specific knowledge like socio demographics and traffic intensities.

The theoretical research originates from the idea to reflect on the way how transitions, like the one to a sustainable car system, and innovations, such as road removal, come about. For this reflection literature in the realm of Actor Network Theory and Complex Systems Theory was reviewed. From this review two concepts were derived, namely ambiguity and uncertainty. These concepts were explored by interviewing innovators. To them it was asked: How to handle ambiguity and uncertainty in order to be able to innovate?

The case study provided an array of context dependant knowledge and experience. The surveys provided insight in the expectations and perceptions of residents involved in two road closure projects. It turned out that most respondents expected more traffic to drive through their street due to the road closure, yet it also turned out that half of the expectations did not match the perceived impact during the project. In the analysis of the personal perception and acceptance of the project, five types of perception could be distinguished: 1) Does not like the traffic situation in general, 2) Did not like the road closure, 3) Minorly affected by the road closure, 4) Acceptance in general and 5) Not influenced negatively by the road closure. The distribution of the respondents over the five types of perception is almost even. This analysis shows that there is no significant leading opinion.

On an abstract level, it can be concluded that the perceptions show that reality is ambiguous and that expectations are about handling uncertainty. The impact of measures cannot be predicted. Ambiguity and uncertainty are influencing social feasibility, in general as well in these cases.

The interviews with professionals provided insight in the struggles they have and the effort they make to enhance social feasibility of traffic measures. In their experience social feasibility is elusive, yet, they have recommendations for enhancing the social feasibility.

These range from clear information, an appealing vision, benefits outweighing costs, stakeholder involvement and the application of pilot projects.

From the discussion with the reflection group, it could be concluded that knowledge on the mechanism of reduced demand and data on the impact of road closures on the total amount of traffic was lacking. This omission leads to application of worse case scenarios which lead to resistance to the projects by residents. This is an example of how uncertainty influences social feasibility.

The innovators explained in the interviews that there are ways to handle ambiguity and uncertainty in order to innovate and induce transitions. It was even stated that to develop social feasible and robust innovations ambiguity and uncertainty should be embraced. Ambiguity can be embraced through stakeholder involvement. With stakeholder involvement, in all phases of the planning process, a broad perspective on the matter at hand can be obtained, leading to plans that will fit a broad array of people. Uncertainty can be addressed by conducting experiments. Experiments provide a shared learning process which will lead to enhanced social feasibility.

It can be concluded, based on the analysis of the surveys, the interviews and the results of the reflection group, that social feasibility of measures is heavily impacted by ambiguity and uncertainty. Yet, from the reflection on theory, it can be concluded that embracing ambiguity and uncertainty will enhance social feasibility of measures. To achieve this, the professionals and innovators recommend the application of stakeholder involvement and experiments.

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1 INTRODUCTION

This thesis aims to develop knowledge to be able to contribute to the development of resilient cities and specifically to the transition to a sustainable car system. It does so by researching social feasibility of implementation of measures inducing reduced demand in car mobility. To gain insight in this social feasibility a case study has been conducted on the perception of road closures. Next to that the issue is placed in a theoretical perspective for further understanding of how to enhance social feasibility of transitions.

This thesis fits one of the aims of the Master Metropolitan Analysis, Design and Engineering program which is to, through research and learning activities, connect abstract theories and people's everyday lives in order to be able to contribute to the development of, or the transition to, resilient cities (Wageningen UR and TU Delft, 2017).

1.1 TRANSITION TO A SUSTAINABLE CAR SYSTEM

Economic growth and car mobility are reinforcing each other. Yet it is commonly acknowledged that the external costs of car mobility are getting too high (Bertolini, 2017). This insight leads to a change in thinking about mobility. A new balance must be found, creating liveable and accessible cities. Transition needs to be made to a sustainable car system (Bertolini, 2017).

There are several ways to reach this goal. This research looks in measures inducing reduced demand of car mobility, specifically in measures like road removal and road reallocation.

The municipality of Amsterdam acknowledged the need for transition and developed the "Agenda Autoluw" (Restricted car use program). Measures entail, amongst others, the cutting of connections (Gemeente Amsterdam, 2019a). This leads to major improvements in quality of public space and the facilitation of other means of transport. A consequence of these measures is the increase of traffic in other streets which leads to strong resistance of residents of these streets. Figure 1 and 2 show the media coverage of this resistance.


Leuk die autovrije straten, maar elders rijdt het sluipverkeer

Agenda Autoluw Amsterdam wil de auto weren: de stad moet veiliger, rustiger en schoner. Maar de plannen stuiten op kritiek. Vooral op plekken waar straks juist méér auto's komen.

Figure 1: Media coverage of the resistance for "Agenda Autoluw" (NRC, 10th of January 2020)

"Nice, those car free streets, yet traffic diverts to other streets. Amsterdam wants to ban the car, the city has to become saver, calmer, cleaner. Yet the plans are criticised, mainly there where the number of cars increases."


Bewoners kritisch op autoluw Amsterdam: het verlegt de problemen alleen maar

Amsterdam autoluw Plannen om verkeersoverlast aan te pakken, leiden tot verzet onder Amsterdammers. In sommige straten neemt het verkeer juist flink toe.

Figure 2: Media coverage of the resistance for "Agenda Autoluw" (NRC, 16th of January 2020)

"Residents criticise plans for car low Amsterdam: the problems are being relocated. Plans to deal with traffic nuisance provoke opposition from residents. In some streets the traffic will increase significantly".

Dirk Iede Terpstra, policy maker at the municipality of Amsterdam and involved in developing the "Agenda Autoluw", states that the resistance negatively affects the political feasibility of the program. This might influence the wanted transition. From experience the policy makers have a rough idea about the distribution of opinions and various aspects of social feasibility yet this information is not specific enough to be used in advising the decision makers, concerning the mobility measures.

Problem statement:
The lack of knowledge on the various aspects of social feasibility of road removal projects hinders decision making on these measures and thus the transition to a sustainable car system.

1.2 THEORETICAL PERSPECTIVE

The second approach originates from the idea to reflect on the way how transitions, like the one to a sustainable car system, and innovations, like road removal, come about. This reflection might contribute to insights on enhancing social feasibility of road removal projects.

By establishing the "Agenda Autoluw" the municipality of Amsterdam already recognised the need for transition, determined the aim for the future, and has proposed measures. Yet, it can be asked in general: how does the need for transition get recognised, how does the aim get established and how is known which measures will solve the problem? These questions relate to the role of analysis, design and engineering in the process of innovation.

In the approach of the Institute for Advanced Metropolitan Solutions (AMS) analysis (sensing the city), design (creating solutions) and engineering (integrating technology) are the key elements in creating innovation. See figure 3 below. This approach stands at the base of the programme of the Master Metropolitan Analysis, Design and Engineering (Wageningen UR and TU Delft, 2017).

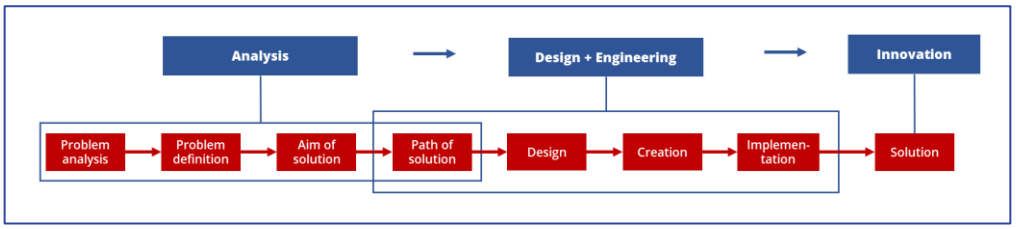


Figure 3: AMS approach to innovation

Literature shows that this is easier said than done. Can analysis paint the picture needed to determine the problem? Can design and engineering predict the impact of solutions? Literature in the realm of the Actor Network Theory points out that analysis cannot lead to anything else than ambiguity (Law, 2004). Literature on the Complex Systems Theory concludes that the future cannot be predicted and is uncertain (Dennis and Urry, 2009). Considering these notions, how will it be possible to innovate? See figure 4.

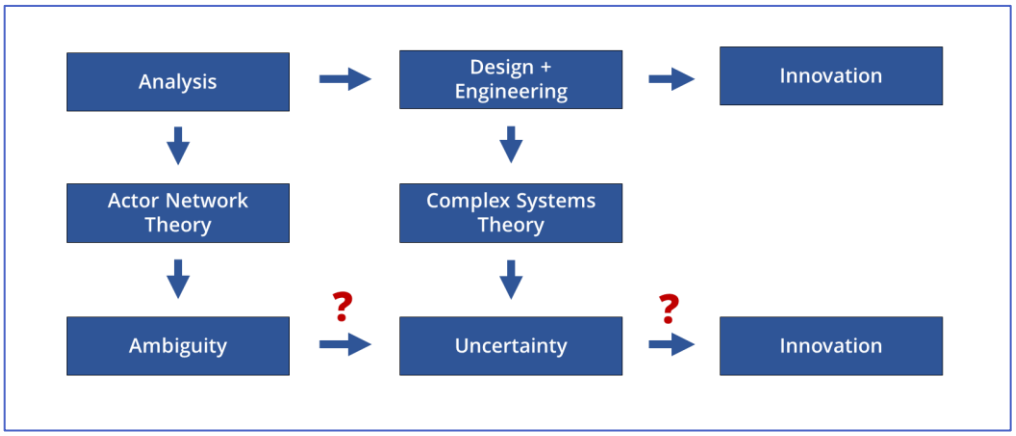


Figure 4: Considering that reality is ambiguous and the future is uncertain, how will it be possible to innovate?

Problem statement:
Because reality is ambiguous it is difficult to determine the problem and the aim for existing challenges. Because the future is uncertain it is difficult to predict the impact of solutions for those challenges. This affects the development of innovations and transitions, like the ones needed to tackle challenges in mobility.

1.3 INTRODUCTION TO THE RESEARCH

1.3.1 PURPOSE STATEMENT

This research aims to develop knowledge on how to enhance social feasibility of the implementation of measures inducing reduced demand in car mobility in order to be able to make the transition to a sustainable car system. This will be achieved by researching practice as well as theory.

1.3.2 RESEARCH QUESTIONS AND METHODS

The main question of this research is:

Q1: How to enhance social feasibility of the implementation of measures inducing reduced demand?

This question is approached from two sides, the practical and the theoretical.

The practice of implementing of measures inducing reduced demand.

The sub questions in the research of practice are:

Q2: What aspects play a role in social feasibility in the case of road removal or road reallocation?

Q3: How do those aspects influence the social feasibility?

To be able to answer these questions a case study is conducted.

Theory on the role of analysis, design and engineering in innovation and transition.

The sub questions in the research of theory are:

Q4: Can reflection on the role of analysis, design and engineering in the innovation process lead to a contribution in answering the main research question of this research: How to enhance social feasibility of the implementation of measures inducing reduces demand?

To be able to answer this question innovators were interviewed. To them it was asked:

Q5: How to handle ambiguity and uncertainty in order to be able to innovate?

The overview of the research design is depicted in figure 5.

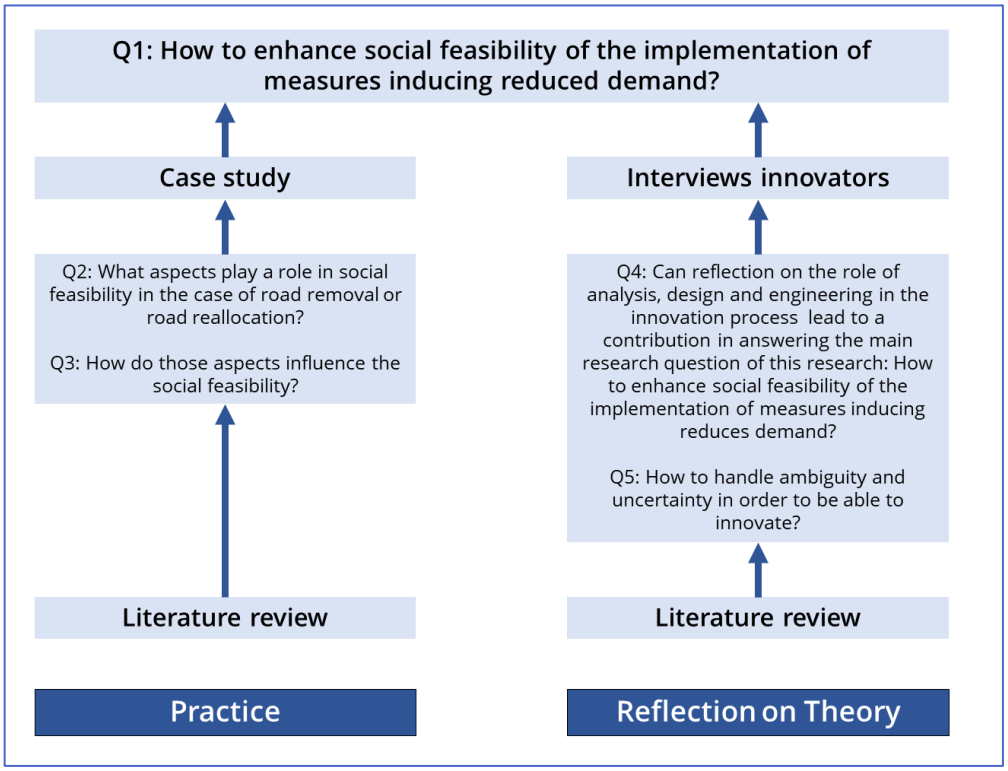


Figure 5: Overview of the research design

1.3.3 KNOWLEDGE GAP, SCIENTIFIC RELEVANCE

Although there are studies on social feasibility of road projects (see section 3.4) no records can be found of case studies in which real life situations are researched in depth to gain context dependant knowledge on social feasibility of road closure projects.

By collecting data from several sources a broad view on the different aspects of social feasibility can be created. Insight in those aspects, and their possible relations, can increase the knowledge on influencing social feasibility of road closure projects.

Also no records can be found of research connecting case studies, looking into the several aspects of social feasibility of a road closure project, and reflection on the role of analysis, design and engineering in innovation and transition, in order to be able to contribute to enhancing social feasibility of road closure projects.

By connecting the results of a case study on social feasibility of road closure projects with the results of a reflection on the role of analysis, design and engineering in innovation and transition a gap in research will be filled.

1.4 READING GUIDE

In chapter 2, the purpose of the several methods used in this research is described as well as the way the methods are applied.

In chapter 3, literature is reviewed to provide the theoretical background to which this research is conducted.

In chapter 4, the findings from the case study and the interviews are described. The sub questions are also answered in this chapter.

In chapter 5, the main research question is answered, and the implications are discussed.

2 METHODS

In this chapter the purpose of the several methods used in this research is described as well as the way the methods are applied. In section 2.4 it will be explained how the found data were analysed.

2.1 LITERATURE REVIEW

Literature review is conducted to identify relevant research related to the topic of the thesis research. Through this review the state of the art in this realm is captured, including the knowledge gaps, making it possible to reflect on it and to add on to it. The literature review substantiates the problem statement and gives direction to the present research (Bui, 2019).

For this research literature review is conducted with three aims. The first aim was to gain insight in research methods which would be relevant for answering the main research question. The results can be found in this chapter. The second aim was to sketch the context of the topic of reduced demand and the need for the transition to a sustainable car system. See section 3.1. The third aim was to create the conceptual model for this research. See figure 14. Literature was researched to find and explain concepts needed to answer the main research question. See section 3.3 to 3.6.

2.2 PRACTICE: CASE STUDY

To be able to answer the question "What aspects come into play concerning social and political feasibility in the case of road removal or road reallocation?" (Q2) a case study is performed.

> *"Case study research is a qualitative approach in which the investigator explores a real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information"*
> *(Creswell, 2013, p 97)*

A case study is a means to gain context- dependant knowledge and experience. Most of the time it is used to test a hypothesis, yet it can also be used to develop in-depth understanding in how a phenomenon acts in practice (Flyvbjerg, 2006).

Because enhancing social feasibility is a multi-faceted challenge case study research can add valuable knowledge for achieving this aim.

To gain the in-depth knowledge the following methods were used:

- Location related research
- Semi-structured surveys
- Interviews professionals
- Analysis of news media
- Analysis of traffic flows
- Reflection group

2.2.1 LOCATION RELATED RESEARCH

The ideal case for this research would be the monitoring of the social feasibility of a road reallocation project from before the start and till some months after the implementation of the project. Unfortunately, the time span for this is too long to fit in the educational

program. To still be able to gain this insight in social feasibility two projects of long-term road closure were researched. The main difference between the two researched projects and road removal or road reallocation projects is that the former entail temporal closures and the latter entail definite closures. Because the two roads were closed for a long time, more than average, they were considered to provide nearly the same insight as would be obtained in the research of a definite road closure or reallocation project.

The two cases are the closure of Brug 108, due to renovation of the bridge, in the De Clercqstraat and the closure of the Northern part of the van Woustraat, due to renovation of tram rails. See figure 6 for location of these cases. These cases are instrumental to illustrate the different aspects of social feasibility of road closures.

For this research the projects were selected almost randomly. The intention was to find out about the impact of road closures under normal everyday conditions. Although the intention was to select the projects randomly there were some requirements. Floating car data had to be available. The difference in intensities had to be significant, otherwise there would not be a difference to ask questions about. The project had to be no older than two years, otherwise people would not remember the project and the impact anymore.

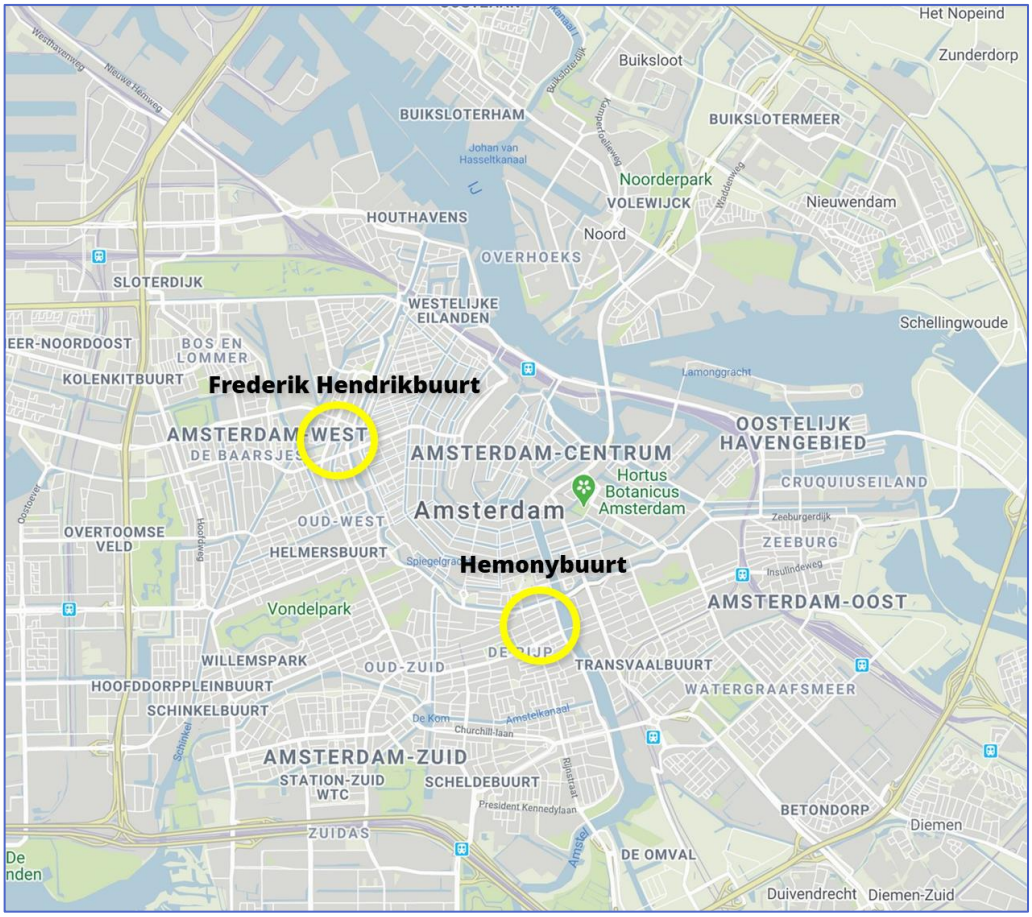


Figure 6: Map of Amsterdam, indicating the two neighbourhoods. (Map obtained from maps.amsterdam.nl)

After the projects already were selected, it was decided that in the case of the van Woustraat only the residents of the Ceintuurbaan, the Tweede Jan Steenstraat and the Hemonystraat would be surveyed because the types of those streets differed from the type of streets in the Brug 108 case. In this way it could be determined whether the type of street is influencing the perception of residents.

Project Brug 108 (Frederik Hendrikbuurt)

In 2107 it was discovered that bridge 108 (De Clercqbrug) due to infestation of the wooden foundation with bacteria was not safe anymore to use for heavy traffic. Therefore, it was decided that trams and lorries were not allowed to pass the bridge. Later research led to the conclusion that the bridge could not be repaired but had to be replaced. From February 2018 the reconstruction of the bridge began, and the bridge was closed for cars. Because the sidewalks were not part of the project pedestrian and bike traffic was still possible. The bridge was opened for cars again in December 2018. In the period bridge was closed car traffic was rerouted trough the Nassaukade and the Tweede Hugo de Grootstraat. This led to a substantial increase of traffic in those streets. See figure figure 7.

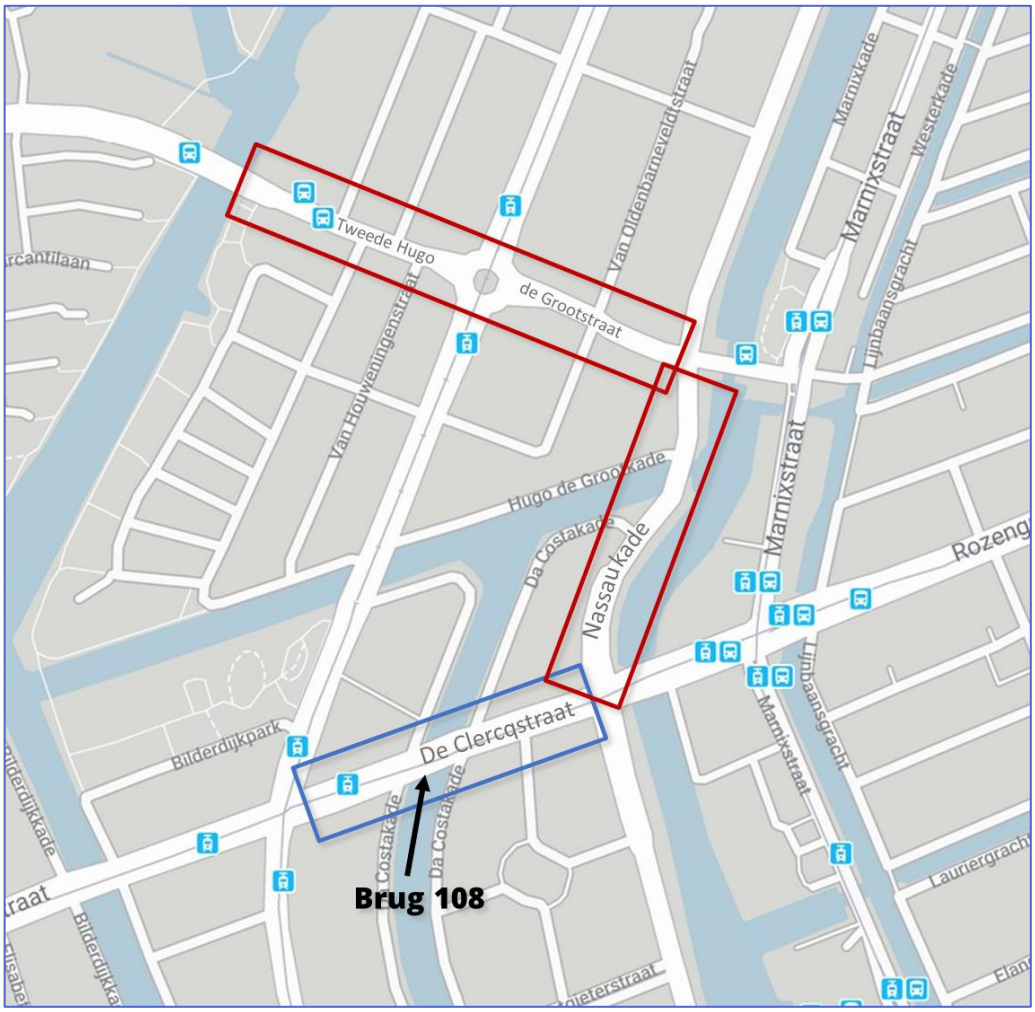


Figure 7: Map of neighbourhood Brug 108 / Frederik Hendrikbuurt
In blue: the closed road. In red: the surveyed streets. (Map obtained from maps.amsterdam.nl)

Project van Woustraat (Hemonybuurt)

Anticipatory to the redesign of the van Woustraat the public transport company, Gemeentelijk Vervoer Bedrijf (GVB), renovated the rails of the tram in this street. This was done in phases. From January 2019 to February 2019 the Northern part of the van Woustraat was taken on. The road closure led to increase of traffic on the Stadhouderskade, Amsteldijk, Ceintuurbaan, Tweede Jan Steenstraat and the Hemonystraat. See figure 8.

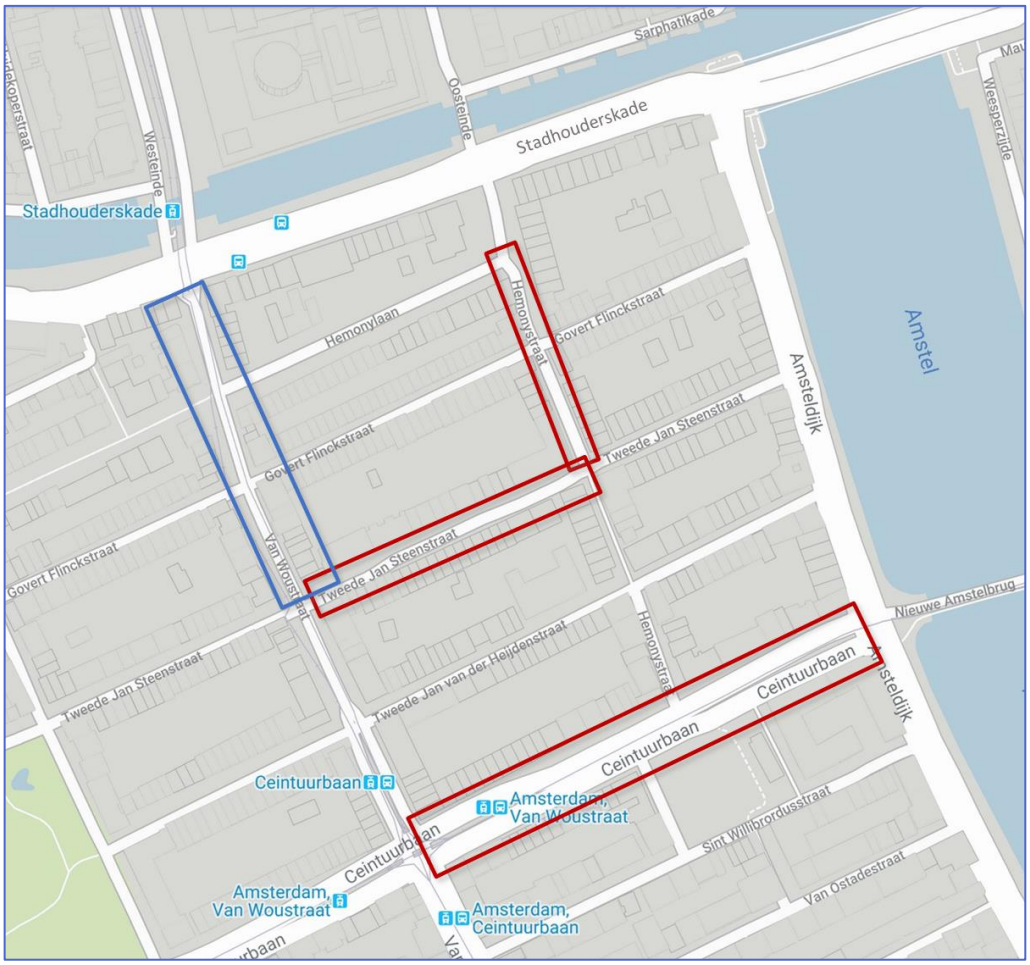


Figure 8: Map of neighbourhood van Woustraat/Hemonybuurt. In blue: the closed road. In red: the surveyed streets. (Map obtained from maps.amsterdam.nl)

To obtain knowledge of the context of the road closure projects characteristics of the neighbourhoods were analysed, specifically information on the sociodemographic aspects which are known to influence perception. The municipality of Amsterdam hosts two public websites: data.amsterdam.nl and maps.amsterdam.nl, which provide "objective, reliable and up to date data and information" (Gemeente Amsterdam, n.d.a), including geo data. For the two neighbourhoods, the Frederik Hendrikbuurt and de Oude Pijp, the most relevant data were collected.

2.2.2 SEMI-STRUCTURED SURVEYS

Surveys are meant to collect information on practice, attitude and knowledge of a specific group of people by means of a predefined list of questions. Survey research allows for exploration of variables and constructs of interest. Surveys ca be subjected to quantitative analysis as well as to qualitative research (Ponto, 2015)

Outcomes of studies depend on the chosen approaches. Where quantitative research is deductive, qualitative research is inductive. Where quantitative research is highly structured, qualitative research is flexible. In social science qualitative research is used frequently. This research can have several purposes. First there is the distinction between descriptive and explanatory research. The second distinction is between fundamental and applied research. Fundamental research aims to add to the existing theoretical knowledge. Applied research aims to find a solution for an existing problem (Boeije, 2010).

Reasons to engage in qualitative research are:

- The explorative power, an array of methods can be used to capture the field of study.
- Through description knowledge is obtained.
- Through data analysis explanation of phenomena can be found.
- Methods can be adjusted in case of change in the field of study.
- Relevant findings can lead to recommendations, that, because of their relevance to the target group, have a reasonable chance of being adopted.
- Qualitative research methods are more sensitive to the needs and possibilities of the participants (Boeije, 2010).

The goal of the survey in this research is to find out what the expectations of residents have, what their personal perception is, and which factors are influencing this perception.

To construct a survey concepts or factors influencing perception found in literature are used. These concepts are used to create questions. In appendix A the process of translating the concepts to survey questions is described. The final list of questions can be found there as well.

29 surveys were conducted in which residents as well as entrepreneurs were questioned. The surveys were analysed quantitatively (to obtain numbers) as well as qualitatively (to obtain opinions), through coding. For analysis sake answers which were almost equal were grouped. The analysis was conducted in Excel by means of pivot tables. To make an analysis of the personal perception of the respondents the content of the given answers as well as the tone and language of the answers were analysed. See Appendix F.2.

The surveys were conducted on the 13th, 14th, 15th and 16th of January 2020. On the 13th there were seven respondents willing to answer the questions, on the 14th as well, on the 15th nine and on the 16th there were six respondents. The first two days 14 people were surveyed on the effects of the closure of the De Clercqstraat. The surveyed people on those days live or work at the Nassaukade, the Hugo de Grootplein and the Tweede Hugo de Grootstraat. See figure 7 and 8.

The second two days, 15 people were surveyed on the effects of the closure of the Northern part of the van Woustraat. The surveyed people on those days live or work on the Ceintuurbaan, the Tweede Jan Steenstraat and the Hemonystraat. See table 1.

Respondents were either resident (23) or entrepreneur (6).

Table 1: Distribution of number of respondents over the two road closure projects

Project	**Number of respondents**
Closure of Brug 108	14 (11 residents, 3 entrepreneurs)
Closure of van Woustraat (N-part)	15 (12 residents, 3 entrepreneurs)
Total	29 (23 residents, 6 entrepreneurs)

The streets where the respondents live or work on have different functions. The Nassaukade (S100) is a central ring road. The Tweede Hugo de Grootstraat (S105) is a city radial, connecting the centre to the city ringroad (A10). The Ceintuurbaan is a city street and the Tweede Jan Steenstraat and the Hemonystraat are resident streets. See figure 9.

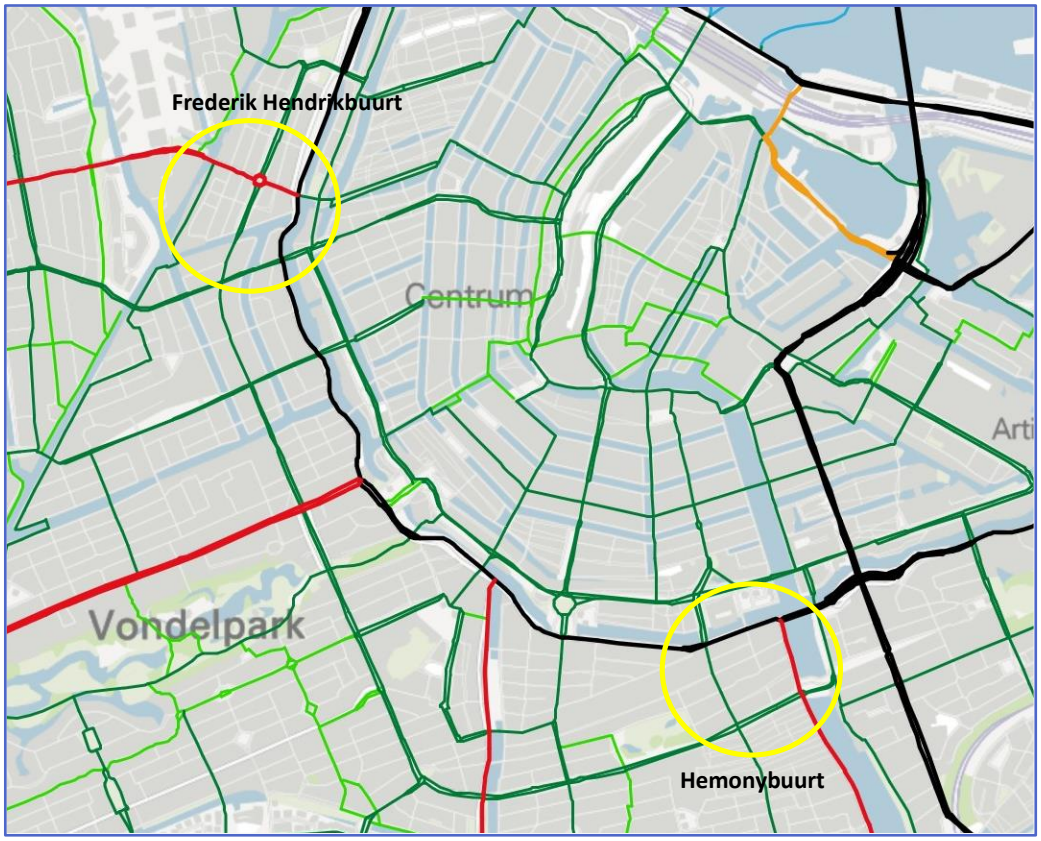


Figure 9: Overview of the mobility infrastructure network in Amsterdam. Red: Plusnet Cars. Black: Plusnet/Corridor Cars. Dark green: Plusnet Bicycle. (Gemeente Amsterdam, n.d.b)

The surveyor was not acquainted with the two neighbourhoods. The respondents were found by randomly ringing doorbells in the streets. The surveys were conducted in the daytime, mainly in the afternoon. The weather was cold and one day rainy as well.

The introduction question, either directly or via an intercom, was: "Would you like to engage in a survey for the benefit of my thesis research?" When people were in doubt it was added that the topic of the survey was on the traffic in their street. When not already agreed this addition convinced some people to contribute.

During the daytime not many people were at home. Most of the people who answered the door, or the bell, did not want to cooperate. Most of the time the reason was that they were busy working. Some of the people did not live on the address long enough to be able to answer the questions, mostly ex-pats. Some people could not cooperate because they did not speak Dutch or English.

From the 29 surveys only 6 were executed at the door. The other respondents invited the surveyor in and sometimes offered something to drink. Four of the surveys were conducted in English.

The respondents were told that the results of the surveys were going to be anonymized.

2.2.3 INTERVIEWS OF PROFESSIONALS

Interviews are a tool to gain insight in the professional or social world of people. The interviewer restricts herself to asking questions. The interviewee provides answers, using his perspective, language and experience. In the case that people are interviewed for their expertise the term "expert interview" is used. There are several types of interviews, depending on the structure of the interview. Interviews in which the questions leave almost no room for elaboration and are asked in a certain order are called structured interviews. For true qualitative research open or semi-structured interviews are more suitable. Here the interviewer has no predetermined plan, but merely a list of topics to be discussed. These interviews give a better insight because it allows the interviewee to answer in their own way and to their own knowledge (Boeije, 2010).

To gain a broad view of the context of the cases the project leaders of the projects, a policy maker of the municipality and a politician were interviewed. To them it was asked what aspects play a role in ensuring social feasibility. The project leaders were asked to tell about the reason of the project, the preparations of the project and the course of the project. The policy maker sketched the considerations and dilemmas which play a role in deciding on road closure or reallocation in general. And the politician was asked for his considerations for and opinion on road closure or reallocation and how to deal with social feasibility of these projects.

The interviews with the project leaders were conducted through e-mail. The other interviews were conducted in separate meetings. The interviews were recorded and transcribed. This transcription was sent to the interviewees for approval. The interviewees gave their consent for the use of the content for this research as well as for them to be named and cited.

2.2.4 ANALYSIS OF NEWS MEDIA

To identify sentiments caused by the two projects an analysis of the media coverage is performed.

With the use of Google and several keywords, like renovation Brug 108, closure of De Clercqstraat, renovation Van Woustraat, closure van Woustraat, news media on the projects were searched. Through analysis of the content and of the tone of the expression the public opinion on the projects could be derived.

2.2.5 ANALYSIS OF FLOATING CAR DATA

To be able to monitor the impact of mobility measures the municipality of Amsterdam uses licence plate cameras and counting loops. These devices have proven to provide accurate data on the number of cars moving through the streets. The problem with the cameras and loops is that they cannot be installed everywhere and for a long time. This is why Floating Car Data (FCD) are a valuable supplement for analysis sake. FCD are anonymous GPS data from road users by the means of portable or in-car navigation devices and smartphones which continuedly receive traffic information and send location information (GPS data). This GPS data is primarily used for the creation of current traffic information. This data can also be used for the evaluation of intensities and velocities in the road network. By comparing the data of two dates it can be made visible where traffic increases or decreases. One downside of this method is that there is a unknown variation in the percentage of navigation device users within the driving population. This makes that the data cannot be extrapolated plainly. This can be solved by calibrating the data based on the accurate data from the cameras and the counting loops (Aben et al., 2019)

With the FCD the impact on the traffic intensities in the surrounding network due to the closure of Brug 108 and de van Woustraat was determined.

The analysis of Floating Car Data was conducted and provided by a data analyst of the municipality of Amsterdam, Rosemarie Aben.

2.2.6 REFLECTION GROUP

A reflection group is used to reflect on the outcomes of research and while doing so provides more insight in the topic.

On the afternoon of March 2nd 2020 a diverse group of 12 employees of the municipality of Amsterdam, comprising of project leaders, advisors, researchers, etc, gathered to take note of the results and the provisional conclusions of the surveys. It was discussed how these results can be of help to them in their daily practice. Additionally, it was asked to them to, at the end of the session, write down, each for themselves, what was the aspect that interested them the most.

The participants who are cited in this report were asked for their permission to be named and cited. They gave their consent.

2.3 THEORY: REFLECTION

To be able to answer the question "How to handle ambiguity and uncertainty in order to be able to innovate?" (Q3) the method of Interviewing innovators is used.

2.3.1 INTERVIEWING INNOVATORS

As explained in section 2.2.3 interviews are a tool to gain insight in the professional or social world of people. For this research innovators were interviewed to discuss the role of analysis, design and engineering in innovation and transition on philosophical and practical levels. Concepts derived from literature were used, namely ambiguity and uncertainty.

The interview was an open interview with only one question: How to handle ambiguity and uncertainty in order to be able to innovate or to make transitions?

The interviews were conducted in separate meetings. The interviews were recorded and transcribed. This transcription was sent to the interviewees for approval. The interviewees gave their consent for the use of the content for this research as well as for them to be named and cited.

Who are interviewed?

Thijs Turèl is program manager Urban Data and Intelligence at AMS Institute. Thijs researches how to develop responsible digitalisation. This is about how smart technology is not only for the increase of efficiency yet also deals with public interest and the inclusion of people. Thijs is a political scientist who has done several projects in the energy sector. In 2018 Thijs and his team won a Dutch Design Award for building the first "Prototype of a Transparent Charging Station". This project was developed to show users the impact of their choices and how it was calculated (ams-institute, n.d.).

Stephan van Dijk is director of innovation at AMS Institute. Stephan is responsible for the innovation strategy of the institute. The aim of the institute is to develop urban innovation in order to create resilient cities. Stephan has a background in systems engineering and

innovation management. Next to thinking Stephan believes in doing. “If we are not making things, we are not changing things” (ams-institute, n.d.).

Jaap Koen Bijma is innovator at CTO Innovatieteam, municipality of Amsterdam. The innovatieteam is established to help to develop initiatives together with companies, knowledge institutes, start-ups, organisations in civil society and involved residents. Jaap Koen is self-educated and believes in imagination and disruption in order to be able to innovate.

Dirk Iede Terpstra is traffic expert and policymaker at the municipality of Amsterdam. Dirk Iede works on the interface of traffic, urban design, and town planning. Dirk Iede is one of the initiators of the “Agenda Autoluw” program which is starting to get implemented right now (Spring 2020). Dirk Iede has a background in traffic engineering and town planning.

2.4 ANALYSIS OF THE FOUND (QUALITATIVE) DATA

The researched practice and theory provide an extensive array of aspects concerning social feasibility and transition. Analysis of the found data was conducted through coding.

Boeije (2010) explains the process as follows: coding is the process of segmenting and reassembling data, in order to be able to describe or explain the researched phenomenon.

The first step involves “breaking down, examining, comparing, conceptualizing and categorizing data” (Boeije, 2010, p96). This is called open coding.

The second step is to “describe and delineate categories, determine relevance of categories, increase level of conceptual abstraction” (Boeije, 2010, p108). This step is called axial coding.

The third step is about reassembling the data by selecting the core categories, systematically relating them to other categories, integrating categories, in order to create a coherent narrative. This step is called selective coding (Boeije, 2010).

Open coding
Every sub-research dataset was researched on occurring relevant themes. This resulted in a long list of themes or categories. Quite a few themes re-occurred in the different data sets. For the list of themes, see Appendix B.

Axial and selective coding
After the generation of the long-list of themes axial and selective coding was applied.

This was a process of combining, comparing, connecting, rejecting, structuring, looking for patterns, looking for hierarchy, finding overarching themes. This was not a linear process, yet more iterative, going back and forth between axial an selective coding, often moving sideways. The result of this abstract process can be found in Appendix B. The final conversion into findings can be found in chapter 4.

3 LITERATURE REVIEW

The literature discussed in this chapter together forms the theoretical perspective in which the research is placed.

In section 3.1 first background information to the motive to this research is given. Literature concerning the change in thinking on mobility is reviewed as well as literature on how road removal can lead to resilient cities. This section is about the context of the specific transition to a sustainable car system.

In section 3.2 the search for relevant literature to answer the research questions is described.

In section 3.3 literature is reviewed on how transitions, like the one to a sustainable car system, and innovations, like road removal, develop and why social feasibility is important for these transitions.

In section 3.4 literature on factors influencing perception of measures (leading to transition) is discussed.

In section 3.5 reflections on the role of analysis, design and engineering in innovation and transition are described.

In section 3.6 the conceptual framework for this thesis research is explained.

3.1 TO A SUSTAINABLE CAR SYSTEM

In this section literature on the need for a transition to a sustainable car system is discussed. It describes the motive for this research.

3.1.1 THE CHANGE IN THINKING ABOUT MOBILITY

In her book “The death and Life of Great American Cities” from 1961 Jane Jacobs already warned for the drawbacks for the city of the increasing ubiquity of cars (Jacobs, 1961).

Economic growth and the development of cities is induced by mobility. Mobility is induced by economic growth and the development of cities. These are reinforcing powers (Bertolini, 2017). In his book “Planning the mobile metropolis” Bertolini states that although mobility has led to multiple social and economic benefits it also comes with costs, like air pollution, accidents and undemocratic division of space. The distribution of benefits and costs between people is not always equal. The negative impacts of mobility need to be reduced. Some of the impacts are caused by the fact that mobility is fossil fuel driven. Some of the impacts are caused by the fact that cars claim space, disproportionately. The existing mobility practice is not sustainable (Bertolini, 2017)

> *“The key challenge of urban and transport planning integration is providing accessibility conditions for an increasing and dynamic diversity of social and economic activities in cities, while ensuring that the resulting impacts are sustainable in both the short term and the long term.” (Bertolini, 2017, p.9)*

In order to be able to break loose from the inducing mobility tangle the focus should be changed to accessibility. This is about the ability of residents to reach destinations and also the other way around, destinations which can be reached by residents. Accessibility can be

created by means of transport and telecommunications. It is a function of mobility and also of proximity. This focus can lead to a more sustainable way of planning (Bertolini, 2017).

Part of the costs of mobility in city lies in the conflict between the world of flows and the world of places. They can be a hindrance to each other. Dependent on the priority for flows or places measures to reduce the nuisance can be taken. In case places and liveability are most important it can even be decided to eliminate car infrastructure. There are several examples in cities where car infrastructure was eliminated in favour of attractive public space without creating problems in the transport network (Bertolini, 2017)

> *"Over the last 50 years it has become more apparent that there are also severe problems related to the emerging transport system, such as air pollution, noise nuisance and increasing road traffic casualties" (van Wee et al., 2013, p. 164).*

Negative impacts like those mentioned but also oil dependency, climate change impacts and congestion can be reduced through technology implemented in the transport system (van Wee et al., 2013).

There are more negative impacts than described by van Wee et al. (2013) and not all of them can be reduced through technology. The European Environment Agency distinguishes the following:

- **Environmental costs**: depletion of fossil fuels and other limited sources, production of waste, emission of greenhouse gasses, disruption of ecosystems,
- **Social costs**: traffic accidents, health and liveability impacts of air pollution and noise, obesity because of lack of physical activity, severance of communities, encroachment of public space.
- **Economic costs**: productivity loss due to traffic congestion, disproportionate budget claims for building infrastructure, acquiring and operating vehicles (European Environment Agency, 2013)

In their book "After the car" Dennis and Urry (2009) state that because of positive feed-back mechanisms the inefficient fossil fuel driven car has become the most important means of transport. The mechanism of "increasing returns" led to nonlinear increases in social and economic output in huge internal and external networks (e.g. steel, oil, concrete). The car was shaped by society and now it shapes society. The world has become car dependent. Although it is recognized that the car system is not sustainable and undermining cities it is hard to get out of the lock-in situation. Dennis and Urry (2009) describe two ways to get out of this situation. The first is by taking really small steps which will eventually result in an avalanche, breaking down the system. The second way is the sudden unexpected event which disrupts the current system (Dennis and Urry, 2009).

3.1.2 REDUCING EXTERNAL COSTS OF CAR MOBILITY

The municipality of Amsterdam aims to be a front runner in the development of a resilient city. As part of the program for the liveable and accessible city the municipality has taken on the challenge of reducing car dominance, environmentally, functionally and spatially. The goal is a shift to clean and active mobility. The municipality has formulated 27 measures to achieve this goal, ranging from enlarging pedestrian zones, creating space for public transport, obstructing through traffic (by cuts), improving bike lanes and connections, improving logistics, reducing car parking, and so on (Gemeente Amsterdam, 2019a). Most of these measures will lead to reduces demand.

Reduced demand is the opposite of induced demand. Induced demand is the phenomenon which entails the effect that traffic will be more demanded when it gets cheaper or faster. When more roads are build more traffic will arise (Annema in van Wee et al., 2013).

Consequently it can be stated and proven that the removal of roads will lead to a reduction in demand, because of the bigger effort, in time or money, needed (Cairns et al., 1998). Traffic will disappear.

Road removal is in most cases not literally about the removal of roads. It is about the reduction of road capacity and the cancelation of connections. Roads are being down scaled or reallocated to other modes of transportation, like walking, biking or public transport. By cancelling connections, like the cuts in the "Agenda Autoluw", the effort to get somewhere increases. Also cancelation of parking spots, a measure in Agenda Autoluw, is a measure to reduce demand since through this the number of destinations are decreased.

In the nineties of last century is was already recognized that building more roads to battle congestion was not the solution. The new roads generated extra traffic. Next to that is was recognized that reallocating road space for other modes, like pedestrians, bikes and busses, would increase the efficient use of the road network. Still the reduction of road space for individual car traffic is not an accepted measure because of the fear that the diverted traffic would create nuisance in the surrounding area. To find out whether this fear is grounded Cairns et al. (1998) researched the traffic impacts of 60 projects all over the world where road space had been allocated.

The main findings were:

> *"(a) When roadspace for cars is reallocated, traffic problems are usually far less serious than predicted. (b) Overall traffic levels can reduce by significant amounts. (c) Traffic reduction is partly explained by recognising that people react to a change in road conditions in much more complex ways than has traditionally been assumed in traffic models." (Cairns et al., 2002, p. 14)*

Cairns et al. (1998) explain there are several reasons why reallocation of road space does not lead to gridlock in far most of the cases. In road space reallocation schemes three types of situations are identified. First, there is the situation in which there is no real reduction of capacity, for instance when capacity is enlarged simultaneously somewhere else in the network or when efficiency on road nearby is improved. In these cases there will be no reduction of traffic. Secondly, there is the situation in which capacity is reduced but there still is capacity available elsewhere in the network. Traffic will re-route or re-time. The third situation is when there are no alternatives while reducing capacity. This is when traffic disappears. Several changes in behaviour were noticed: change in time of journey, change in destination, change in frequency, change in mode, car sharing, combining trips, eliminating trips, change in job location, change in home location, change in developing new locations.

Factors influencing the impact of road reallocation project are: the nature of the existing network, the type of trip affected, the attractiveness and availability of other modes, other factors influencing car use, mainly parking, attractiveness of other locations, information and marketing, design details of the project, like enforcement and aesthetic quality (Cairns et al., 1998).

3.1.3 IMPACTS OF REDUCING THE UBIQUITY OF CARS

Gehl (2010) and Speck (2012) both explain how the ubiquity of cars has ruined city live. They advocate for liveable cities by reintroducing the human dimension. Both argue that walkability is the key to many benefits. Gehl states:

> *"Cities must urge urban planners and architects to reinforce pedestrianism as an integrated city policy to develop a lively, safe, sustainable and healthy cities. It is equally urgent to strengthen the social function of city space as a meeting place that contributes toward the aims of social sustainability and an open and democratic society" (Gehl, 2010, p6)*

A lively city in which people are invited to walk, bike and stay in city space is an economical prosperous city. The city will be safe because of the reasonably cohesive structure which will lead to more people in city space. The city will be sustainable because the use of "green mobility". The city will be healthy because walking and biking will be the main modes of transportation. The costs of implementing walkability are modest compared to the costs for maintaining car infrastructure and the consequent effects (Gehl, 2010)

> *"After the conversion of several city streets in pedestrian areas in Copenhagen it can be concluded that: "if people rather than cars are invited into the city, pedestrian traffic and city life increase correspondingly" (Gehl, 2010, p13).*

According to Speck (2012) walkability should be promoted over the usual car-driven solutions.

> *"..., it is a simple, practical minded, solution to a host of complex problems that we face as a society, problems that daily undermine our nation's economic competitiveness, public welfare and environmental sustainability" (Speck, 2012, p11).*

Speck (2012) calls the benefits of walkability, the walkability dividend. Some examples: In a city fitted for walking, with less dominant car infrastructure, the miles travelled by car are significantly less and less time is wasted while being stuck in traffic. The money not wasted on traffic is spend locally and the time not wasted in traffic is spend with family and friends or on recreation and education. A factor that enforces this development is that companies are attracted to the lively cities and their workforces, establishing themselves near metro- or train stations. The opportunity to meet people leads to the thriving of communities and to the development of ideas and innovations (Speck, 2012).

Public Health is a convincing reason to convert from car dominance to walkability. Obesity is for a part caused by inactivity. The lack of opportunity for everyday recreation and the long commutes are no help in solving this problem. A walkable city will encourage people to exercise. Health problems related to air pollution will drop when cars are banned. With less cars driving around there will be less accidents. Spending less time in a car and having the opportunity to actually meet decreases loneliness (Speck, 2012).

Of course, there are drawbacks on road removal or road reallocation. One can imagine the car and oil industry not being happy with this development. The transition to a sustainable car system will influence their business negatively, unless they are able to adjust to the new demands.

People who are (professionally) used to drive around wherever and whenever they want or need, will have to adjust their ways. Some car dependent enterprises will have to move away.

Road removal is no goal on its own. One of the aims is to keep the city accessible. This means that investments are done to develop other modes of transportation. It also means that car accessibility is not completely made impossible. People who really need to use the car, like plumbers, care takers, delivery services, etc. still will be able to do so. Sometimes in a road network with less connections more distance will have to be covered, yet because of the fluent circulation it will not take much more time (Gemeente Amsterdam, 2019).

To be sure of social feasibility for the transition any solution replacing the car mobility should provide at least the same individual flexibility, comfort and convenience we are used to (Dennis and Urry, 2009).

As stated in the introduction, resistance against the implementation of measures inducing reduced demand is affecting decision making on these measures. To be able to influence the social feasibility of those measures, insight in various aspects of social feasibility is needed. In the following sections relevant literature is been reviewed.

3.2 THE SEARCH FOR RELEVANT LITERATURE

To be able to answer the main research question literature research has been conducted to find out what already has been researched regarding the topic. It proves that publications can be found on transitions in mobility, perception of road projects, impacts of road removal and other related topics. Some of them are reviewed for this research. Yet, most of those reports focus on one aspect or have a general approach of the topic.

Google Scholar and the Scopus database were searched to find literature on case studies related to social feasibility of road closure projects, using combinations of keywords like social feasibility, perception, nuisance, transition, road works, road projects, road removal, reduced demand, case study, residents (view), politicians (view). No such literature could be found.

For insights on the role of analysis, design and engineering in innovation who contribute to enhancing social feasibility of implantation of measures inducing reduced demand Google scholar and Scopus have been searched using combinations of keywords like modern analysis, ambiguity, complex systems, uncertainty, social feasibility, reduced demand, road works, road closure, road removal, road reallocation and so on. No records of research combining those key words could be found.

3.3 HOW TO MAKE A TRANSITION?

Although the topic of this research is very specific it is in fact on the social feasibility of a transition. In order to understand the process of transitions and innovations in general, theories on transitions are investigated.

3.3.1 MULTI-LEVEL PERSPECTIVE

One of the theories on transition has a socio-technical approach and is called Multi-level perspective. Geels (2002, 2005) states that transitions do not happen at once. They happen under certain conditions. The multi-level perspective is a way to get insight in those conditions. The idea is that transitions happen as a result of interaction between developments at different levels. These levels are the niche, the socio-technical regime and the socio-technical landscape. See figure 10.

The socio-technical regime level is the meso-level in this perspective. It is the level of the status quo, which has been reached through activities of social groups. This level provides the orientation and coordination which leads to the stability of the system. It is about contracts, routines, regulations, etc.

Niches are considered to be the “place” where innovations emerge and develop. This is where experiments can be conducted, where rules are unclear, where people can learn about processes, technology, etc. This happens in small networks.

The socio-technical landscape is the macro-level in the perspective, which is the wider context of society. It is about the material aspect of society, the spatial arrangements necessary to live together. Because of the stability of the system it is difficult to cause changes.

Innovations can be developed on the social-technical regime level as well as on the niche-level. On the social technical regime level the innovations are a result of incremental processes. The innovations on the niche level are more radical and disruptive.

Transitions develop in phases. Phase one: Innovation generally starts in niches, outside of the system. By improvising and experimenting actors try to find new solutions. There is no competing and no rules. Phase two: Some people get interested and technology starts to develop. New rules emerge. This phase can last a long time. Phase three: The breakthrough. This can happen for internal reasons like price and performance of the solution but also because of external reasons. An (window of) opportunity can arise when tensions occur in the meso-level because of changes on the landscape level (economic, cultural, social, wars)

Phase four: This is where the niche accumulation happens. Infrastructure and regulation come into place. The solution enters the mainstream market and will eventually replace other solutions. As a result, the socio-technical regime will change, which will lead to a change of the socio-technical landscape. A new balance will establish. (Geels, 2002, Geels, 2005). See figure 10.

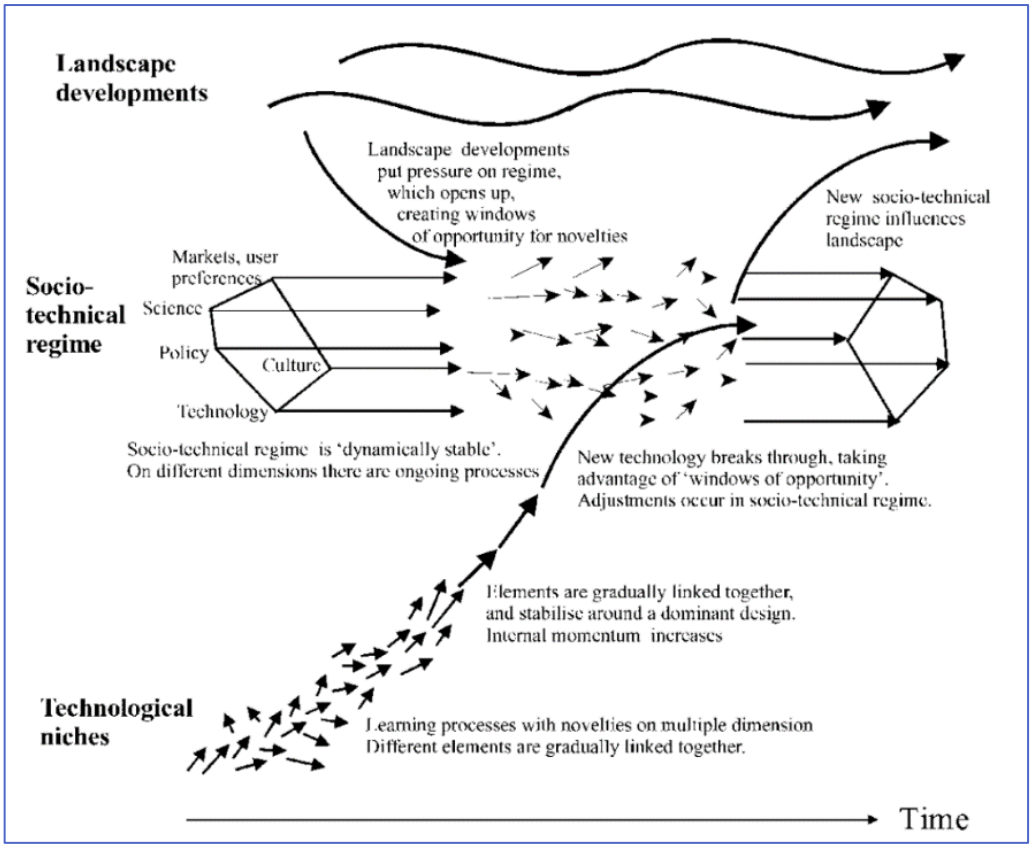


Figure 10: A dynamic multi-level perspective on transitions. Geels (2005)

In the case of the transition to a sustainable car system two things happen. At the top level, the social technical landscape, things are changing. Amongst others: the idea that the linear economy is no sustainable economy is getting more and more recognised as well as the notion that costs and benefits in the economic system are not equally shared. Also climate

change causes to reconsider the ways things are done. These major issues are affecting the regime at the meso-level.

Meanwhile in the niches, solutions are researched and developed which can cope with the new perspective. Some of the innovations will be adopted in the socio-technical regime, affecting the status quo.

The measures on removing or reallocating roads in order to reduce demand in car mobility can be seen as such an innovation.

3.3.2 ADOPTION OF INNOVATIONS

Innovations developed in the niches are not adopted automatically by the socio-technical regime.

Feitelson and Salomon (2004) researched the factors that affect the adoption of innovations in transportation. From this research a political economy framework is derived. This framework shows that adoption of the innovation is not only about the technical and economic feasibility. Social acceptance and political decision making are also mayor factors in successful implementation. Feitelson and Salomon advocate that to enhance adoption of innovation greater attention should be paid to interest groups and decision-making structures. See figure 11. Social feasibility is about acceptance and/or support for a measure, a plan or innovation.

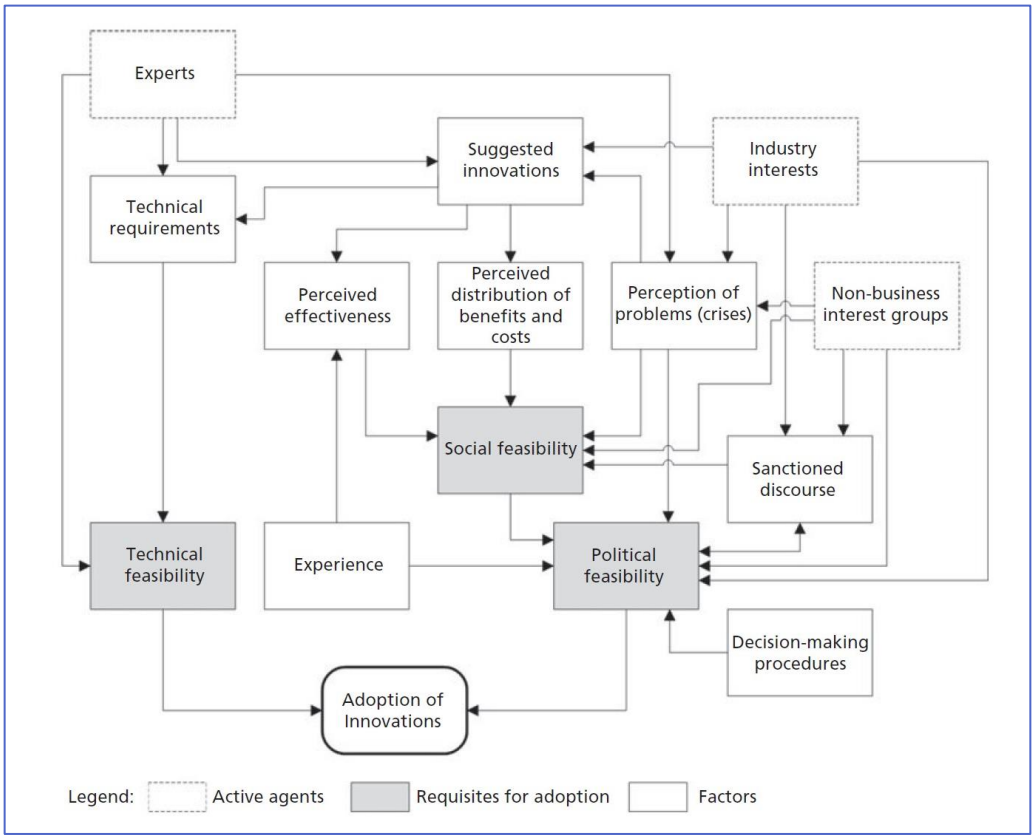


Figure 11: A political economy model for explaining adoption of innovations (Feitelson and Salomon, 2004) (Figure taken from van Wee et al., 2013)

3.4 FACTORS INFLUENCING SOCIAL FEASIBILITY/ACCEPTANCE OF MEASURES/PERCEPTION

Although the benefits of reducing car use are vast the measures to induce this reduction can count on resistance. To be able to increase social feasibility several scholars have conducted research on factors influencing the perception of residents concerning mobility measures taken by the government. Four of these researches are reviewed here.

3.4.1 FACTORS FOUND IN RESEARCH

Sridhar (2018) explored plausible factors affecting controversial policy acceptance, related to the transport domain. Five dimensions are distinguished:

1. Policy's characteristics
2. Physical context
3. Institutional context
4. Demographic and personal characteristics
5. Psychological context.

Some examples: When a policy is very complex people tend more to not accept a policy then when it is comprehensible (1. Complexity). When people use the car a lot, they tend to more not accept policy reducing their possibilities to use the car (4. Preferred transportation modes). It is also known that people tend to choose for what they already know and have difficulty with policies that brings changes (5. Status quo bias). See figure 12.

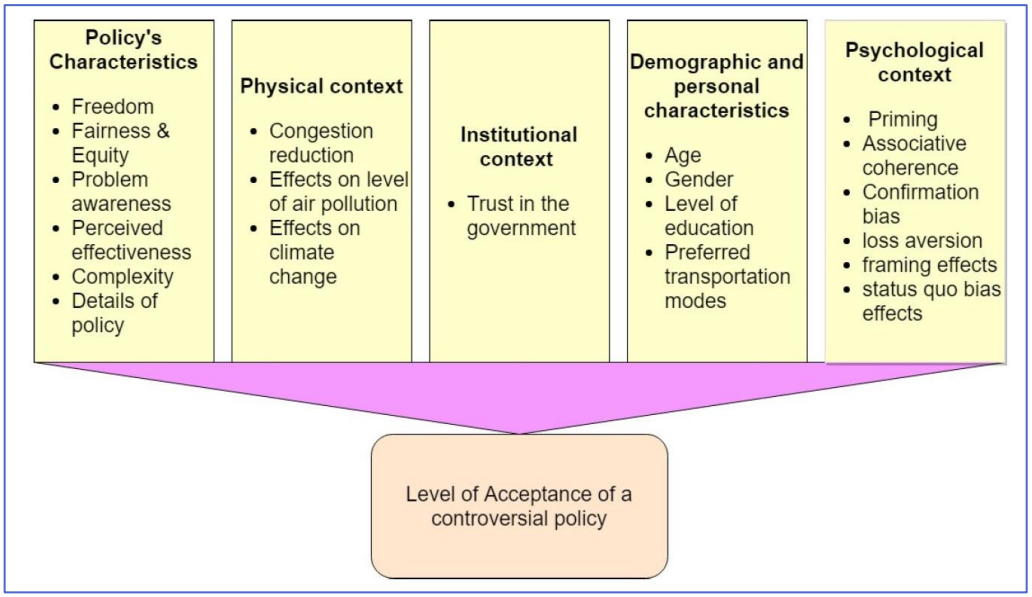


Figure 12: List of identified factors influencing the acceptance of a controversial policy (Sridhar, 2018)

In his report Sridhar (2018) also mentions an important key factor in the institutional context. Namely, the way institutions interact and engage with the residents while developing and implementing new policy (Sridhar, 2018). For some reason this factor did not end up in the scheme, but it should still be considered as crucial in acceptance.

Although this list of factors influencing acceptance is about policy which is proposed and established, these factors will also apply to the social feasibility of innovations.

Hamersma et al. (2017) found that the perception of nuisance depends on personal and environmental factors. Personal factors are e.g. socio-demographics, attitudinal factors,

available information and coping strategies. Environmental factors are e.g. proximity, (changing) environmental quality and government perception. In the case of a highway the nuisance can be divided in three types: noise, air pollution and barrier effect. (Hamersma et al., 2017). For example: when people trust the government, they are less prone to experience nuisance from highways or roadworks then people who do not trust the government.

Awareness of these factors should lead to improvement of planning processes of infrastructure projects. Perception of nuisance can be decreased by taking a broader environment in to account (Hamersma et al., 2017).

Zhou (2010) states that the most significant factors influencing the perception of traffic nuisance are age, perception of government performance and attitude to economic development (Zhou, 2010).

In their research on road space reduction projects Cairns et al. (2002) found that, because of the controversial character of these projects, the implementation should be done with great care. Recommendations are: "(a) Get schemes right at the beginning and ensure that all the details are implemented correctly." "(b) Monitor all issues of controversy, so that critics can be met with facts and ensure that facts are readily available as soon as possible." "(c) Use the press and the public consultation work to emphasise that there are likely to be initial problems." "(d) Implement controversial schemes in stages, try to influence any potential side-effects so that they are positive rather than negative, and ensure that the benefits from each stage are obvious." (Cairns et al., 2002, p.15)

In table 2, an overview is given of 21 factors influencing perception, derived from the reviewed literature.

Table 2: Overview of 21 factors influencing perception derived from literature

Dimension	Factor
Socio-demographic context	Age Gender Education level Resident or entrepreneur Renter or owner
Attitude	Means of transportation Duration of residence Sensitivity Aim and importance of the project Coping strategies
Institutional context/ trust in government	Information before the start of the project Information meetings Involvement in plan developing process Information during the project Municipality does as promised
Psychological context	Expectations Biases
Physical context	Type of road Impact/effects Problems during project Mitigation

The 21 found factors are tested in the case study, in the surveys, in order to gain insight in their influence in the practice of the two road closure projects.

3.5 THEORY ON THE ROLE OF ANALYSIS, DESIGN AND ENGINEERING

The theories discussed above are all about the transition process, yet it does not give any insight in the requirements on the content side. How to determine which problem to solve, for whom and how? Theories on analysis, design and engineering are discussed here. In this research the concept of ambiguity is linked to analysis and the concept of uncertainty is linked to design and engineering.

It can be argued that uncertainty plays a role in analysis and that ambiguity is a factor in design and engineering, yet for reasons of manageability of the research the approach as described and depicted in figure 13 is chosen.

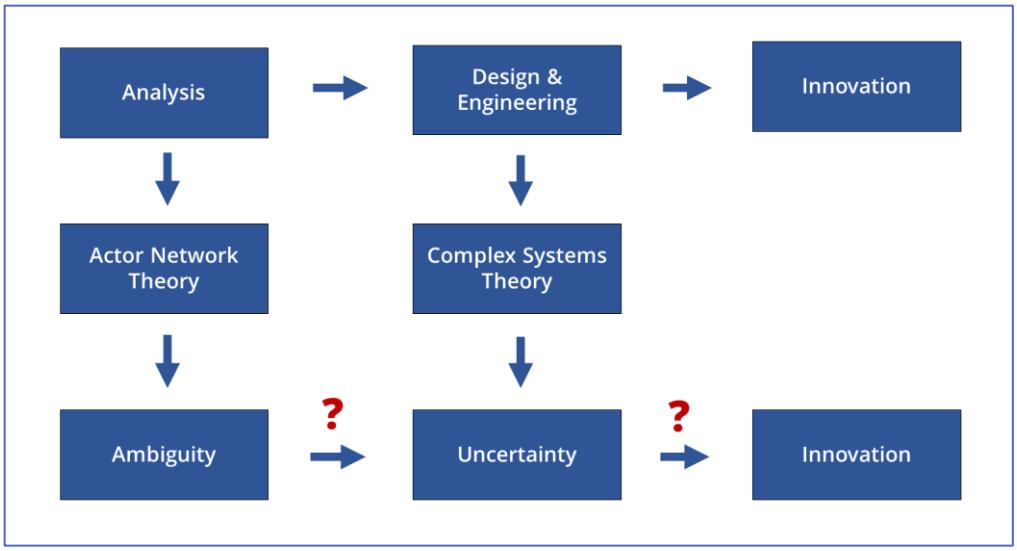


Figure 13: The relation of concepts

First the concepts are being explained through literature and second some literature on how to deal with ambiguity and uncertainty is being reviewed.

3.5.1 MODERN ANALYSIS AND AMBIGUITY

Can analysis be the means to determine which problem should be solved?

There has been a shift in thinking about analysis of occurring phenomena. First it was believed that everything could be reduced to the fundamental laws of physics. However, for some decades now it is recognized that science is about studying complex adaptive matter which cannot be reduced (Urry, 2005).

In his book "After Method, Mess in Social Science Research" Law (2004) states that reality is "vague, diffuse or unspecific, slippery, emotional, ephemeral, elusive or indistinct, changes like a kaleidoscope, or does not really have much of a pattern at all" (Law, 2004, p.2). Analysis of non-coherent matter cannot lead to coherent descriptions. Moreover, every attempt to describe reality adds to this reality. New knowledge leads to new contextual surroundings. A practice can be seen from different perspectives, each with their own reality. Analysis of this practice will lead to multiplicity (Law, 2004). The whole picture cannot be painted and the picture that is painted is ambiguous.

Law (2004) builds on Latour who stated that phenomena are being maintained by practices in analysis and their tools. Research is been done to confirm the known. Discontinuous results are being disregarded (Law, 2004). As much as one tries to get a complete picture one has to be aware that most knowledge is produced according to agreed frameworks for research design, paradigms. These paradigms cause a narrowed view on reality.

How to deal with ambiguity/multiplicity?

In the realms of Actor Network theory, it is now recognized that in reality several practices exist next to each other. This leads to multiplicity. Multiplicity should not be seen as a hindrance, making the puzzle more complex. Multiplicity can be the key to change. By exploring the possibilities and impossibilities of the several practices and their relations alternatives in solutions/approaches can be developed (Law and Singleton, 2014).

Giguere (2011, 2014) states that embracing ambiguity is the path to new solutions. Collaboration between people with different insights and knowledge is necessary to be able to solve the complex twenty-first century problems the world is facing. The old convergent approach will not be sufficient anymore (Giguere, 2011, 2014).

3.5.2 DESIGN AND ENGINEERING AND UNCERTAINTY

Can design and engineering predict the impact of their creations?

Complex systems theory reveals why the impact of measures is hard to predict. To understand the implications of complex systems theory it is good to know from where and why the theory developed.

McCarthy et al. (2000) give a useful overview. Mankind has always been busy to understand living systems and their environment (including the universe). Discussions on how to approach research on this matter have been dominated by debate on the role of the whole in relation to the part. There was the view of the reductionists, who tried to understand system behaviour by researching the behaviour of the parts. Knowledge of the parts and the relation between the parts would lead to understanding of the system.

The other, organic, view promotes the idea that parts have self-organizing capacities and are in part independent. In this view the system cannot be explained from the properties of the parts.

Next to the discussion on the parts there was also a debate on the question whether systems are considered to be open or closed. From the closed view the behaviour of systems can be explained through the second law of thermodynamics. The system would move from order to disorder.

For the other view an evolutionary perspective is used in which systems are always influenced from outside. These systems are never in equilibrium. In open systems self-organisation occurs, like emerging of new structures, through the existence of multiple, positive and negative, feedback loops (McCarthy et al., 2000, Urry, 2006)

Urry (2006) and Dennis and Urry (2009) state that complex systems theory is about the behaviour of systems that evolve, learn and adapt. Any intervention in the system (design and engineering) can lead to unpredicted features and unintended effects. One implication is that small changes can have, next to small, enormous effects. Another implication is that system changes can be, next to gradual, very abrupt. Changes cannot be reversed.

These effects are caused by feedback systems. Negative feedback loops will dampen down the changes in a system. Positive feedback will reinforce changes, causing systems to evolve to new regimes. Positive feedback can lead to path dependence and lock-in situations. Because of this some systems become stabilized for a long time. Those systems are hard to change. However, it is possible for these systems to be influenced and changed. In some circumstances small unpredictable causes can push the system from the path and can have vast consequences because of new reinforcing positive feedback loops (Urry, 2006, Dennis and Urry, 2009). The implication of these mechanisms is that the impact of an event cannot be predicted. The future is uncertain.

Jalonen (2012) reviewed articles on uncertainty in innovation. He states that:

"given that the future entails uncertainty, it is reasonable to expect that uncertainty is inherent in every innovation process. Uncertainty results from the fact that, on the one hand, events in the future do not follow the course of past events, and, on the other, knowledge of the future is always incomplete."
(Jalonen, 2012, p1)

How to deal with uncertainty?

In evolutionary planning it is recognized that there is no natural state of equilibrium and that social systems are complex. Because of uncertainty there is no optimal policy. Still systems should have the ability to react to change. Systems should be resilient and adaptable (Bertolini, 2007).

Bertolini (2017) states that because uncertainty cannot be reduced, solutions will have to be robust and flexible. A solution is robust when it can serve a variety of goals and means, leaving open possible futures. Experimenting is needed to find out the way to go. Next to that flexibility is important. Alternative options need to be available and there must be the courage to swap between alternatives and always be aware that situations can change and be ready when they do (Bertolini, 2017).

Bertolini (2017) suggests three activities in this continuous learning process: (1) assess the need for change, (2) explore alternatives, by experimenting, (3) develop promising solutions. During these activities various actors/stakeholders should be involved to ensure a broad perspective.

To be able to handle uncertainty and complexity Stoker (2006) pleads for networked governance in which a wide range of participants should be involved in decision making processes, in which shared learning is an important part (Stoker, 2006).

For assessment of uncertainty in the future scenario planning is a much used method. Scenarios are stories about the future.

"Scenario thinking is strategic tool to proactively anticipate future opportunities and vulnerabilities"
(Ludwig, 2018a, p.8)

It enables the testing of proposed strategies on robustness and flexibility (Ludwig, 2018a). Robust solutions can maintain their effectiveness under different scenarios. Flexible solutions can be adjusted or adapted to different scenarios (Ludwig, 2018b).

Jalonen (2012) finds, amongst others, that next to disadvantages uncertainty can have benefits. He states that ambiguity and uncertainty are necessary in the process of innovation. It forces to a different way of thinking. Decisions can be improved because agreements can be made out of reasoning, instead of from rusted up believes. Also

uncertainty can lead to mistakes, which are crucial in the process of innovation (Jalonen, 2012). Jalonen (2012) identified several types of uncertainty.

> *"A more comprehensive understanding of the various sources of uncertainty offers practitioners the opportunity to improve their innovation management activities." (Jalonen, 2012, p3).*

Literature review shows that ambiguity and uncertainty are important concepts to take in account while trying to innovate. Also, literature provides some answers to how to handle ambiguity and uncertainty in order to be able to innovate (Q5). Next to that the same question is asked to innovators to gain insight in how these theoretical concepts are handled in the practice of innovation.

3.6 CONCEPTUAL MODEL

The theoretical perspective is summarised in this section.

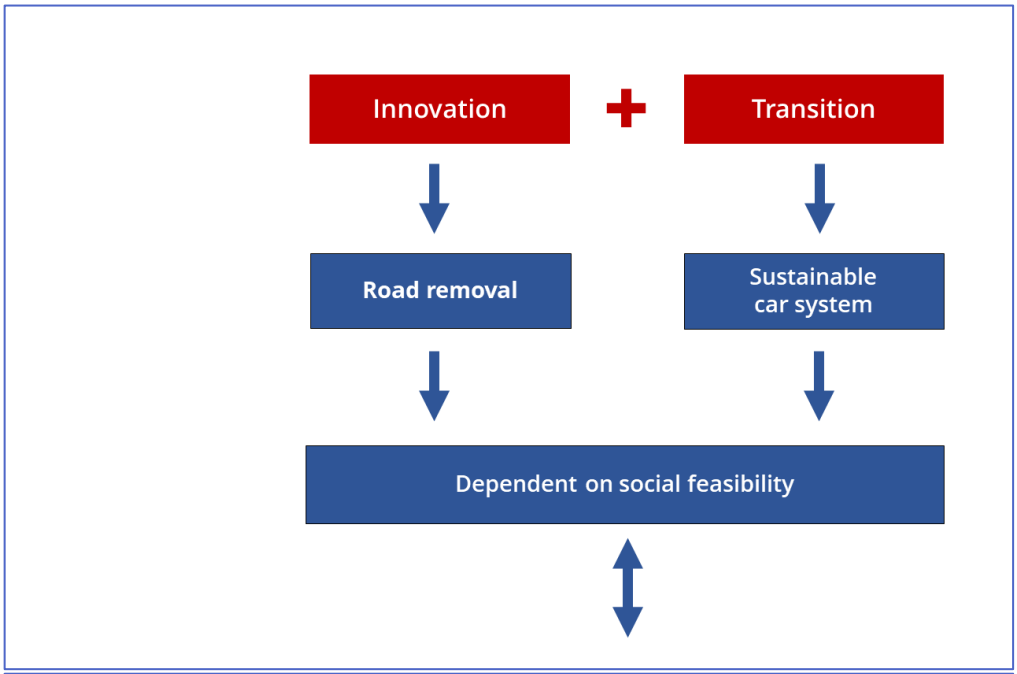
First it is recognised that the need to develop a sustainable car system can be seen as a transition. Secondly, road removal or road reallocation can be seen as an innovation, a new way of solving an problem. Feitelson and Salomon (2004) show that transition and innovation are dependent on social feasibility. See figure 14.

This thesis research is on how to enhance social feasibility of the implementation of measures inducing induced demand. To be able to answer this question literature has been reviewed.

First literature has been reviewed on a practical level. From 4 articles on factors influencing perception of measures 21 factors were derived. These factors have been tested in the survey in the case study.

Secondly literature has been reviewed on the theoretical level to be able to reflect on the role of analysis, design and engineering in innovation and transition. The concepts ambiguity and uncertainty have been derived from this review. The implications of these two concepts for innovation, transition and the required social feasibility have been explored in interviews with innovators. See figure 15.

Figure 14: Transition and Innovation are dependent on social feasibility



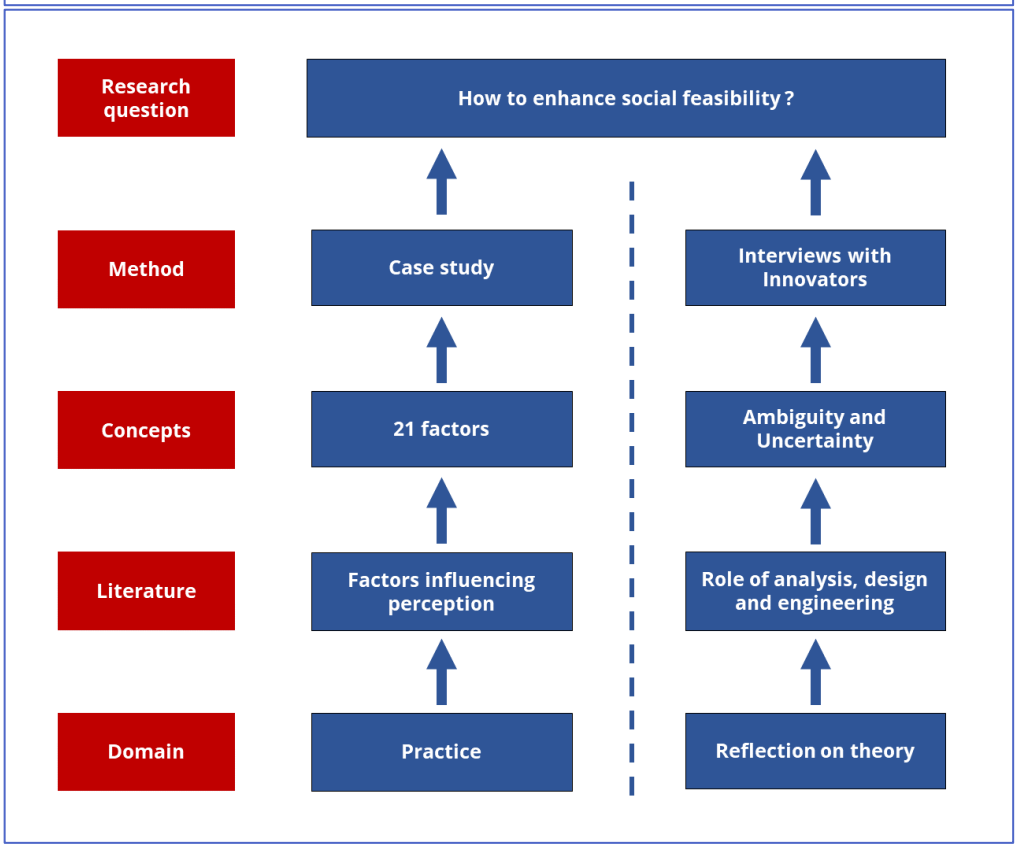


Figure 15: Conceptual Model

4 FINDINGS

The case study and the interviews with innovators together sketch a picture of the social feasibility of road closure project from the perspectives of 1) the neighbourhoods, 2) the professionals and 3) the innovators. Discussions in the reflection group (RG) were used to reflect on the findings of the case study.

4.1 MAIN FINDINGS PER PERSPECTIVE

The case study provided a rich view on various aspects of social feasibility of the road closure projects and their context: spatial and social characteristics, differences in traffic intensities, news on the projects, expectations of residents and entrepreneurs, perceived impacts by residents and entrepreneurs, personal perception, factors influencing social feasibility, the struggles and considerations of project managers, policy makers and politicians to enhance social feasibility. For an overview of these findings see table 3 and 4. The findings will be elaborated upon in sections 4.2 and 4.3.

By drawing conclusions from the findings of the case study, the following questions are being answered:

Q2: What aspects play a role in social feasibility in the case of road removal or road reallocation?

Q3: How do those aspects influence the social feasibility?

The interviews with the innovators provided useful insight in how to handle ambiguity and uncertainty in order to be able to innovate. For an overview of these findings see table 5. The findings will be elaborated upon in sections 4.4.

By drawing conclusions from the findings, the following questions are being answered:

Q4: Can reflection on the role of analysis, design and engineering in the innovation process, lead to a contribution in answering the main research question of this research: How to enhance social feasibility of the implementation of measures inducing reduces demand?

Q5: How to handle ambiguity and uncertainty in order to be able to innovate?

Table 3: Perspective of the neighbourhoods

	Method	Theme	Finding
Neighbourhoods	Location related research	Spatial and social characteristics	Both neighbourhoods can be considered as almost average neighbourhoods in Amsterdam, regarding socio-demographic characteristics. It is assumed that there are no negative issues influencing the perception of the road closure projects.
	Analysis of traffic flows	Floating Car Data	Traffic to diversion routes has increased. The total amount of traffic in the network seems to have decreased. More research needs to be done to validate the use of floating car data.
	Analysis of news media	Media coverage	There was almost no media coverage on the two road closure projects. From this it can be concluded that there has not been much (collective) resistance against the projects.
	Surveys	Expectations	Most respondents expected the traffic in their street to increase as a result from the road closure.
		Expectations related to perceived impact	Half of the expectations matched the perceived impact during the project. From this it can be concluded that expectations should not be leading in discussing road closure projects. Expectations are about handling uncertainty. Respondents are ambiguous in handling uncertainty.
		Perception	From analysing the survey 5 types of perception could be derived: : 1) Does not like the traffic situation in general, 2) Did not like the road closure, 3) Minorly affected by the road closure, 4) Acceptance in general and 5) Not influenced negatively by the road closure. Distribution of the respondent over the types of perception is almost even. There is no significant leading opinion. From this it can be concluded that reality is ambiguous.
		Factors influencing perception	For only 9 out of 21 factors an uneven distribution between five types of perception were found which might implicate that these factors are influencing the personal perception. Yet, it proves to be too complicated to determine the individual influence of factors, because of complex relations. The factors are not a useful tool to enhance social feasibility.

Table 4: Perspective of professionals: What aspects play a role in social feasibility for road closure projects?

	Method	Finding/Aspect
Professionals	Interviews	Resistance influences plan development and decision making negatively. So insight in social feasibility is valuable
		Three criteria for implementing measures: Flow, air quality and expected resistance
		Balance in costs and benefits, Balance in public interest and private interest
		Well substantiated vision and goal
		Clear information, Liaisons manager, Information meetings
		Involvement of residents during plan development and implementation
		Lack of knowledge concerning reduced demand, leading to wrong information, influencing the social feasibility negatively
		Pilots are considered to be valuable in gaining knowledge and for enhancing social feasibility of road removal projects
		Difference in acceptance between temporal and definite measures

Table 5: Perspective of innovators: How the handle ambiguity and uncertainty in order to be able to innovate?

	Method	Theme	Finding/Recommendation
Innovators	Interviews	Ambiguity	Stakeholder involvement, Inclusivity
			Imagination
			Living labs, Co-creation
			Time and money
		Uncertainty	Scenario planning
			Vision
			Phronesis, the combination of thinking and doing.
			Prototyping
			Experimenting, Pilots

The underlying data can be found in Appendix C to J.

4.2 THE PERSPECTIVE OF THE NEIGHBOURHOODS

The perception of road closure projects

4.2.1 CHARACTERISTICS OF THE TWO NEIGHBOURHOODS.

The surveys were conducted in two neighbourhoods, the Frederik Hendrikbuurt (Brug 108 project) and the Hemonybuurt (van Wou project). Both neighbourhoods were developed in the late nineteenth century. The neighbourhoods have a high population density and mainly consist of housing, stacked to four floors. Along the main roads there are shops, cafés and restaurants.

After analysing the socio-demographic characteristics of the neighbourhoods, related to the factors influencing perception, it can be concluded that the characteristics of population of the Frederik Hendrikbuurt are close to the average characteristics of the whole city of Amsterdam. Two exceptions are the percentage of people between 24 and 65. This is significantly higher. And the percentage of higher educated people which is also significantly higher.

The characteristics of the population of the Hemonybuurt deviate a bit more from the average. The percentage of people with a high income is higher and also the percentage of higher educated people is higher, even more than in the Frederik Hendrikbuurt.

The Amsterdam data provide scores for “pleasant living in the neighbourhoods” and “feeling at home in the neighbourhood”. Both neighbourhoods score above average (7,4 and 7,8) on both topics (Gemeente Amsterdam, n.d.c, Gemeente Amsterdam, n.d.d).

It can be concluded that the two neighbourhoods cannot be considered as extreme neighbourhoods. The case study is about researching the impact of road closures under normal everyday conditions. It also can be concluded that despite some disadvantages connected to urban living the residents of these neighbourhoods are content with their living environment. It can be assumed that there are no significant negative issues that influence the perception of the road closure project. This is the context for the two projects.

Underlying data can be found in Appendix C.

4.2.2 FLOATING CAR DATA

From the analysis of Floating Car Data (FCD) it was determined that the closure of the de Clerqcstraat (Brug 108) and of the van Woustraat were considered suitable projects for surveying. Next, the data were used to find out to which streets the traffic deviated to. It proved that the traffic increased on the Nassaukade and the Tweede Hugo de Grootstraat during the “Brug 108” project (see figure 15) and that the traffic increased on the Stadhouderskade, the Amsteldijk, the Ceintuurbaan, the Tweede Jan Steenstraat and the Hemonystraat (see figure 16) during the “van Wou”project.

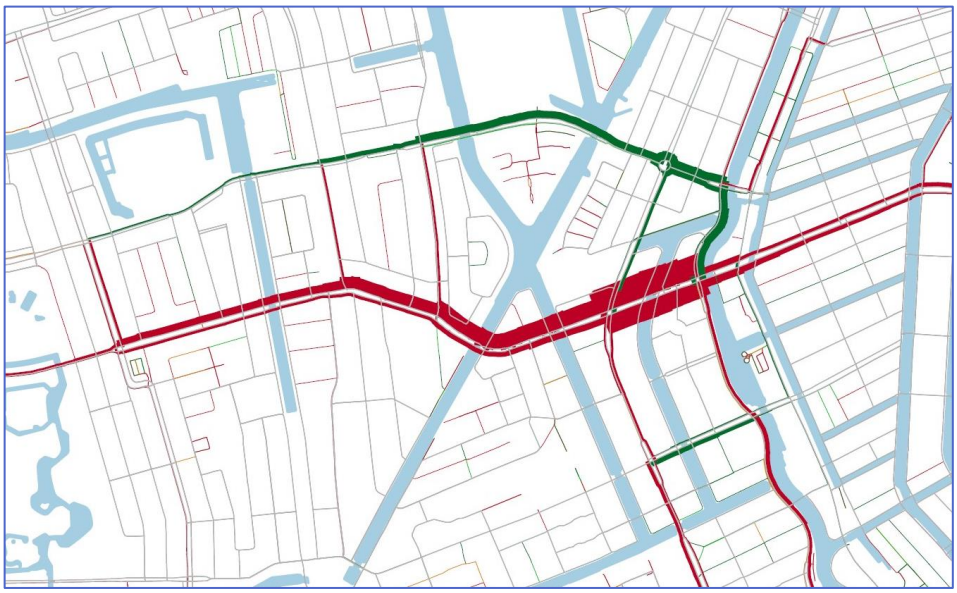


Figure 15: Brug 108: Comparison of traffic intensities two weeks before the re-opening of the bridge and two weeks after the re-opening of the bridge.
Red: increase of traffic. Green: decrease of traffic.
(Obtained from R. Aben of Gemeente Amsterdam)

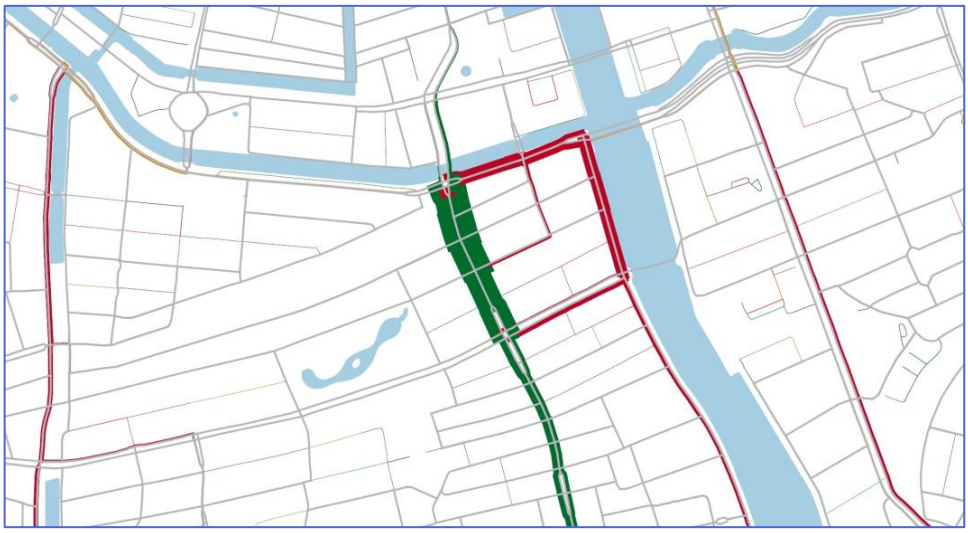


Figure 16: Van Woustraat: Comparison of the traffic intensities two weeks before the closure of the Northern part of the van Woustraat and two weeks after the closure. Green: decrease of traffic. Red: increase of traffic.
(Obtained from R. Aben of Gemeente Amsterdam)

When analysing figure 15 and figure 16, it turns out that the total amount of traffic in the surrounding network decreased after closure of the streets. Traffic seemed to have disappeared. Further research on this topic showed that the calibration value used to make the data compatible, is of influence on the total change (Aben et al., 2019). To be more certain actual traffic counts should be conducted. At the moment the available FCD cannot be used for informing planners and residents.

The data show an increase of traffic on the diversion routes and a possible decrease in the total network. It can be concluded that FCD on a aggregated level are a useful means to research impacts of road closures. Yet still research has to be done to be able to make statements about the total reduction or growth of traffic as an impact of traffic measures. With the absence of reliable data on the impact of road closures residents, planners and decision makers cannot be informed fully, which can have negative effects on the social feasibility of a project.

Underlying data can be found in Appendix D.

4.2.3 THE PROJECTS IN THE MEDIA

Road projects can lead to a lot of frustration and sometimes this frustration is picked up by the media.

In the case of the Brug 108 project only 3 news items were found. Two concerned the announcement of the project in January 2018 and one was about the fact that the bridge had been renovated and that traffic could make use of it again in December 2018. From this it can be concluded that the existing frustration was not big enough to make a fuss.

In the case of the project on the Northern part of the van Woustraat not a single news item could be found. A reason for this might be that the project only lasted a month.

There was almost no media coverage on the two road closure projects. From this it can be concluded that there has not been any (collective) resistance that drew the attention of the media.

Underlying data can be found in Appendix E.

4.2.4 SURVEY

The goal of the survey is to find out what the expectations of residents have, what their personal perception is, and which factors are influencing this perception.

The surveys were conducted on the Nassaukade , the Tweede Hugo de Grootstraat, the Ceintuurbaan, the Tweede Jan Steenstraat and the Hemonystraat. The Stadhouderskade and the Amsteldijk were not included in the survey because they are the same type of road as the Nassaukade and the Tweede Hugo de Grootstraat.

In January 2020, 29 surveys were conducted. For the distribution of respondents over the projects, see table 6.

Table 6: Distribution of number of respondents over the two road closure projects.

Project	Number of respondents
Closure of Brug 108	14 (11 residents, 3 entrepreneurs)
Closure of van Woustraat (N-part)	15 (12 residents, 3 entrepreneurs)
Total	29 (23 residents, 6 entrepreneurs)

Expectations
The respondents were asked which expectations they had before the start of the project concerning the impact it would have in their street. It was also asked where their expectations were based on.

Most respondents expected there to be more traffic (12), some did not expect any difference (2), one person expected there to be less traffic (1) and some did not have any expectations (5). See figure 17. Those who did have formed an expectation said they based this on experience or through logic.

"If the traffic cannot go through that street it will go through this street." (Respondent 8)

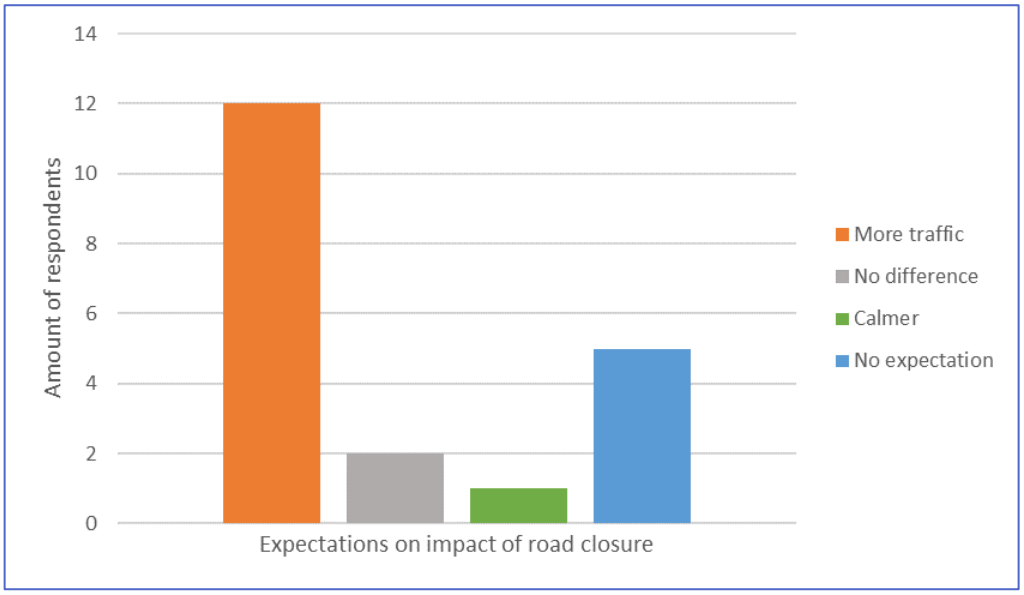


Figure 17: Distribution of respondents over the four types of expectations

The perceived impact during the project
Later the respondents were asked how they perceived the impact during the road closure. Most respondents experienced a more busy road (18), others did not notice any difference (7) and even some stated that the road was calmer (2). See figure 18.

"The crossing was less chaotic because one of the directions was closed off." Respondent 20

This was all regardless of the fact that the traffic did increase.

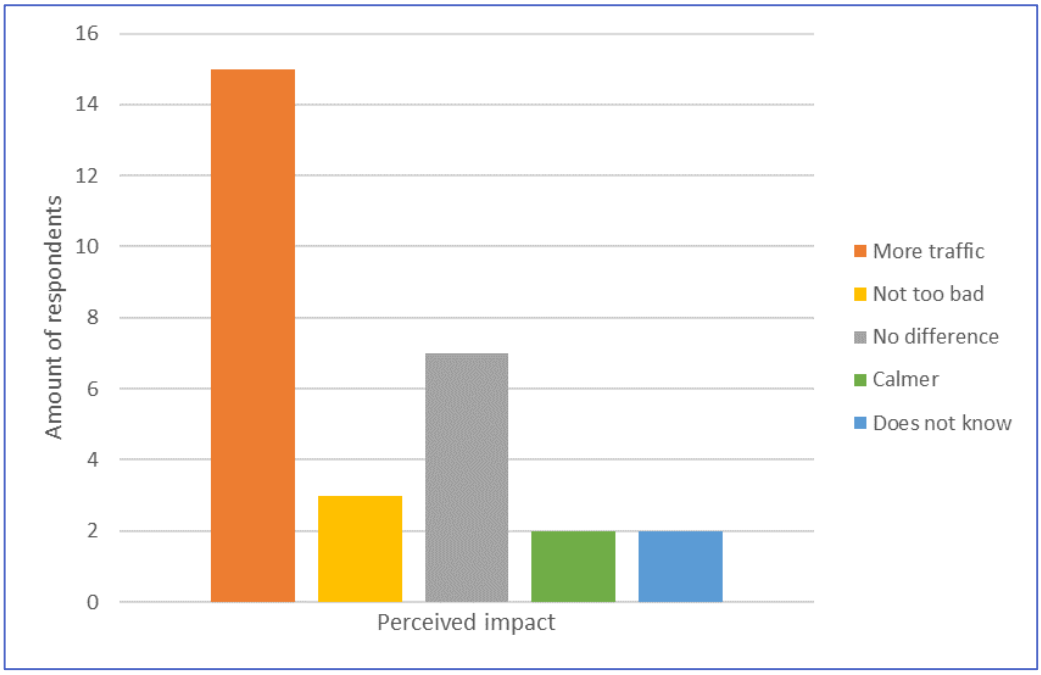


Figure 18: The distribution of respondents over the 5 types of perceived impact

For some in the reflection group the outcome, that although the traffic had increased it was not perceived like that by almost half of the residents, came as a surprise.

Rick Batelaan (RG) stated:

"Maybe this research is the confirmation that there is a difference in the prognosis of how the traffic will change (e.g. 30% more traffic) compared to how people perceive this traffic. The 30% more traffic should not be translated in 30% more nuisance. When this knowledge is incorporated in the communication of coming projects then this can increase social feasibility."

Expectations in relation to the perceived impact during the project

The relation between expectations and perceived impact was analysed. Figure 19 shows the distribution of the respondents who expressed an expectation over the three types of expectations and figure 20 shows the distribution of respondents who expressed an expectation over the five types of perceived impact.

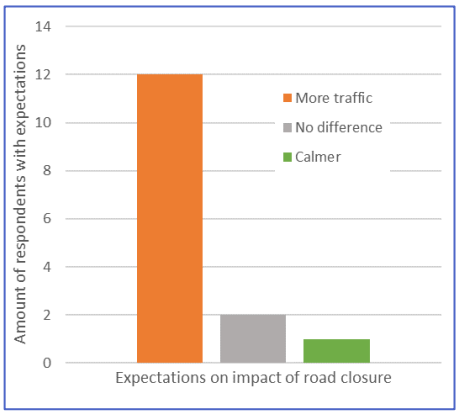


Figure 19: Distribution of respondents expressing an expectation over the three types of expectations

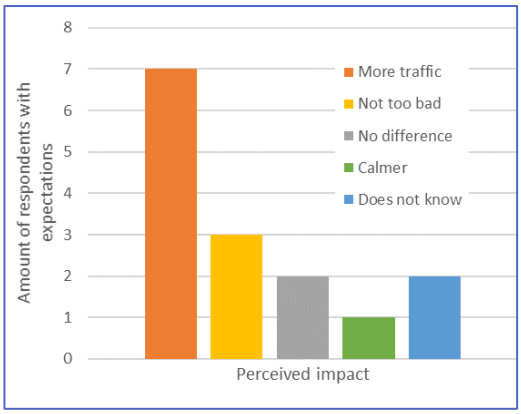


Figure 20: Distribution of respondents expressing an expectation over the five types of perceived impact

When looking into the relation of the expectation and the perceived impact during the project, it was found that half of the expectations matched the perceived impact during the project (7 **o**). Respondents expecting more traffic had experienced more traffic and respondents expecting no difference in traffic had indeed experienced no difference. The other half of the expectations did not match the perceived impact during the project. Within this group, except for one respondent (1 **+**), the perceived impact during the project proved to be less bad than expected (5 **-**). See table 7.

Table 7: Expectations in relation to the perceived impact (distribution over the number of respondents)

		Perceived impact				
		More traffic	Not too bad	No difference	Calmer	Does not know
Expectation	More traffic	**oooooo**	**- - -**	**-**		**??**
	No difference			**o**	**-**	
	Calmer	**+**				

o: matching experience and perceived impact
-: less bad perceived impact than expected
+: worse perceived impact than expected

In the relation between expectations and the perceived impact during the project there is a big difference between the two neighbourhoods. In the “Brug 108” neighbourhood significant more respondents had a matching expectation and experience. In the “van Wou” neighbourhood significantly more respondents did perceive the impact as less bad as expected. The reason for this difference has not been researched.

The participants of the reflection group were not surprised to see that the expectations do not match the perceived impact during the project. They know this from experience.

Dirk Iede Terpstra (RG) stated:

"It is nice to find confirmation, all those people who are protesting, if you ask them about the effects after implementation, half of them would say that it was not too bad. This is information which cannot be communicated in the neighbourhoods, yet it is politically relevant information"

Fokko Kuik (RG) stated:

"Our worst fears lie in anticipation. We should collect more of this knowledge"

Analysis shows that in half of the cases the expectations of the residents and entrepreneurs did not match the perceived impact during the project and that in most of those cases the perception was less bad than expected. It can be concluded that logic and experience in half of the cases were no good source of prediction. It can also be concluded that expectations should not be leading in discussions on road closure projects. Yet, expectations are a factor in the perception of a measure. This means that effort should be made to influence the expectations through, for example, information.

Expectations are about handling uncertainty. Everybody deals differently with uncertainty, depending on the biases people "use". Nobody can predict how measures will develop and what the impact will be. Uncertainty influences the social feasibility of measures.

Personal perception/acceptance

From analysis of the all answers, the used tone and the choice of words five types of perception could be distinguished: 1) Does not like the traffic situation in general, 2) Did not like the road closure, 3) Minorly affected by the road closure, 4) Acceptance in general and 5) Not influenced negatively by the road closure. Of 4 respondents the personal perception could not be determined.

The distribution of the respondents over the five types of perception is almost even. See figure 21. This analysis shows that there is no significant leading opinion. Next to people disliking the road closure there are people who are not bothered by it.

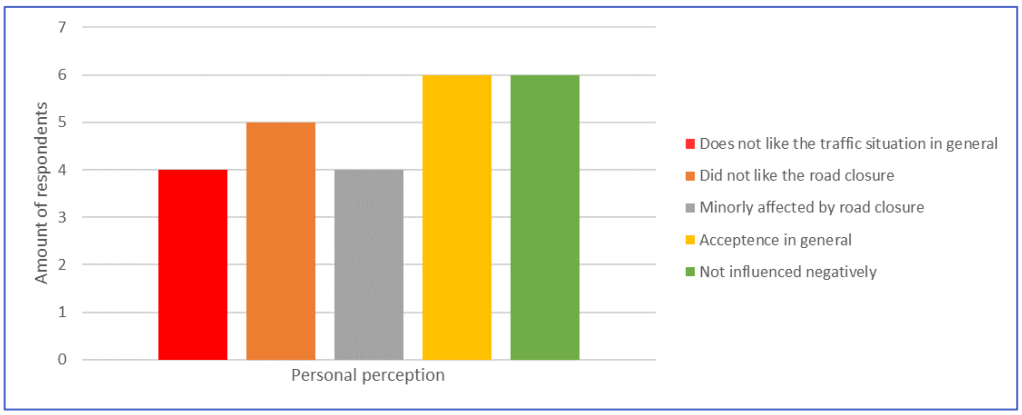


Figure 21: Distribution of respondents over the five types of personal perception for the two projects combined

Respondent 6 accepts the situation in general:

"It is always busy here. I knew that when I moved here"

Respondent 11 does not like the situation in general:

"Because of the amount of traffic, this is the filthiest street of Amsterdam!"

There is some difference in perception between the two neighbourhoods. In the “Brug 108” neighbourhood there is an emphasis on the negative perceptions and in the “van Wou” neighbourhood there is an emphasis on the positive perceptions. The reasons for this difference are not researched.

The distribution over the types of perception is almost even for residents as well as for entrepreneurs.

In the reflection group it was discussed that the results of the surveys largely match the findings of the researches on perception of two projects concerning drastic and definite traffic measures conducted by the municipality in 2017 and 2019. From the residents a big majority was positive about the effects of the project. From the entrepreneurs only a small majority was positive about the effects of the project (Gemeente Amsterdam, 2017, 2019b). Also, from years of experience the participants know that in the end people will perceive measures as not too bad.

It was also discussed whether from the results of the surveys it could be determined whether more traffic would lead to more nuisance. This about the relation of the measured increase of traffic to perceived nuisance. The survey can shed a light on that in two ways. Half of the respondents experienced more traffic, the other half did not. And from the perception perspective it can be stated that half of the respondents were negative about the project and the other half did not mind about the project. When related to each other it shows that half of the respondents who experienced more traffic was negative about the project. The other half did not mind the project. It can be concluded that for some respondents the increased traffic was perceived as nuisance but for most it was not.

The survey shows that there is an even distribution over the 5 types of perception. There is no significant leading opinion. When made generic, this finding is important for plan developers and decision makers. Often the opponents of measures manifest themselves loudly. The proven existence of people who accept the measure or who are not influenced negatively is crucial for political feasibility.

Moreover, resistance against plans does not mean that the plans need to be abandoned. It means that more effort needs to be made in enhancing the social feasibility of the measures.

The findings on expectations and perception show that reality is ambiguous. It is ambiguous in people’s aims, in people’s perceptions and in people’s expectations. This ambiguity influences the social feasibility of measures.

Factors in relation to personal perception
As mentioned in chapter 3, from literature 21 factors influencing perception of measures were derived. Those factors are listed in table 8.

Table 8: Factors influencing perception of measures

Dimension	Factor
Socio-demographic context	Age Gender Education level Resident or entrepreneur Renter or owner
Attitude	Means of transportation Duration of residence Sensitivity

	Aim and importance of the project Coping strategies
Institutional context/ trust in government	Information before the start of the project Information meetings Involvement in plan developing process Information during the project Municipality does as promised
Psychological context	Expectations Biases
Physical context	Type of road Impact/effects Problems during project Mitigation

The respondents were asked about those factors, directly and indirectly. Then the answers were related to the found personal perception. From this analysis it could be determined whether, in these two projects, the factors did influence the perception of the measure.

For most factors there was an even distribution between the five types of perception. No influence could be determined. For 9 factors uneven distributions were found which might implicate that these factors are influencing the personal perception. Those factors were: age, renter or owner, means of transportation, duration of residence, been kept up dated, expectations, type of road, perceived impact, problems during the implementation. It was not investigated why the factors did or did not influence the personal perception. The most striking factor with no influence on the personal perception was the provision of information at the start of the project. The analysed relations can be found in Appendix F and G.

Residents stated on some of the factors:

- About informing the residents before the start of the project

  "The municipality does a good job in informing the residents on projects or events." Respondent 1

- About seeing the purpose of the project.

  "I never travel by tram so I do not see the purpose of renewing the tram rails." Respondent 24.

- About the perceived effects:

  "There was more traffic, yet I did not mind it. I do understand. I want to be able to get somewhere myself". Respondent 26.

  "There were traffic jams all the time, because of the delivery services. People were honking. It was restless." Respondent 27.

- About coping strategies

  "I sleep at the back of the house, so the noise does not bother me." Respondent 6.

To the participants of the reflection group it came as a surprise that informing the residents before the start of the project did not have a significant influence on the distribution over the five types of perception.

Max Klemens (RG) wondered*:*

"If informing the residents before the start of the project does not have an influence then maybe we should stop bothering. But then again the residents would complain about not being informed …"

The fact that non car users have the most negative perception was discussed in the group. Danielle Meiboom (RG) asked:

> *"This is the most vulnerable group. Are we forgetting about them during the projects? Are the deviations mostly planned from the car perspective? Maybe the pedestrians and bikers suffer the most from deviation."*

The analysis of the relation of the 21 factors influencing perception, found in literature, and the personal perception shows that it is complicated to determine the influence of an individual factor on the personal perception. The factors relate to each other in a complex way. Next to that, the weight of the factors will be different for every respondent. It can be concluded that because of this complexity and ambiguity the factors are not a useful tool to actively influence perception. This goes against the findings in literature.

Underlying data can be found in Appendix F, G and H.

4.3 THE PERSPECTIVE OF THE PROFESSIONALS

The balance in public interest and personal interest in road closure projects.

The professionals interviewed are: Camiel Roskam, project leader Brug 108, Peter de Vos, project leader renovation tram rails van Woustraat, Dirk Iede Terpstra, traffic expert and policy maker and Jeroen van Berkel, alderman of district West.

To them it was asked what aspects play a role in ensuring social feasibility.

The municipality of Amsterdam has, as part of the aim to create a resilient city, established "Agenda Autoluw". One of the proposed measures is cutting routes with a lot of through traffic. (Gemeente Amsterdam, 2019) Connections will be made undone. This does not mean that parts of the city are not accessible anymore. The cuts will encourage people to use other modes of transportation. If people are not able to use other modes every part in the city is still accessible but they will have to take another (longer) route. Cuts will induce the transition to a sustainable car system.

The social feasibility for the aim and plan of the transition in general can be considered as enough. This can be concluded from the fact that it was proposed by the administration of the city who were democratically elected, based on their proposals to lower the number of cars in the city. Yet the social feasibility of some specific measures is uncertain.

The municipality of Amsterdam has three criteria for assessing the suitability of proposals for measures: : 1) the traffic flow (speed, the degree of obstruction of crossings and waiting time), 2) air quality (norms) and 3) support of the residents (expressions in news media and complaints). The first two can be modelled and monitored. Yet for politicians and policy makers support is elusive. Support changes over time and is hard to determine. Dirk Iede Terpstra states that resistance against proposed measures negatively affects the plan making and decision making. To him and his colleagues it is very useful to get more insight in the expectations and perception of people concerning road closure projects. This will add to the narrative.

It was discussed by both Jeroen van Berkel as the reflection group (RG) that they consider there to be a difference in acceptance of maintenance projects and acceptance of measures from policy choices. This was discussed because of the question whether the results of the survey (maintenance) could be applied to the implementation of measures from the "Agenda Autoluw" (policy choice).

The line of reasoning is that people would accept nuisance more when they know it is temporary. This can be understood from the fact that people tend to more accept measures of which the can oversee the consequences easier. The consequences of maintenance are easier to oversee than the consequences of policy measures. This was one of the factors in the psychological domain found in literature.

Bart van den Hoek (RG), warns that there is more to it. He states that road works only lead to nuisance, although temporary, yet definitive measures from policy choices also have benefits which should also be taken in account.

Another argument to whether the difference between temporary and definite measures is of influence on the social feasibility can be distilled from the results of the survey. The same line of reasoning can be applied to the discussion mentioned earlier about whether residents perceive more nuisance when there is more traffic. When respondents accept the situation in general or were not influenced by the project then it will not matter to them whether the situation is temporal or definitive. Also it can be stated that respondents who did not experience an increase in traffic it will not matter whether the measure is temporary or definitive. This leads to the same cross relation as in the last paragraph and from this it can be concluded that for some respondents the type of measure influences their perception but for most it does not. This means that still there has to be made more effort to improve the acceptance.

According to Jeroen van Berkel social feasibility depends on the balance between costs and benefits. When people are expecting to experience more costs than benefits from a measure then the support will be low. When they see that other parts of the centre are getting relieved from traffic leading to more traffic in their street then this is hard to swallow. A politician must find the balance between the public interest and the personal interest. When the benefits are too small then a measure should not be implemented. There has to be a vision in which the overall benefits are clarified. This statement is being endorsed by Dirk Iede Terpstra. Plans based on a coherent and strong vision can count on more social feasibility, even when they have some additional costs. The municipality must be open and clear about this when informing the residents about the plans.

Involving people in the plan development is of importance because of the creation of understanding of the several interests which are at play. Yet, involving people when there is nothing for them to decide on will negatively affect the social feasibility.

The project leaders of both projects state that keeping the residents informed during the project is also very important to retain the social feasibility.

> *"Residents in the neighbourhood have received a letter informing them about the renovation of the bridge and the road closure. There has been an information meeting. Next to that the liaisons manager did have a lot of contact with residents and entrepreneurs. During the information meeting residents were invited to express their ideas. And during the project we were given feedback all the time. There were many complaints about the road closure. This could be expected when closing an important road. We solved this by approaching the complaining residents, explaining the situation, the need for the renovation, and showing understanding for their situation". Camiel Roskam.*

Although Jeroen van Berkel knows the stunning example of disappearing traffic during the renovation of N 200 in Amsterdam he still fears the effects of certain measures mentioned in the "Agenda Autoluw". Dirk Iede Terpstra acknowledges that models predicting the traffic intensities are based on analysis of data from the past. The phenomenon of disappearing traffic has only slightly been incorporated in the model.

"The models show an increase of traffic of max 30%. Although we know from experience this maximum is never going to be reached. Still we communicate the max 30 % increase which leads to a lot of protests." Dirk Iede Terpstra.

In the reflection group it was discussed there was not enough knowledge on the impact of road closures and that this could lead to reduced demand. The models they use come up with the worst-case scenario because there is not enough insight in disappearing traffic due to road closure projects. This leads to the use of uncorrected numbers which sketch a worse picture then necessary. This has a negative impact on the social feasibility of measures. The collection and analysis of traffic intensities is crucial in enhancing social feasibility.

Some of the measures announced in the "Agenda Autoluw" concern a pilot project. Both Jeroen van Berkel and Dirk Iede Terpstra see the value of pilots. A pilot is to test the impact of a measure. It is a phase in the transition process which allows professionals to gain data on the impact and residents to experience the impact themselves, without deciding on the final implementation. When the measure does not have the desired impact, it can be undone or some adjustments can be made. Pilots increase social feasibility in two ways. First it shows that the municipality takes the residents seriously and second residents are more prone to accept pilots because they can be undone. Yet Dirk Iede Terpstra states that he does not know of many pilot projects which were made undone.

Bart van den Hoek (RG) warns to take into account that, depending on the scale and the funding, not all benefits can be realized during period of the pilot. For good comparison it should be tried to include the benefits during the test period.

Underlying data can be found in Appendix I and H.

4.4 THE PERSPECTIVE OF THE INNOVATOR

Reflection on theory: What can be learned from innovation processes?

In the previous sections the findings of the case study were described. These were the results of the research of practice. In this section the findings of the reflection of theory are presented.

Four innovators were interviewed. All the interviewees were asked the same general question: How to handle ambiguity and uncertainty in order to be able to innovate or to make a transition?

When analysing reality, no unambiguous picture can be taken. The question is then how to determine which problem should be solved and what the aims should be of that solution. Next to that, when using the complex systems perspective, one can never predict the impact of a measure. The question is then how to design a solution when the impact is uncertain?

The innovators interviewed are: Thijs Turèl (AMS), Jaap Koen Bijma (municipality of Amsterdam), Dirk Iede Terpstra (municipality of Amsterdam) and Stephan van Dijk (AMS).

4.4.1 AMBIGUITY

For Stephan van Dijk, it is clear that stakeholder involvement is the way to determine the problem and the aim of the solution. It has to be made sure that the most relevant stakeholders are being involved in the process. By doing so a broad scope is being created ensuring that the solution will fit a lot of people. It is impossible to involve everybody. Therefore, it is important to organise a process in which interests can be introduced evenly.

Adding to that Thijs Turèl uses the perspective of inclusivity. The aim should be to create solutions which apply for everyone and also can be understood by everyone. Thijs Turèl is involved in projects concerning responsible digitalisation, in which not only reaching the goal of inclusivity is researched yet also the even distribution of costs and benefits.

Jaap Koen Bijma promotes the use of imagination. Imagination will bring to view visions of what never has been thought of. By depicting and discussing these visions a common understanding will be created without having to analyse the past. Both Jaap Koen Bijma and Thijs Turèl emphasize the value of prototypes in these processes.

Although there is a big variety in definitions and approaches for living labs, these are a upcoming way for co-creating solutions for societal challenges (Steen and van Bueren, 2017).

Stephan van Dijk acknowledges that deliberate transitions or innovations only happen when attention, time and money are available. Because of this the direction of the process is determined by the parties who invest their time and money. Luckily, Stephan van Dijk, states, municipalities and other governmental bodies are investing in transition and innovations concerning metropolitan challenges more than ever. These institutions must look after the public interest and therefore will ensure the broad scope.

Dirk Iede Terpstra states that analysis of "the past" is still necessary. Hard numbers are at least needed to underpin the need for transition.

Literature confirms the statements of the innovators. From literature it can be derived that ambiguity should be seen as a chance for innovation. By exploring the possibilities and impossibilities of the several practices and their relations alternatives in solutions/approaches can be developed (Law and Singleton, 2014). Giguere (2014) states that collaboration between people with different insights and knowledge is going to be the way to solve the twenty-first century problems (Giguere, 2014).

4.4.2 UNCERTAINTY

Both Thijs Turèl and Stephan van Dijk state that scenario planning is a way to handle uncertainty. It is a way of exploring possible unknown futures. By calculation of risks involved it can be decided which way to go.

Thijs Turèl states that analysis of the past and statistics cannot be applied to the future.

"History is an experiment that cannot be repeated." Thijs Turèl.

During an innovation trajectory, which can be lengthy, made sure to work iteratively. Every now and then it has to be checked whether the goal and the chosen path are still valid.

Jaap Koen Bijma promotes acting from a vision or an ideal, not from analysis of the past. A vision will give guidance to the transition.

"Fools look at their footsteps, Wisemen look at the stars."
Jaap Koen Bijma citing Matthew 2, 1-12

To be able to innovate, Jaap Koen Bijma stresses the importance of phronesis. The combination of thinking and doing. To be able to handle future problems the youth has to be educated in to be thinking doers or doing thinkers. This includes people skills. Social management skills will be key in innovation processes.

All four innovators are convinced of the value of pilots.

"Due to experience we have an idea about the impact of a measure. Yet we never know for sure. A pilot provides the possibility to test the impact of the measure". Dirk Iede Terpstra.

Testing leads to insights which can be used to confirm or adjust the plans. It also provides insight in the chances for adoption of a measure. Other ways of handling uncertainty are starting on a small scale and phasing of measures. The impact is then monitored and from that it can be decided to scale up or to take the next step.

In literature scenario planning is also mentioned as a means to handle uncertainty. This allows the development of robust or flexible solutions (Bertolini, 2007, Ludwig, 2018a). Bertolini (2017) also stresses the value of experiments (Bertolini, 2017).

From the interviews with the innovators it can be concluded that in order to be able to innovate ambiguity and uncertainty need to be taken in account. For innovations to be social feasible it should be based on a broad perspective. This can be achieved through the involvement of various stakeholders in order to be able to determine the existing pain or problem and what the goal or aim should be of the solution. For the solution to be socially robust a common understanding needs to be established, through imagination and co-creation.

Experimenting is the way to deal with uncertainty. By testing solutions, before implementing, the social, environmental, technical, economic impacts can be determined. This will reduce uncertainty.

Concluding it can be stated that by acknowledging and embracing ambiguity and uncertainty more social feasible solutions will be developed.

Intrinsically in this conclusion lies the observation that solutions which have taken ambiguity and uncertainty into account will have a better social feasibility than solutions that have not taken this in account. By involving various stakeholders in the planning process the solutions will fit a broad array of people. By experimenting and testing the solutions knowledge is gained and people themselves can experience the impacts.

With this observation it can be concluded that reflection on the role of analysis, design and engineering in the innovation process does lead to a contribution in answering the main research question, How to enhance social feasibility of the implementation of measures inducing reduced demand?

From analysis of the surveys, the several interviews and the results of the reflection group it can be concluded that social feasibility of measures is heavily impacted by ambiguity and uncertainty. Yet, from the reflection on theory it can be concluded that taking ambiguity and uncertainty into account will enhance social feasibility of measures.

Underlying data can be found in Appendix J.

5 CONCLUSION AND DISCUSSION

5.1 HOW TO ENHANCE SOCIAL FEASIBILITY OF THE IMPLEMENTATION OF MEASURES INDUCING REDUCED DEMAND?

The findings from the case study on the social feasibility of road closure projects confirm what is stated in the reviewed literature, that reality is ambiguous and uncertain. Ambiguity can be found in the perception of the road closure projects by residents. The survey showed that there was no significant leading opinion regarding the perception of the road closure project. The survey also shows ambiguity in the expectations and in the way the respondents deal with uncertainty.

Uncertainty can be found in the relation between the expectations of respondents and the impact perceived by the respondents. Only half of the expectations matched the perceived impact. It shows that the impact of a measure is hard to predict. This uncertainty also affects the plan development by professionals. To be sure professionals apply worst case scenarios which lead to resistance. The case study shows that ambiguity and uncertainty influence the social feasibility of road closure projects.

To be able to induce the transition to a sustainable car system by removing roads or reallocation roads the social feasibility of those projects needs to be enhanced. From the reflection on theory, in literature and interviews, it can be concluded that to enhance social feasibility it is required to embrace ambiguity and uncertainty. Without addressing ambiguity and uncertainty the projects will not acknowledge the multiplicity in perceptions and expectations. To be able to incorporate ambiguity and uncertainty innovators and professionals recommend stakeholder involvement and experiments. Stakeholder involvement will result in a broad perspective on the subject and a common understanding of how the challenge needs to be solved. This will lead to social feasible and robust solutions. Experiments are a means to learn collectively about the impacts of measures. Through experiments uncertainty will be reduced. Further elaboration on how stakeholder involvement and experiments can enhance social feasibility can be found in the next sections.

5.1.1 STAKEHOLDER INVOLVEMENT

Stakeholder involvement is required in all the different phases of the planning and implementation process. At the start of the project stakeholders are needed to determine the occurring pains and the background of these pains as well as the aims of the project. By involving various stakeholders, perspectives which might otherwise have been neglected are incorporated.

The aims of the project can be determined by discussing ideas, imaginations, visions with as much as possible stakeholders. This will lead to a common understanding which is the base of a narrative that fits a broad array of people. Creating prototypes (plans, scale models, etc) will support this process. The collective plan development takes away uncertainty.

It is clear that not everyone can be involved and that not the whole picture can be determined. Yet, being aware about not knowing it all and being open to other opinions and experiences already influences the way solutions are being developed. According to Giguere

(2014) this open approach is exactly what is needed to be able to solve the complex twenty first century challenges the world faces (Giguere, 2014).

In the plan development phase possible solutions need to be discussed collectively. The benefits and costs of the various solutions can be compared. Scenario planning contributes to determine risks and chances. The knowledge, experience and concerns of residents and entrepreneurs are valuable input for the development of plans. This is consistent with Law and Singleton (2014) who state that by exploring the possibilities and impossibilities of the several practices and their relations alternatives in solutions/ approaches can be developed (Law and Singleton, 2014).

During the implementation of the plan, jointly monitoring and mitigating negative effects are of significant importance in obtaining and retaining social feasibility. Residents will find themselves being taken seriously and when possible occurring problems will be solved. This will enhance the trust in the government.

Stakeholder involvement is not a new concept. The findings confirm the necessity of this approach which is already been used in practice. Yet, from the findings requirements for the approach can be derived. Often stakeholder involvement is applied as a formality with no real implications. For the development of truly robust, social feasible, plans stakeholder involvement must be taken seriously. It is important to organise a process in which interests and concerns can be introduced evenly. These processes will have to be tailormade.

What is stated here in general also applies for enhancing the social feasibility of the implementation of measures inducing reduced demand. When stakeholders are involved in the different phases of the planning process of road removal or road reallocation projects socially robust plans will emerge.

5.1.2 EXPERIMENTS

Both innovators and professionals stress the value of experiments in dealing with ambiguity and uncertainty in order to enhance social feasibility. Experiments are an example of phronesis, the combination of thinking and doing, envisioning and testing. Experiments can be seen as a means for plan development. Stakeholders should be involved in this process, from determining the aim to drawing lessons from the experiment.

Experiments enhance social feasibility in several ways. First, by conducting an experiment the municipality shows that they take the concerns of the residents seriously. Secondly, residents are more prone to accept an experiment because they know it can be undone when it proves not to work out. Thirdly, residents can experience for themselves what the impact of a measure is and maybe even get used to it. And fourthly, data and knowledge, for example on the perception of the measure, are being obtained by monitoring the impacts of the experiment, including impacts which were not foreseen by any of the participants.

The insights, experience and data gathered are input for further discussion, amongst participants, and further plan development. This is an iterative process.

Experiments deal with ambiguity by monitoring the impact and act accordingly. Experiments decrease uncertainty by showing what the impact will be, so the residents and professionals know what to expect. In the experiments the flexibility and robustness of the measures can be tested. Experiments provide a shared learning process. This corresponds with the suggestions for activities Bertolini (2017) makes for dealing with uncertainty: 1) assess the need for change, 2) explore alternatives, by experimenting, 3) develop promising solutions.

Living labs are an excellent way of involving stakeholders and testing solutions. By doing so the social feasibility of measures will be enhanced.

Like stakeholder involvement, experiments are not a new concept, but this research demonstrates the value of experiments in enhancing social feasibility.

What is stated here in general also applies for enhancing social feasibility of the implementation of measures inducing reduced demand. Experiments, like pilots, on road removal or reallocation of roads will provide experience and knowledge for all involved parties. Especially the collection of data on the impact on the total amount of traffic is imperative. These data will support the plan development and decision making.

5.2 Discussion

5.2.1 Implications for the practice of implementing measures inducing reduced demand

By implementing stakeholder involvement and experiments, the role of the municipality changes structurally, from all-knowing and all-providing to co-creating and researching, yet still guiding and facilitating. In terms of Stoker (2006), it is a transition from Traditional Public Administration (TPA) to Public Value Management (PVM). PVM is about networked governance in which the aims and means are negotiated between stakeholders and is based on shared learning which fits the opinionated modern society more than the TPA approach and is expected to lead to enhanced social feasibility of measures (Stoker, 2006).

An implication of this shift is the change of role of city councils. Councils will have to restrict themselves to directing through policy on outlines and will have to have trust in the processes for implementation of these policy outlines. These processes will vary from case to case. There cannot be a blueprint. Governance will be more dynamic. The processes can lead to unexpected results. Yet as long as the processes are performed correctly, the council has to decide positively on the outcome. The council will have to assess the results on the balance between costs and benefits for everyone and on the balance between public and private interest.

The involvement of stakeholders and the conduction of experiments will lead to elaborated planning processes. These processes will take more time and will take more and different social skills of project teams than in traditional planning processes. Yet, in the end the two approaches will most probably lead to smooth implementation of measures and robust, social feasible, solutions.

An important aspect of the two approaches is expectation management. When starting the process, it should be made clear to all involved parties that the aim of the process is to create resilient plans. There has to be a good balance in interests. And that in the end the city council decides on the implementation.

The projects in the “Agenda Autoluw” concerning cuts in the road network are driven by the need for the enhancement of the quality of public space and the transition to the use of active modes of transport. The ability of those measures to induce reduced demand is not recognised. Yet, from experiences elsewhere it can be assumed that the measures will induce reduced demand in car mobility. The proposed pilots will provide evidence whether this assumption is right or not.

For the development of the “Agenda Autoluw” the municipality of Amsterdam has consulted the population in an early stage. Still there is a reasonable amount of opposition against the

measures proposed in the Agenda. To be able to prevent this to happen the next time an analysis of how people were engaged and guided through the process is required.

5.2.2 IMPLICATIONS FOR TRANSITION PROCESSES AND THEORY ON INNOVATION

In the case of developing resilient cities transitions cannot be left to evolve by themselves. They need to be accelerated, implicating active managing of transition processes. As already been stated by Stephan van Dijk, these processes are being initiated by governmental organisations more and more, because metropolitan challenges are a case of public interest. This development can be seen as a transition in the way transitions usually develop as described by Geels (2002, 2005).

In most cases governmental institutions, like municipalities, have interest in keeping the socio-technical regime stable. In the case of developing resilient cities the municipality initiates the transitions. The practice of exploring together and experimenting becomes part of the socio-technical regime. The experiments themselves are part of the developing of ideas/innovations in the niches.

Substantiated by Feitelson and Salomon (2004) (see section 3.3.2) this thesis shows that social feasibility is a key factor in transition and innovation (Feitelson and Salomon, 2004). Here lies the challenge for the municipality. Actively enhancing the social feasibility of the implementation of measures inducing reduced demand will contribute to the transition to a sustainable car system.

Bertolini (2017) states that uncertainty cannot be reduced (Bertolini, 2017). It can be argued that this depends on the time scale one is considering. For the long term the statement can be assumed to be true. Yet, experiments can reduce uncertainty for the short term, which will suffice considering that on average transitions develop slowly.

In 2013, the author of this thesis research wrote a contribution to a publication called “The future of urban design”, suggesting two approaches for future urban design (Hermans and Westrik, 2015). The first approach is about designing for the short term, based on what we know. These developments must be able to be easily dismantled and replaced by something new, all within circular principles. The other approach is to design for what we do not know, implicating that these developments should be flexible and robust. It can be stated that these two approaches relate to the findings of this thesis research, addressing ambiguity and uncertainty in order to make transitions.

From the events around the Covid-19 virus, lessons can be learned. They show, in general, that behavioural changes that were previously considered to be impossible, suddenly prove to be possible. Social feasibility of certain issues or measures can turn around instantly. Next to that Jaap Tielbeke, in a pre-publication article on his book “*Een beter milieu begint niet bij je zelf*” (“*A better environment does not start with yourself*”), states that:

> *“The corona-crisis shows that governmental institutions can take far-reaching measures when the situation is urgent” (Jaap Tielbeke, June 5th 2020, p.26).*

One can argue that the behavioural change and the measures will only happen in cases of emergency. This implicates that it should be commonly recognised that by actively managing transitions to resilient cities it is attempted to prevent the occurrence of emergencies.

The findings and conclusions will probably sound very logical to scholars in transition thinking. Yet, the approach to get to these conclusions has been very specific. The conclusions are grounded in practice as well as in theory making them applicable in everyday practice. This research connects long term transitions to very specific projects in

practice. Without the specific projects there would be no transition. The key is in these projects.

5.3 LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

5.3.1 LIMITATIONS

Case studies do not prove anything, yet they provide examples of which can be learned. (Flyvbjerg, 2006)

The number of people involved in the surveys was very small. Because of this there is a reasonable chance that the results of the survey are not representative.

In the survey, although it was not intended like that, the emphasis in the question on the perception of the impact of the road closure came to be on what people perceived instead of how they perceived it, their personal perception. To, afterwards, still be able to determine the personal perception an analysis of the all the answers, the choice of words and the tone of the answers was done. This extra step probably will have influenced the outcome.

In the analysis of the surveys it was tested whether the 21 factors were of influence on the perception of the road closure. Yet, no distinction was made in the weight of the factor and also no attention was paid to other reasons which could have affected the perception.

The topic of this research is highly related to the science of human behaviour. Yet, no attention is paid to the reasons why the found aspects and factors are of influence on social feasibility.

5.3.2 RECOMMENDATIONS FOR FURTHER RESEARCH

This research intended to fill two knowledge gaps. The first was to gain knowledge on social feasibility of road closure projects by conducting a case study. The second was to gain insight on how to enhance social feasibility by connecting findings from reflection on theory to the findings of the case study. Both intentions were fulfilled. Yet, to be able to further substantiate the conclusions further research needs to be conducted.

This research was based on only one case study. For further development of approaches for enhancing social feasibility of the implementation of measures inducing reduced demand it is recommended to conduct more case studies, possibly for every neighbourhood of Amsterdam. In this way a very broad understanding of aspects influencing social feasibility will be developed and the generalisability of the findings will be increased.

To be able to make reliable estimations on the development of the total amount of traffic induced by road closures it is recommended to monitor the impact of comparable projects with counting loops and licence plate cameras. The gained knowledge can be used to scientifically underpin mechanisms in traffic behaviour, like reduced demand, which will enhance the social feasibility of the measures.

To be able to further scientifically substantiate the conclusion that stakeholder involvement enhances the social feasibility of measures it is recommended that the impact of projects that entail stakeholder involvement is monitored.

To be able to further scientifically substantiate the conclusion that experiments and pilots enhance the social feasibility of measures it is recommended that the impact of projects that entail experiments or pilots is monitored.

In fact, as part of the “Agenda Autoluw” a pilot for the cut (“knip”) in the Weesperstraat is being prepared at the moment. This would be a good testcase for the monitoring of the social feasibility as well as the impact on the total amount of traffic.

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7 APPENDICES

A FACTORS INFLUENCING PERCEPTION/SOCIAL FEASIBILITY

In section 3.4 literature on perception of nuisance and the acceptance of measures is described. From this literature factors influencing social feasibility (on road projects) can be distilled. These factors are the concepts used for the survey.

The factors found by Hamersma et al. (2017) were personal factors and environmental factors. Personal factors are socio-demographics, attitudinal factors, available information and coping strategies. These are about e.g. age, education, car ownership, sensitivity and the ability to reduce the effects. Environmental factors are proximity, (changing) environmental quality and government perception. These are about the effects the project has directly or indirectly and the trust in the government (Hamersma et al., 2017).

The factors found by Zhou (2010) are age and perception of functioning of the government, which overlap with those of Hamersma et al. (2017), but contain one extra factor, namely the attitude to the development. When people see the importance of the development, they are inclined to have a more positive perception (Zhou, 2010).

Cairns et al. (2002) found four rules to enhance social feasibility of road projects, namely : "(a) Get schemes right at the beginning, and ensure that all the details are implemented correctly." "(b) Monitor all issues of controversy, so that critics can be met with facts and ensure that facts are readily available as soon as possible." "(c) Use the press and the public consultation work to emphasise that there are likely to be initial problems." "(d) Implement controversial schemes in stages, try to influence any potential side-effects so that they are positive rather than negative, and ensure that the benefits from each stage are obvious" (Cairns et al., 2002)

Sridhar (2018) constructed a framework for acceptance of policy. It can be divided in 5 dimensions. The dimension of the policies characteristics is about e.g. whether the benefits and costs are equally distributed and the complexity of the policy. The physical context is on the effects of the policy. The institutional context is about the trust in the government and in the effort the government makes. The demographic and personal characteristics are about factors like age and gender and also about attitude. The psychological context is about factors like loss aversion, in which people are more afraid for the possible loss then content with the possible gain, or associative coherence, in which people act from experiences. To be able to use the factors determined by Sridhar for this research the framework is considered with a slightly different view. Sridhars framework is about the acceptance of policy. In this research it is used for the social feasibility of a measure, in this case the long term closure of a road leading to effects on roads nearby. So the policy's characteristics should be seen as the characteristics of the measure. The physical context is about the impact of the measure. And the psychological context is about the expectations and their background (Sridhar, 2018).

The translation from factors to questions is listed in table 9

Table 9: The translation from factors to questions for the survey

Factors	Questions
Socio-demographic context • Age • Gender • Education level • Resident or entrepreneur	What is your age? What is your highest level of education?

• Renter or owner	Are renter or owner of the dwelling?
Attitude • Means of transportation • Duration of residence • Sensitivity • Aim and importance of the project • Coping strategies	 What is your main mains of transportation? For how long do you live here? Do you consider yourself to be sensitive? Do you see the aim/importance of the project? Have you been able to take measures to reduce the negative effects?
Institutional context/ trust in government • Information before the start of the project • Information meeting • Involvement • Information during the project • Does as promised	 Were you informed about the project? How? Were there information meeting? Were you involved in the plan development? Did the municipality keep you updated? Did the municipality stick to their promises?
Psychological context • Expectations • Bias	 What did you expect before the start of the project? Why?
Character of the project • Perception	 How did you perceive the impacts of the project?
Physical context • Type of road • Impact • Problems during project • Mitigation	 What did you perceive during the project? Were there any problems during the project? Did the municipality do anything to reduce the negative impacts?

Resulting in the following survey:

Date:
Respondent nr.
Project:
Type of road:
Type of respondent:
Gender:

What is your age?
Are you renter or owner?
What is your profession?
What is your highest level of education?
Wat is your means of transportation?
For how long have you lived/worked here?
Do you consider yourself to be sensitive for bustle or noise?

How was the traffic before the road works/ closure?
How you informed about the road works/ closure?
Were there any information meetings?
Did you make inquiries yourself?
Were you involved in the planning of the implementation?
Did you understand the importance of the roadworks
What were your expectations on the effect of the road closure?
Where were those expectations based on?
How did you perceive the actual effects of the road closure?
Which effects did you perceive?

Did the effects change over time, during the road works?
Have you been able to take measures to reduce the negative effects?
Did the municipality take any measures to reduce the negative effects?
Did the municipality stick to their promises?
During the project, did anything go wrong which affected the traffic in this street?
Did the municipality keep you updated, during the project ?
How do you perceive the traffic now?

Additional remarks:

B THE CODING PROCESS

Analysis of data

Here the process of analysis of the data gained from research is described.

Method of analysis: Segmenting and reassembling

1 Open coding (segmenting): breaking down, examining, comparing, conceptualizing and categorizing data.
2 Axial coding (describing categories): data are put back together in new ways after open coding, by making connections between categories.
3 Selective coding (reassembling): selecting the core category, systematically relating it to other categories and filling in categories that need further refinement and development

Research conducted:

- Analysis of traffic flows
- Location related research
- Semi-structured surveys
- Interviews implementors, policy maker and decision maker
- Reflection group
- Analysis of news media
- Interviews innovators

Step 1 Open coding

1.1.1 Location related research
Theme: Location (Brug 108, van Wou)
Theme: factor influencing perception (renter/owner, level of education, duration of residence, age, type of road)
Theme: perception (pleasant living, feeling at home)

1.1.2 Surveys
Theme: location
Theme: expectations
Theme: what effects
Theme: how effects
Theme: perceptions project
Theme: relation how effects/perception project
Theme: relation expectations/ how effects
Theme: factor influencing perception (social demographics, attitude, information/trust in municipality, attitude to the project, psychological context, physical context/character of project, coping strategies)
Theme: Conclusion: cases give a multiplicit picture, even distribution

1.1.3 Interviews implementors, policy maker and decision maker
Overarching theme: The struggle with social feasibility/balance in public interest and personal interest in road closure projects.
Theme: information
Theme: contact with residents and entrepreneurs
Theme: criteria for the assessment of the effects of traffic measures
Theme: opinions affecting decision making, support is elusive

Theme: narrative (substantiating the vision)
Theme: vision
Theme: use of models
Theme: difference in acceptance maintenance projects (temporary) and measures form policy choices (for ever)
Theme: disappearing traffic
Theme: balance between costs and benefits of measures
Theme: being open and transparent (social feasibility)
Theme: stakeholder involvement
Theme: pilots

1.1.4 Analysis of news media
Theme: Location
Theme: perception project (no stir)

1.1.5 Analysis of traffic flows
Theme location
Theme: traffic intensities (increasing, decreasing)
Theme: disappearing traffic (?)

1.1.6 Reflection group
Overarching theme: The struggle with social feasibility/balance in public interest and personal interest in road closure projects.
Theme: information
Theme: factors influencing perception
Theme: perception project
Theme: relation how effects/perception project
Theme: relation expectations/ how effects
Theme: difference in acceptance maintenance projects and measures form policy choices (no benefits in the first)
Theme: use of models
Theme: traffic intensities
Theme: disappearing traffic
Theme: use of results of earlier perception research
Theme: difference between expectations and perception of measures
Theme: pilots/experiments.

1.1.7 Interviews innovators
Theme: Ways to handle ambiguity, uncertainty and social feasibility in order to be able to innovate.
Subthemes:

Ambiguity:
- stakeholder involvement,
- do not look back (results in the past are no guarantee for the future),
- imagination,
- pilots,
- hard numbers,
- attention, time and money.
- analysis

Uncertainty:
- scenario planning,
- working iteratively,
- vision, ideal

- knowing and acting: phronesis
- people skills.
- Social feasibility:
  - prototypes, pilots, phasing, living labs,
  - stakeholder involvement
  - creating common understanding,
  - inclusivity.

Step 2 Axial coding and Step 3 Selective coding

Core theme 1: Perspective of professionals:
The struggle with social feasibility/balance in public interest and personal interest in road closure projects.

- Interviews implementors, policy maker and decision maker
  Overarching theme: The struggle with social feasibility/balance in public interest and personal interest in road closure projects.
  Theme: information and Theme: contact with residents and entrepreneurs
  Theme: criteria for the assessment of the effects of traffic measures
  Theme: opinions affecting decision making, support is elusive
  Theme: narrative (substantiating the vision) and Theme: vision
  Theme: difference in acceptance maintenance projects (temporary) and measures form policy choices (for ever)
  Theme: use of models
  Theme: disappearing traffic
  Theme: balance between costs and benefits of measures
  Theme: being open and transparent (social feasibility)
  Theme: stakeholder involvement
  Theme: pilots

- Reflection group
  Overarching theme: The struggle with social feasibility/balance in public interest and personal interest in road closure projects.
  Theme: difference in acceptance maintenance projects and measures form policy choices (no benefits in the first)
  Theme: use of models
  Theme: traffic intensities
  Theme: disappearing traffic
  Theme: pilots/experiments.

Core theme 2: Perspective of residents and entrepreneurs:

Survey results + location

- Analysis of traffic flows
  Theme: traffic intensities (increasing, decreasing)
  Theme: disappearing traffic
  Theme location

- Location related research
  Theme: Location (Brug 108, van Wou)
  Theme: factor influencing perception (renter/owner, level of education, duration of residence, age, type of road)
  Theme: perception (pleasant living, feeling at home)

- Surveys
  Theme: location
  Theme: expectations
  Theme: what effects
  Theme: how effects
  Theme: perceptions project
  Theme: relation how effects/perception project
  Theme: relation expectations/ how effects
  Theme: factor influencing perception (social demographics, attitude, information/trust in municipality, attitude to the project, psychological context, physical context/character of project, coping strategies)
  Theme: Conclusion: cases give a multiplicit picture, even distribution

- Analysis of news media
  Theme: Location
  Theme: perception project (no stir)

- Reflection
  Theme: perceptions project
  Theme: relation how effects/perception project
  Theme: relation expectations/ how effects
  Theme: factors influencing perception
  Theme: information

Core theme 3: Perspective of innovators:
Ways to handle ambiguity and uncertainty in order to be able to innovate.
Conclusion: social feasibility is impacted by ambiguity and uncertainty
Subthemes:

- Ambiguity:
  - stakeholder involvement,
  - inclusivity
  - imagination,
  - prototypes
  - pilots, living labs
  - hard numbers,
  - creating common understanding
  - attention, time and money.
  - analysis

- Uncertainty:
  - scenario planning,
  - working iteratively,
  - vision, ideal
  - knowing and acting: phronesis
  - people skills.
  - do not look back (results in the past are no guarantee for the future),
  - pilots
  - phasing

Relate back to:
- Interviews professionals
  Theme: information

Theme: contact with residents and entrepreneurs
Theme: narrative (substantiating the vision)
Theme: vision
Theme: use of models
Theme: being open and transparent (social feasibility)
Theme: pilots

- Reflection
  Theme: information
  Theme: factors influencing perception
  Theme: use of models
  Theme: use of results of earlier perception research
  Theme: pilots/experiments.

C CHARACTERISTICS OF THE NEIGHBOURHOODS AND ROADS

This section contains the found data on the relevant characteristics of the neighbourhoods and roads

C.1 BRUG 108

- The neighbourhood Frederik Hendrikbuurt was developed in the late nineteenth century.
- The neighbourhood mainly consists of housing, stacked to four floors. Along the main roads, like the Tweede Hugo de Grootstraat, there are shops, cafés and restaurants.
- Nowadays the property value of the housing lies between 6416 and 7699 euro per square meter, which is the second highest category.
- 40,7% (40,9%) of the housing is owned by the housing corporation. 29,1% (30,0%) is privately owned.
- The group of people with the age of 18 till 26 is 10,4% (14,2%), from 27 till 65 years is 70,2% (57%) and from 65 on the group is 10,2% (12,7) of the whole population of the neighbourhood.
- The distribution of height of income over the five quintiles is: 34 % (30), 20 % (21), 17 % (18), 14 % (14), 15% (17), from low to high.
- The percentage of people with a Dutch background is 52,6 % (45,6%).
- The percentage of high educated people is 56% (45%)
- The percentage of low educated people is 16 % (24%)
- The score for “pleasant living” in the neighbourhood” is 7,9 (7,4)
- The score for “feeling at home in the neighbourhood” is 8,0 (7,8)
- The average duration of residence is 8,3 years (8,8)
- This neighbourhood does not deviate a lot from the average scores in Amsterdam (which are between brackets) (data.amsterdam.nl, n.d.c, n.d.d)

C.2 VAN WOUSTRAAT

- The neighbourhood Oude Pijp was developed in the late nineteenth century.
- The neighbourhood mainly consists of housing, stacked to four floors. Along the main roads, like the van Woustraat and the Ceintuurbaan, there are shops, cafés and restaurants.
- Nowadays the property value of the housing lies between 6416 and 7699 euro per square meter, which is the second highest category.
- 21,7% (40,9%) of the housing is owned by the housing corporation. 35,4% (30,0%) is privately owned.
- The group of people with the age of 18 till 26 is 17,9% (14,2%), from 27 till 65 years is 61,8% (57%) and from 65 on the group is 8,2% (12,7) of the whole population of the neighbourhood.
- The distribution of height of income over the five quintiles is: 27 % (30), 19 % (21), 19 % (18), 14 % (14), 22% (17), from low to high.
- The percentage of people with a Dutch background is 53,5 % (45,6%)
- The percentage of high educated people is 62% (45%)
- The percentage of low educated people is 10 % (24%)
- The score for “pleasant living in the neighbourhood” is 7,8 (7,4)
- The score for “feeling at home in the neighbourhood” is 8,1 (7,8)
- The average duration of residence is 7,6 years (8,8)
- This neighbourhood does deviate at some points from the average scores in Amsterdam (which are between brackets). The residents in this neighbourhood are better educated and wealthier than the average resident in Amsterdam. (data.amsterdam.nl, n.d.c, n.d.d)

C.3 ROADS

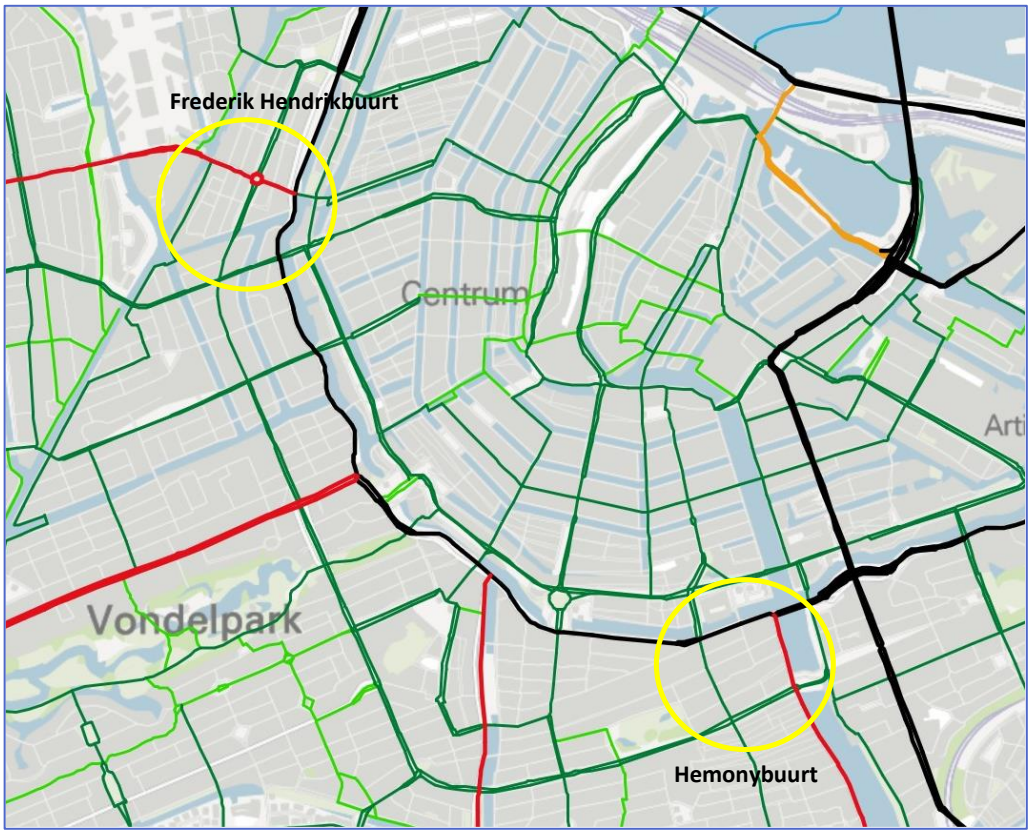


Figure 9: Overview of the mobility infrastructure network in Amsterdam. Red: Plusnet Cars, Black: Plusnet/Corridor Cars, Dark green: Plusnet Bicycle.(maps.amsterdam.nl, n.d.b)

Because of the closure of the De Clercqstraat (a normal citystreet) the traffic is diverted to the Tweede Hugo de Grootstraat and the Nassaukade. The Tweede Hugo de Grootstraat is part of the Plusnet for cars, S105 (red). The Plusnet consist of busy roads with through traffic and it connects to the national road network and main routes of adjacent municipalities. The focus of the Plusnet is the good flow of traffic. It comprises of the main routes for logistics. The average speed should be at least be 15 kilometres per hour. The lanes should be exclusively for cars and lorries, not to be mixed with public transport and bikes.

The Nassaukade is part of the Plusnet/Corridor for cars, S100, (black). Within the Pulsnet there are several parts with a collecting and distribution function. These are called the corridors. Because of their crucial role the requirements on flow for these roads are more stringent. The average speed should be at least be 30 kilometres per hour. Here the traffic also should not be mixed with public transport and bikes and the road should preferably consist of 2x2 lanes.

Because of the closure of the Northern part of the van Woustraat (a normal city street) the traffic diverts, among other streets, to the Ceintuurbaan (a normal city street) and to the Tweede Jan Steenstraat and the Hemonystraat (normal residential streets).These streets are part of the Basisnet. In the city streets the maximum speed is 50 kilometres per hour and in de residential streets 30 kilometres per hour. (Gemeente Amsterdam, 2018)

D FLOATING CAR DATA

Here the data on the impact of the two road closure projects on traffic intensities is depicted and described.

Brug 108

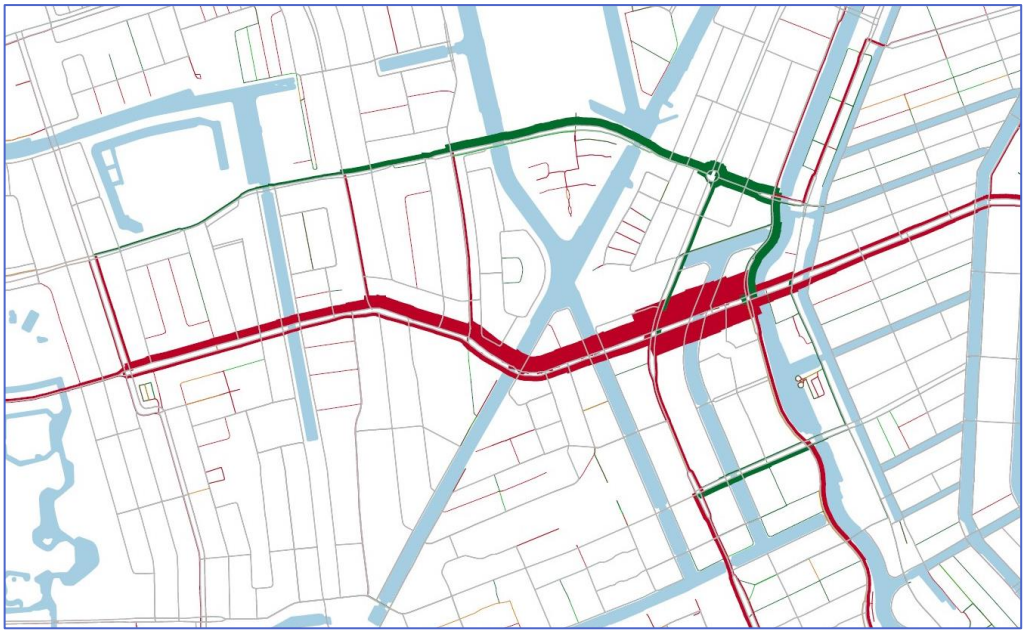


Figure 22: Brug 108: Comparison of traffic intensities two weeks before the re-opening of the bridge and two weeks after the re-opening of the bridge. Red: increase of traffic. Green: decrease of traffic

Van Woustraat

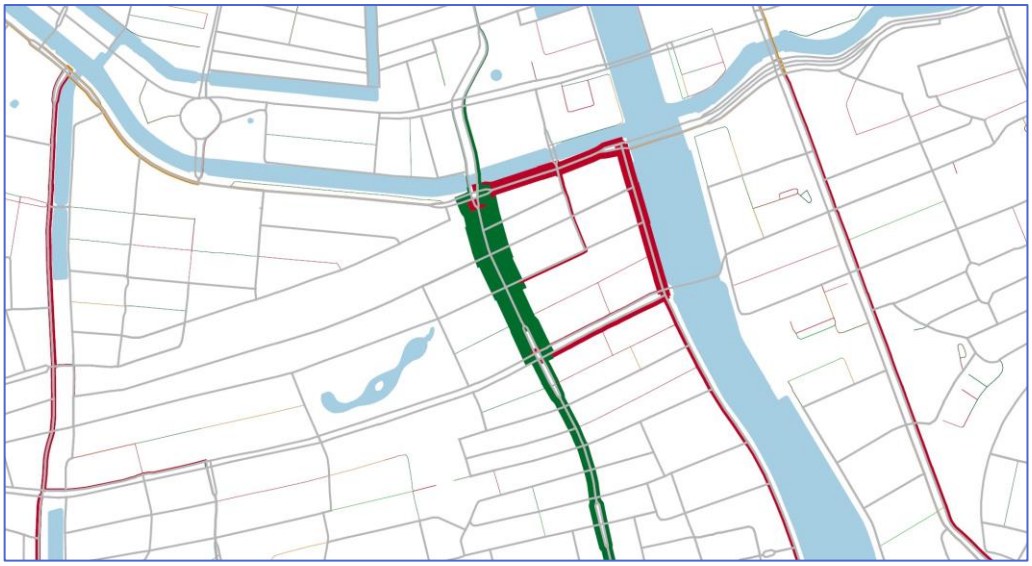


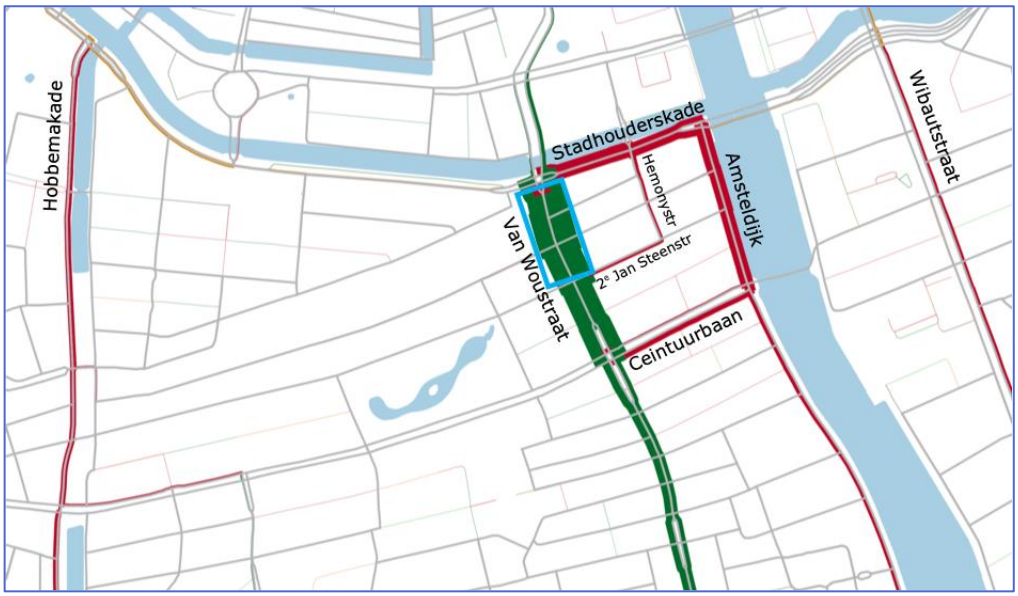
Figure 23: Van Woustraat: Comparison of the traffic intensities two weeks before the closure of the Northern part of the van Woustraat and two weeks after the closure. Green: decrease of traffic. Red: increase of traffic

From Aben et al. (2019), p.9-11:

"Wegwerkzaamheden Van Woustraat

In januari 2019 vond een herinrichting van het noordelijke deel van de Van Woustraat in Amsterdam-Zuid plaats. Hiertoe was de Van Woustraat tussen de Tweede Jan Steenstraat en de Stadhouderskade in beide richtingen afgesloten [4]. In 2017 is er een amendement aangenomen met daarin een voorstel om het noordelijk deel van de Van Woustraat (tussen de Ceintuurbaan en Stadhouderskade) alleen toegankelijk te maken voor bestemmingsverkeer. In het licht van dit voorstel waren de wegwerkzaamheden een goede gelegenheid om het effect van een mogelijke knip op de Van Woustraat te bestuderen.

Om dit effect te bestuderen zijn geen camera's of tijdelijke lussen geïnstalleerd dus de enige analyseapparatuur zijn de lusdata van de verkeersregelinstallaties en de FCD. In figuur 2 zijn de intensiteitsveranderingen van de FCD in het doelgebied gevisualiseerd. Een periode van twee weken waarin de Van Woustraat nog toegankelijk was (03-12-2018 t/m 16-12-2019) is vergeleken met een periode van twee weken waarin doorgaand verkeer niet mogelijk was (07-01-2019 t/m 20-01-2019). De relatieve ijkingsfactor die is toegepast is 0,917.



Figuur 2: Visualisatie FCD rondom werkzaamheden op het noordelijke deel van de Van Woustraat.

Binnen het blauwe vak was gedurende de werkzaamheden geen verkeer mogelijk. De dikte van de op de kaart geprojecteerde lijnen geeft het intensiteitsverschil aan. De kleur de relatieve toename (rood) dan wel afname (groen) van verkeer weer. De vergeleken periodes zijn de periode voorafgaand aan de werkzaamheden (03-12-2018 t/m 16-12-2019) met een periode tijdens de werkzaamheden (07-01-2019 t/m 20-01-2019)

De volgende effecten zijn zichtbaar:

- *Een logischerwijs sterke afname op het noordelijk deel van de Van Woustraat in beide richtingen;*
- *Verkeer in zuidelijke richting rijdt om via de Stadhouderskade en de Amsteldijk. De meerderheid van de voertuigen keert niet terug naar de Van Woustraat, maar rijdt de Amsteldijk in zuidelijke richting af;*
- *Verkeer in noordelijke richting rijdt voor het grootste gedeelte om via de Ceintuurbaan, Amsteldijk en Stadhouderkade. Dit is de kortste lus van doorgaande wegen;*

- *In noordelijke richting wordt ook voor een deel voor de alternatieve route via de Wibautstraat gekozen;*
- *In noordelijke richting en in mindere mate ook in zuidelijke richting wordt als alternatieve route voor een route via de Hobbemakade gekozen;*
- *In noordelijke richting is er duidelijk sluipverkeer zichtbaar via de Tweede Jan Steenstraat en de Hemonystraat;*
- *Tot slot lijkt er op het oog verdwijnend verkeer te zijn, met name in zuidelijke richting.*

De analyse op basis van lusdata en de observaties aan de hand van de FCD komen op grote lijnen overeen. De lusdata geven absolute aantallen, wat een groot voordeel is. Het nadeel van de lusdata is dat er alleen informatie beschikbaar is op VRI gestuurde kruisingen en er geen onderscheid wordt gemaakt tussen de verschillende richtingen waarin het verkeer kan afslaan. Hierdoor is verkeer dat tussen twee VRI gestuurde 11 kruisingen afslaat niet zichtbaar en zijn de data lastig te visualiseren op een kaart. Een groot voordeel van de FCD is juist dat het sluipverkeer zichtbaar maakt, omdat er informatie beschikbaar is op alle wegsegmenten. Het sluipverkeer wat hierboven is beschreven, en relevant is voor een afweging over het wel of niet knippen van de Van Woustraat, was niet zichtbaar aan de hand van lusdata, omdat het niet via VRI gestuurde kruisingen ging. Bij het nemen van autoluw maatregelen is het belangrijk om sluipverkeer goed in beeld te krijgen en daarvoor zijn de FCD dus uitermate geschikt. In dit geval zijn de lusdata en de FCD twee methodes die elkaar dus goed aanvullen.

Het op het oog verdwijnend verkeer is nader onderzocht door de intensiteit van het verkeer dat in noordelijke richting op de Van Woustraat is afgenomen te vergelijken met verkeer dat in zuidelijke richting op andere wegen is toegenomen en vice versa. Richting het zuiden is er op de Van Woustraat een afname van 12.639 hits, terwijl er op de andere wegen richting het noorden een toename van 8.720 hits is. Dit levert een verschil op van 3.919 hits, wat zou betekenen dat er 31% verdwijnend verkeer is. Deze berekening is gedaan op basis van een relatieve ijkingsfactor van 0,917. Zoals in hoofdstuk 2 al werd beschreven heeft de relatieve ijking een beperkte nauwkeurigheid.

Als er net een aantal andere punten wordt gebruikt voor de ijking kan de ijking in totaal met 3% veranderen. We zien in dit voorbeeld dat als de relatieve ijkingsfactor 0,900 zou zijn, wat een verandering ten opzichte van de initiële factor is van nog geen 2%, er geen relatieve afname of toename van verkeer zou zijn. Of er wel of geen verdwijnend verkeer is ligt dus binnen de onzekerheid van de ijking. Een nauwkeurigere manier van ijken is nodig om de FCD te gebruiken voor dergelijke precieze kwantitatieve bepalingen". (Aben et al., 2019, p.9-11)

E LIST OF LINKS TO MEDIA EXPRESSIONS

Here the found media expressions are described.

Renovation Brug 108:

https://www.at5.nl/artikelen/177198/brug-de-clercqstraat-gaat-zeven-maanden-dicht-door-bacterin

https://www.dewestkrant.nl/brug-da-costakade-dicht-afstappen-en-lopen/

https://www.parool.nl/nieuws/brug-de-de-clercqstraat-na-maanden-weer-open~beb4f182/?referer=https%3A%2F%2Fwww.google.com%2F

https://www.dewestkrant.nl/brug-de-clercqstraat-weer-opengesteld/

Digital media expressions on the closure of the bridge and the De Clercqstraat were sought after. Only a few were found. There came from AT5, the local news channel, Het Parool, the local newspaper and De Westkrant, the digital newspaper of the city quarter. The articles concerned the announcement of the closure of the bridge in January and eleven months later the reopening of the bridge. No articles were found on people complaining about the nuisance this project might have caused or other trouble. From this fact it can be concluded that the nuisance was not big enough to complain about.

Tram rails renovation northern part Van Woustraat:

No links found.

Digital media expressions on the closure of the Northern part of the van Woustraat and the renovation of the tram rails were sought after. None were found. Not even announcements.

From this fact it can be concluded that the project was not considered as important and that the nuisance was not big enough to complain about.

F DATA AND ANALYSIS FROM THE SURVEY

Here the found data from the survey are described and analysed.

(For raw data on survey see Appendix G)

F.1 ANALYSIS OF EACH QUESTION ON ITS OWN.

Type of road (physical context)

	Centre ring	City radial	City road	Residents street	Total
Overall	7	7	6	9	29
Brug 108	7	7	0	0	14
Van Wou	0	0	6	9	15

Type of respondent (socio-demographics):

	Resident	Entrepreneur	Total
Overall	23	6	29
Brug 108	10	4	14
Van Wou	13	2	15

Age groups (socio-demographics):

	Till 24	25 till 49	50 till 64	Over 65	Total
Overall	3	14	8	4	29
Brug 108	1	5	5	3	14
Van Wou	2	9	3	1	15

Gender (socio-demographics):

	Male	Female	Total
Overall	10	19	29
Brug 108	5	9	14
Van Wou	5	10	15

Renter or owner (socio-demographics):

	Renter	Owner	Total
Overall	20	9	29
Brug 108	10	4	14
Van Wou	10	5	15

Education level (socio-demographics):

	Highschool	MBO	HBO	Academic	X	Total
Overall	2	4	7	14	2	29
Brug 108	2	3	3	5	1	14
Van Wou	0	1	4	9	1	15

X: did not ask

Transportation (attitude):

	W	B	E	C	P	W+B	W+P	B+P	B+C	W+B+C	Tot.
Overall	2	11	1	3	1	4	2	2	1	2	29
Brug 108	0	5	0	3	0	3	1	1	0	0	14
Van Wou	2	6	1	0	1	1	1	1	1	2	15

(W: walking, B: Biking, E: small EV (Canta), C: car, P: public transport)

Duration of residence (attitude):

	till 4 years	5 till 9 years	10 till 19 years	20 years and more	Total
Overall	9	4	9	7	29
Brug 108	2	1	5	6	14
Van Wou	7	3	4	1	15

Longest duration of residence: 54 years.

Sensitive to bustle or rumour (attitude):

	Yes	A bit	No	Total
Overall	13	2	14	29
Brug 108	5	1	8	14
Van Wou	8	1	6	15

Traffic situation before closure:

	Very busy	Busy	Not very busy	Total
Overall	2	20	7	29
Brug 108	2	11	1	14
Van Wou	0	9	6 (2+4)	15

How did you find out about the closure (institutional context)?

	Letter	Information board at site	Did not get informed	Total
Overall	19	1	9	29
Brug 108	10	1	3	14
Van Wou	9	0	6	15

Where there any information meetings (institutional context)?

	Yes	Probably	No	X	Total
Overall	4	21	1	3	29
Brug 108	2	11	1	0	14
Van Wou	2	10	0	3	15

X: forgot to ask
No one attended an information meeting.

Did you inquire yourself (attitude)?

	No
Overall	29
Brug 108	14
Van Wou	15

Did you participate in meetings about the implementation (institutional context)?

	No
Overall	29
Brug 108	14
Van Wou	15

Did you see the importance of the project (attitude)?

	Yes	No	X	Total
Overall	16	10	3	29
Brug 108	8	5	1	14
Van Wou	8	5	2	15

What did you expect (psychological context)?

	More traffic	No difference	No expectations	Less traffic	N.A	Total
Overall	12	2	5	1	9	29
Brug 108	6	2	3	0	3	14
Van Wou	6	0	2	1	6	15

N.A.: Not applicable: respondents who were not informed cannot have an expectation.

Why did you expect this (psychological context)?

	Experience	Logic	Avoiding trouble	N.A.	X	Total
Overall	5	8	1	14	1	29
Brug 108	3	5	0	6	0	14
Van Wou	2	3	1	8	1	15

N.A.: Not applicable: Respondents who were not informed and respondents who did not have an expectation after receiving the letter.
X: forgot to ask

How did you perceive the impact (character of the project/physical context)?

	Busier	Not too bad	No difference		Calmer	Do not know	Total
Overall	15	3	7		2	2	29
Brug 108	10	0	2		1	1	14
Van Wou	5	3	5		1	1	15

Which effects did you perceive (physical context)?
More answers possible:
Busier (8: 5+3), Safer (1: 1+0), Unsafe (1: 1+0), Congestion (8: 6+2), Less chaos: 2, Difficult to cross the road (3: 3+0), Stench (2: 2+0), More noise (3: 2+1), Restlessness (3: 2+1), Less customers (1: 1+0), More customers (1: +0), No change in customers (2: 1+1), Less parking spots (1: 0+1)

Did the effects change over time? (physical context)

	No	Do not know	N.A.	X	Total
Overall	10	1	6	12	29
Brug 108	8	1	1	4	14
Van Wou	2	0	5	8	15

N.A.: Respondents who did not no perceive any difference, do not perceive changes
X: Did not ask.

Did you yourself try to reduce the effects (coping strategies/attitude)?

	Yes	No	N.A.	X	Total
Overall	15	6	4	4	29
Brug 108	11	2	0	1	14
Van Wou	4	4	4	3	15

The solutions respondents mentioned were divided in two types, measures in the house or behavioural measures. More answers possible.
House: Double glazing (6: 6+0), Sleeping at the backside (1: 1+0), Do not open windows (2: 2+0)
Behaviour: Notifying the municipality (3: 2+1),Taking more time to get somewhere (1: 1+0), Move (1: 1+0), Behave while biking (1: 0+1), No biking at busy hours (1: 0+1), Change schedule (1: 0+1)

Did the municipality take measures to reduce the effects (mitigating/physical context)?

	Yes	No	Do not know	N.A.	X	Total
Overall	3	15	3	4	4	29
Brug 108	1	10	2	1	0	14

Van Wou	2	5	1	3	4	15

The measure taken by the municipality mentioned by the 3 respondents was: traffic controllers

Does the municipality stick to their promises (institutional context)?

	Yes	Do not know	N.A.	X	Total
Overall	4	3	12	10	29
Brug 108	4	1	9	0	14
Van Wou	0	2	3	10	15

Did anything go wrong in the meantime affecting traffic in your street (physical context)?

	It took longer	No	Do not know	N.A.	X	Total
Overall	2	5	7	2	13	29
Brug 108	1	5	6	1	1	14
Van Wou	1	0	1	1	12	15

Did the municipality keep you updated (institutional context)?

	Yes	No	Do not know	X	Total
Overall	4	8	7	10	29
Brug 108	4	5	4	1	14
Van Wou	0	3	3	9	15

How is the current traffic situation?

	As before	More busy	Total
Overall	26	3	29
Brug 108	11	3	14
Van Wou	15	0	15

F.2 ANALYSIS OF PERSONAL PERCEPTION OF EFFECTS

Here the personal perception of the respondents is determined by analysing the answers, the used tone and the choice of words.

- Respondent 1 states that there is always something going on effecting the traffic. She states in general that people who live here are familiar with that. C: Acceptance in general.
- Respondent 2 speaks of chaos and states that he likes to see the implementation of car low streets (autoluw). C: Does not like the situation in general.
- Respondent 3 speaks of a mess but adds immediately that this comes with living in the city. He did not perceive a difference. C: Acceptance in general.
- Respondent 4 uses words like chaos, congestion, stench, unsafe. She states that this the most polluted street in Amsterdam. C: Does not like the situation in general.
- Respondent 5 perceived more traffic during the road closure. C:-
- Respondent 6 states that she knew this was a very busy street when she moved to here. C: Acceptance in general.
- Respondent 7 (E) states that in general the traffic is not very busy. The road closure affected their work as real estate agency negatively. C: Did not like the road closure.
- Respondent 8 (E) states that because of the congestion, due to the road closure, there were less customers. C: Did not like the road closure.
- Respondent 9 (E) states that this is always a busy road because it is a connection between centre and ring road A10 and that the congestion did not affect the number of customers. C: Acceptance in general.
- Respondent 10 did not perceive any difference during the road closure. C:-

- Respondent 11 speaks of congestion, stench, impossible to cross the street. She also states that this is the filthiest street in Amsterdam. C: Does not like the situation in general.
- Respondent 12 speaks of longer time to cross the street, unsafe, noise, restlessness as effects of the road closure. C: Did not like the road closure.
- Respondent 13 perceived more traffic during the road closure. C:-
- Respondent 14 campaigned to get an zebra crossing implemented. She states that during the road closure it was harder than before to cross the road. The zebra was implemented after the road closure was already made undone. Now she feels safer. C: Minorly affected by the road closure.
- Respondent 15 (E) states that they do not perceive a lot of what is going on outside. He states that more traffic leads to more customers. C: Is not influenced negatively by any traffic.
- Respondent 16 states that the busyness does not disturb him. C: Is not influenced negatively by any traffic.
- Respondent 17 states that the only difference she perceived was restlessness during the road closure, because people were biking against the traffic. C: Minorly affected by the road closure
- Respondent 18 did not perceive any difference during the road closure. She considers the situation as not very busy. C: Is not influenced negatively by any traffic.
- Respondent 19 did not perceive any difference during the road closure. She considers the situation as normal. C: Is not influenced negatively by any traffic.
- Respondent 20 states that the street is busy but that is OK. He also states that he perceives not much of wat is going on outside, anyhow. C: Is not influenced negatively by any traffic.
- Respondent 21 states that she complained to the municipality because of the increase of traffic in the street. Also, she states that the project took longer than promised. C: Did not like the road closure.
- Respondent 22 perceived more traffic during the road closure. C:-
- Respondent 23 perceived more traffic during the road closure but she stated it was not too bad. C: Minorly affected by the road closure.
- Respondent 24 (E) states that the road closure did not affect their busyness negatively. Their customers generally arrive by taxi. She considered the situation before and after as busy. C: Acceptance in general.

Respondent 25 did not perceive any difference during the road closure. She considers the situation as not very busy. C: Is not influenced negatively by any traffic.

Respondent 26 states that there was a bit more traffic but he didn”t mind because he also wants to be able to get somewhere. C: Acceptance in general

Respondent 27 stated that during the road closure there were more traffic jams then normal which led to annoyances and that the project took longer than promised. C: Did not like the road closure.

Respondent 28 stated that in general there is a lot of short cut traffic, during the road closure is was worse. He stated that there were many traffic jams, including honking. In general, there is also a lot of traffic from people who are visiting the Albert Cuypmarkt, searching for a parking spot. C: Does not like the situation in general.

Respondent 29 stated that there was extra traffic due to the road closure. He accepted this because it was temporary. Also he suffered from the reduction in accessibility of parking spots in the neighbourhood. C: Minorly affected

The results are summarised in table 10.

Table 10: The distribution of respondents over five types of personal perception

Personal Perception	Does not like the traffic situation in general	Did not like the road closure	Minorly affected by road closure	Acceptance in general	Not influenced negatively	X	Total
Overall	4	5	4	6	6	4	29
Brug 108	3	3	1	4	0	3	14
Van Wou	1	2	3	2	6	1	15

Brug 108 and van Woustraat combined

Personal perception
From analysis of the answers and the used tone and language five types of perception could be distinguished: Does not like the traffic situation in general: 4, Did not like the road closure: 5, Minorly affected by the road closure: 4, Acceptance in general: 6 and Not influenced negatively: 6 Of 4 respondents the personal perception could not be determined.

9 respondents out of 25 do not like the traffic situation in general or did not like the road closure.

12 respondents out of 25 accept the traffic situation or are not influenced by it.

This analysis shows the distribution in perception of nuisance due to road closure, which is not significantly pointing in one direction, yet a small majority of the respondents accepts the traffic situation or is not influenced by it.

Brug 108

Personal perception
From analysis of the answers and the used tone and language four types of perception could be distinguished: Does not like the traffic situation in general: 3, Did not like the road closure: 3, Minorly affected by the road closure: 1, Acceptance in general: 4. Of 3 respondents the personal perception could not be determined.

6 respondents out of 11 do not like the traffic situation in general or did not like the road closure.

4 respondents out of 11 accept the traffic situation in general.

Van Woustraat

Personal perception
From analysis of the answers and the used tone and language five types of perception could be distinguished: Does not like the traffic situation in general: 1, Did not like the road closure: 2, Minorly affected by the road closure: 3, Acceptance in general: 2, Not influenced negatively: 6. Of 1 respondent the personal perception could not be determined.

3 respondents out of 14 do not like the traffic situation in general or did not like the road closure.

8 respondents out of 14 accept the traffic situation in general or are not influenced by it.

F.3 RELATION BETWEEN EXPECTATIONS AND PERCEIVED IMPACT ON TRAFFIC

Brug 108 and van Woustraat combined (Pivot table 12 op blad 5)

There were 29 respondents in total.

Expectations

From the 29 respondents 20 knew that the De Clercqstraat or the van Woustraat were going to be closed. To them it was asked what their expectations were before the start of the project. 12 of them expected more traffic in their own street, 2 expected no difference, 5 did not have any expectation and 1 expected there to be less traffic in her own street.

Perceived impact

Half of the respondents (15) experienced more traffic during the project. The other half stated that it was not too bad (3), there was no difference (7), it was calmer (2) or they did not know (2).

Relation between expectation and perceived impact

The respondents who were not informed about the road closure could not have formed an expectation. Those 9 people were not included in the analyses. 5 respondents did not have an expectation after receiving the letter. From the 15 predictions 7 proved to be as expected by the residents. For 8 predictions the perceived impact differed from the expectations. For 7 of those 8 predictions the perceived impact were less worse than expected. The only case in which the impacts were perceived as worse was from the one respondent who thought that traffic was going to be less during the road closure. 13 of the 15 respondents had stated their expectation was based on experience and logic.

Brug 108

In this neighbourhood there were 14 respondents.

Expectations

From the 14 respondents 11 knew that the De Clercqstraat was going to be closed. To them it was asked what their expectations were before the start of the project. 6 of them expected more traffic in their own street, 2 expected no difference and 3 did not have any expectation.

Perceived impact

Most of the respondents (10) experienced more traffic during the project. The others stated that there was no difference (2), it was calmer (1) or they did not know (1).

Relation between expectation and actual experience

The respondents who were not informed about the road closure could not have formed an expectation. Those 3 people were not included in the analyses.

3 respondents did not have an expectation after receiving the letter.

From the 8 predictions 6 proved to be as expected by the residents. For 2 predictions the perceived impact differed from the expectations. For 1 of those 2 predictions the perceived impact were less worse than expected. The other one could not tell how the impact was perceived. All of the 8 respondents had stated their expectation was based on experience and logic.

Van Woustraat

In this neighbourhood there were 15 respondents.

Expectations

From the 15 respondents 9 knew that the van Woustraat was going to be closed. To them it was asked what their expectations were before the start of the project. 6 of them expected

more traffic in their own street, 2 did not have any expectation and 1 expected there to be less traffic in her own street.

Perceived impact
In this neighbourhood there was no significant majority for any experience. 5 of the respondents experienced more traffic, for 3 it was not too bad, 5 respondents did not experience any difference, 1 stated that it had been calmer and 1 did not know.

Relation between expectation and actual experience
The respondents who were not informed about the road closure could not have formed an expectation. Those 6 people were not included in the analyses.
2 respondents did not have an expectation after receiving the letter.

From the 7 predictions 1 proved to be as expected by the residents. For 6 predictions the perceived impact differed from the expectations. For 5 of those 6 predictions the perceived impact were less worse than expected. The only case in which the impact was perceived as worse was from the one respondent who thought that traffic was going to be less during the road closure. 5 of the 7 respondents had stated their expectation was based on experience and logic.

This analysis shows the distribution in perception of nuisance due to road closure, which is significantly pointing in one direction. The majority of the respondents accepts the traffic situation or is not influenced by it.

F.4 FACTORS INFLUENCING PERSONAL PERCEPTION

Here the relation between each of the 21 factors individually and the personal perception is analysed. For analysis in Excel, see Appendix G.

Socio demographics

- Type of respondent: The distribution over the types of perception is almost even for residents as well as for entrepreneurs. It can be concluded that in these two cases being a resident or entrepreneur is no factor in perception of nuisance.

- Age of respondents: In the age group under 24 years the 2 respondents were “not influenced negatively”. In the age groups between 25 and 64 there is an even distribution over the five found types of perceptions. In the age group above 65 year the respondents were distributed over only two types of perceptions, namely “minorly affected” and “acceptance”. It can be concluded that in these two cases age is a factor in perception of nuisance.

- Gender: The distribution over the types of perception is almost even for males as well as for females. It can be concluded that in these two cases gender is no factor in perception of nuisance.

- Renter or owner: For the owners there is an even distribution with a slight accent on the “acceptance in general”. For the renters almost one third is “not influenced negatively”. The rest is evenly distributed. It can be concluded that in these two cases owner- or rentership is a factor in perception of nuisance.

- Education level: The distribution over the types of perception is almost even for 3 education levels (MBO, HBO, Academic), with some opposing accents among the academics. The 2 respondents who were educated at high school level both accepted

the situation in general. It can be concluded that in these two cases education level is almost no factor in perception of nuisance.

Attitude

- Means of transportation: The distribution over the types of perception is almost even for the 10 different combinations of means of transport (Walking, Biking, Canta, Car, Public transport, Walking and biking, Walking and public transport, Biking and public transport, Biking and car, Walking, biking and car). Only 6 of the respondents use a car. Among those 6 car users 3 “did not like the road closure” (5), 1 “was minorly effected” (3) and 2 “accepted the traffic situation in general” (7). The four respondents who “do not like the traffic situation in general” do not use a car. It can be concluded that in these two cases the means of transportation is a small factor in perception of nuisance.

- Duration of residence: Almost half of the residents living here for 0 till 4 years were “not influenced negatively”. De rest of them was evenly distributed. The distribution over the types of perception for the residents living here for 5 till 19 years was almost even, with some opposing accents in the 10 till 19 group. Almost half of the 20 years and more group “did not like the road closure”. It can be concluded that in these two cases duration of residence is a factor in perception of nuisance.

- Sensitivity to bustle and rumour: The distribution over the types of perception is almost even for the 3 different sensitivity levels (yes, a little and no). It can be concluded that in these two cases sensitivity is no factor in perception of nuisance.

- Did you see the importance of the project? The distribution over the types of perception is almost even for the 2 types of answers (yes, no). It can be concluded that in these two cases the importance of the project is no factor in perception of nuisance.

- Did you do anything yourselves to reduce the effects? The distribution over the types of perception is almost even for the 2 answers (yes, no). It can be concluded that in these two cases the ability to cope is no factor in perception of nuisance. Institutional context

- How were you informed?: The distribution over the types of perception is almost even for the 3 types of answers (letter, information sign and no information). It can be concluded that in these two cases being informed is no factor in perception of nuisance.

- Have there been information meetings? The distribution over the types of perception is almost even for the 4 types of answers (yes, probably, do not know, no). No one of the respondents attended the meetings. It can be concluded that in these two cases getting the chance to be involved is no factor in perception of nuisance.

- Did the municipality keep you updated? For the answer “no” the distribution over the types of perception is almost even. For the answer “yes” the emphasis is on the perception “acceptance in general”. For the answer “do not know” the accent is on the perception “does not like the situation in general”. It can be concluded that in these two cases keeping the residents updated is a factor in perception of nuisance.

- Did the municipality stick to their promises? The distribution over the types of perception is almost even for the 2 types of answers (yes, do not know). It can be concluded that in these two cases the reliability of the municipality is no factor in perception of nuisance.

Psychological context

- Expectations: For the answer "busier" the distribution over the types of perception is almost even, with a small emphasis on the perception "does not like the situation in general". Both respondents who answered that they expected no difference were in the "acceptance" in general" group. It can be concluded that expectations are a factor in the perception of nuisance.

- Why did you expect this? The distribution over the types of perception is almost even for the 3 types of explanations (experience, logic and avoiding problems). It can be concluded that in these two cases biases are no factor in perception of nuisance.

Physical context/ Character of the project

- Type of street: For the city radial and the residents street, the distribution over the types of perception is almost even. For the centre ring one type of perception was indicated significantly more. This accent was on "acceptance in general". For the city street one type of perception was indicated significantly more. This accent was on "not influenced negatively" (5 out of 6). It can be concluded that in these two cases the type of street is a factor in perception of nuisance.

- Perceived effect? For four of the type of answers (not to bad, no difference, calmer, do not know) the distribution over the types of perception is almost even. For the answer busier the type of perception "did not like the road closure" (5 out of 15) was indicated slightly more. It can be concluded that in these two cases the actual perceived effects are a factor in perception of nuisance.

- Did the effects change over time? From the eleven answers ten were "no". Those ten are evenly distributed over the types of perception. The eleventh answer was "do not know". It can be concluded that in these two cases evolving effects are no factor in perception of nuisance.

- Were there any problems during the implementation? For two types of answers (no, project took longer) the distribution over the types of perception is almost even. For the answer "do not know" one type of perception was indicated slightly more. This accent was on "acceptance in general". It can be concluded that in these two cases problems during the implementation in a unexpected way are a factor in perception of nuisance.

- Did the municipality do anything to reduce the effects? (mitigation)? The distribution over the types of perception is almost even for the 3 types of answers (yes, no, do not know). It can be concluded that in these two cases mitigation by the municipality is no factor in perception of nuisance. Traffic situation (no factor)

- Traffic situation before? The distribution over the types of perception is almost even for the 3 levels of busyness (not very busy, busy, very busy).

- Traffic situation afterwards? From the 3 respondents who answered that the street is busier now 2 "do not like the situation in general". For the answer "as before" the distribution over the types of perception is almost even, with less emphasis on the "does not like the situation in general".

Additional remarks (in Dutch)

- De fietsstoplichten bij het kruispunt Nassaukade en De Clercqstraat staan op een onlogische plek waardoor er veel conflicten zijn
- Gevaarlijk punt: bij kruispunt De Clercqstraat, daar waar de scooters op de weg moeten.

- Door de afsluiting van de Marnix staat rijden hier nu ook de bussen. Die maken meer herrie dan auto's
- De realisatie van de rotonde op het plein enige tijd eerder heeft de verkeersituatie flink verbeterd.
- Als je een straat op breekt maak het dan snel af. Soms ligt werk lang stil. Stem afsluitingen beter op elkaar af
- Onveilig, nieuwe zebra bij Dirk van der Broek helpt niet. Het is nog onveiliger geworden. De hoge parkeergelden werken vereenzaming in de hand. Mensen krijgen geen bezoek meer.
- Met de nieuwe zebra is het beter oversteken.
- Door de nieuwe zebra worden de auto's beter geleid
- Er zijn wel veel afsluitingen. Ik moet steeds een andere route zoeken.
- Gratis parkeren op zondag in de Pijp leidt tot parkeerplaats tekort
- Bouwprojecten in de straat hebben een te groot effect op parkeermogelijkheden (door afzetten en de grote hoeveelheid busjes)

G RESULTS SURVEY IN EXCEL

This section provides an overview of the raw data from the survey as well as the analysis of these data using pivotpables.

Table 11: The raw data from the survey

Respondent	Project	Datum	Type of street	Type of respondent	Leeftijd	leeftijd gegroepeerd (4)	Geslacht	Huurder of eigenaar	Beroep	Opleiding	Opleiding gegroepeerd (4)	Manier van verplaatsen?	Verplaatsen gegroepeerd
1	Brug 108	13-jan-20	Centre ring	Bewoner	70	65 +	v	Eigenaar	Maatschappelijk werkster	HBO	HBO	Fiets en lopen	L+F
2	Brug 108	13-jan-20	Centre ring	Bewoner	56	50-64	m	Huurder	GGZ/cultuur/ schilder	MBO	MBO	Fiets en openbaar vervoer	F+OV
3	Brug 108	13-jan-20	Centre ring	Bewoner	84	65 +	m	Huurder	Van alles	Lyceum	middelbare school	Lopen en fiets	L+F
4	Brug 108	13-jan-20	Centre ring	Bewoner	44	25-49	v	Huurder	Lerares	HBO	HBO	Fiets	F
5	Brug 108	13-jan-20	Centre ring	Bewoner	36	25-49	v	Huurder	Journalist	Acad.	Acad.	Fiets	F
6	Brug 108	13-jan-20	Centre ring	Bewoner	71	65 +	v	Huurder	Ontwikkelingshulp	HBS	middelbare school	Lopen en openbaar vervoer	L+OV
7	Brug 108	13-jan-20	Centre ring	Ondernemer	48	25-49	v	Huurder	Office manager makelaar	HBO	HBO	Auto	A
8	Brug 108	14-jan-20	City radial	Ondernemer	42	25-49	m	Huurder	Visboer	MBO	MBO	Auto	A
9	Brug 108	14-jan-20	City radial	Ondernemer	56	50-64	m	Eigenaar	Bakker	MBO	MBO	Fiets	F
10	Brug 108	14-jan-20	City radial	Bewoner	62	50-64	m	Huurder	Universitair docent	Acad.	Acad.	Fiets en lopen	L+F
11	Brug 108	14-jan-20	City radial	Ondernemer	58	50-64	v	Huurder	Cafémedewerker	X	X	Canta	Canta
12	Brug 108	14-jan-20	City radial	Bewoner	50	50-64	v	Eigenaar	Muziektherapeut	Acad.	Acad.	Fiets	F
13	Brug 108	14-jan-20	City radial	Bewoner	22	-24	v	Huurder	Student	Acad.	Acad.	Fiets	F
14	Brug 108	14-jan-20	City radial	Bewoner	44	25-49	v	Eigenaar	TV Programma planner	Acad.	Acad.	Auto	A
15	van Wou	15-jan-20	City road	Ondernemer	42	25-49	m	Huurder	Tattooeerder	X	X	Fiets	F
16	van Wou	15-jan-20	City road	Bewoner	25	25-49	m	Huurder	Vastgoedmakelaar	Acad.	Acad.	Tram	OV
17	van Wou	15-jan-20	City road	Bewoner	28	25-49	v	Huurder	Doctersassistente	HBO	HBO	Fiets	F
18	van Wou	15-jan-20	City road	Bewoner	21	-24	v	Huurder	Student	Acad.	Acad.	Fiets	F
19	van Wou	15-jan-20	City road	Bewoner	29	25-49	v	Huurder	In toerisme	HBO	HBO	Lopen	L
20	van Wou	15-jan-20	City road	Bewoner	20	-24	m	Huurder	Student	Acad.	Acad.	Fiets en tram	F+OV
21	van Wou	15-jan-20	Residents street	Bewoner	26	25-49	v	Eigenaar	Lerares	Acad.	Acad.	Tram en lopen	L+OV
22	van Wou	15-jan-20	Residents street	Bewoner	31	25-49	v	Eigenaar	Jurist	Acad.	Acad.	Fiets	F
23	van Wou	15-jan-20	Residents street	Bewoner	26	25-49	v	Eigenaar	Journalist	Acad.	Acad.	Lopen en fietsen	L+F
24	van Wou	16-jan-20	Residents street	Ondernemer	48	25-49	v	Eigenaar	Accountmanager/ belastingadviseur	MBO	MBO	Fiets	F
25	van Wou	16-jan-20	Residents street	Bewoner	25	25-49	v	Huurder	Consultant energietransitie	Acad.	Acad.	Lopen	L
26	van Wou	16-jan-20	Residents street	Bewoner	45	25-49	m	Huurder	Engineer	HBO	HBO	Fiets en auto	F+A
27	van Wou	16-jan-20	Residents street	Bewoner	54	50-64	v	Huurder	Adminstratief/organisatorisch medewerker	HBO	Acad.	Lopen, fiets en auto	L+F+A
28	van Wou	16-jan-20	Residents street	Bewoner	40	25-49	m	Eigenaar	Geen	Acad.	Acad.	Fiets	F
29	van Wou	16-jan-20	Residents street	Bewoner	72	65 +	m	Huurder	Kunstschilder	Acad.	Acad.	Lopen, fiets en auto	L+F+A

Respondent	Hoe lang woont /werkt u hier?	Woonduur gegroepeerd	Gevoelig voor drukte of geluid?	gevoelig gegroepeerd(3)	Verkeersituatie vooraf?	Situatie gegroepeerd (3)	Hoe hoorde u van de werkzaamheden	Informatie gegroepeerd (3)	Zijn er informatieavonden geweest? (4)	Heeft u zelf geinformeerd ? (	Meegepraat over uitvoering? (1)	Zag u het belang? (3)	Belang gegroepeerd (3)	Verwachtingen ?	Verwachtingen gegroepeerd (5)
1	40 jaar	20 +	Ja	ja	Altijd druk	druk	Brief en bord bij brug	Brief	Vast wel	Nee	Nee	Ja	Ja	Geen verschil	Geen verschil
2	25 jaar	20 +	Ja, steeds meer voor vliegtuigen	ja	Chaos, door VRI Rozengracht	erg druk	Brief en krant	Brief	Weet niet	Nee	Nee	Ja, scheuren	Ja	Meer verkeer	Meer verkeer
3	54 jaar	20 +	Nee	nee	Puinhoop, dat hoort erbij	erg druk	Infobord bij werkzaamheden	Infobord	Weet niet	Nee	Nee	Ja, onderhoud	Ja	Geen verschil	Geen verschil
4	11 jaar	10 tm 19	Ja	ja	Best druk	druk	Brief	Brief	Vast wel	Nee	Nee	Nee	Nee	Chaos, andere route naar werk	Meer verkeer
5	9 jaar	5 tm 9	Nee	nee	Druk	druk	Niet	Niet	Weet niet	Nee	Nee	Nee	Nee	nvt	nvt
6	4 jaar	0 tm 4	Nee	nee	Altijd druk, veel afsluitingen, dat wist ik toe ik hier ging wonen	druk	Brief	Brief	Vast wel	Nee	Nee	Ja	Ja	Meer verkeer	Meer verkeer
7	10 jaar	10 tm 19	Nee	nee	Niet erg druk	niet erg druk	Brief	Brief	Ja	Nee	Nee	Ja	Ja	Beperking bewegings vrijheid	Meer verkeer
8	50 jaar	20 +	Nee	nee	Druk	druk	Brief	Brief	Weet niet	Nee	Nee	x	X	Drukker	Meer verkeer
9	19 jaar	10 tm 19	Nee	ja	Druk, dit is de route naar de ring	druk	Brief	Brief	Nee	Nee	Nee	Ja	Ja	Geen	Geen
10	28 jaar	20 +	Ja	ja	Druk	druk	Brief	Brief	Vast wel	Nee	nee	Ja	Ja	Geen	Geen
11	Verscheidene jaren, af en aan	10 tm 19	Nee	nee	Altijd druk	druk	Brief	Brief	Vast wel	Nee	Nee	Ja, onderhoud	Ja	Drukker	Meer verkeer
12	24 jaar	20 +	Ja	ja	Druk	druk	Niet, maar gezien	Niet	Weet niet	Nee	nee	Nee	Nee	nvt	nvt
13	2 jaar	0 tm 4	Beetje	beetje	Druk	druk	Brief	Brief	Ja	Nee	Nee	Nee	Nee	Geen, niet meer over brug	Geen
14	10 jaar	10 tm 19	Nee	nee	Altijd druk	druk	Niet, maar gezien	Niet	Weet niet	Nee	Nee	Nee	Nee	nvt	nvt
15	13 jaar	10 tm 19	Nee	nee	Druk	druk	Brief	Brief	Vast wel	Nee	Nee	Ja	Ja	Drukker	Meer verkeer
16	5 jaar	5 tm 9	Nee	nee	Best druk, maar stoort niet	druk	Brief	Brief	Vast wel	Nee	Nee	Nee	Nee	Drukker, tram voller	Meer verkeer
17	2 jaar	0 tm 4	Best wel	ja	Altijd druk	druk	Brief	Brief	Vast wel	Nee	nee	Ja	Ja	Geen	Geen
18	3 jaar	0 tm 4	Ja	ja	Gemiddeld druk	niet erg druk	Brief	Brief	Weet niet	Nee	nee	Nee	Nee	Meer verkeer	Meer verkeer
19	3 jaar	0 tm 4	Wel voor drukte	ja	Normaal	niet erg druk	Niet, gezien toen het begon	Niet	X	X	Nee	X	X	nvt	nvt
20	2 jaar	0 tm 4	Nee	nee	Prima, wel druk altijd	druk	Niet, gezien toen het begon	Niet	X	X	Nee	Ja	Ja	nvt	nvt
21	1 jaar	0 tm 4	Nee	nee	Druk	druk	Niet, gezien toen het begon	Niet	Weet niet	X	Nee	X	X	nvt	nvt
22	5 jaar	5 tm 9	Ja	ja	Redelijk druk	druk	Brief en facebookpagina de Pijp	Brief	Ja	Nee	nee	Nee	Nee	Dat het rustiger zou worden	Rustiger
23	5 jaar	5 tm 9	Ja	ja	Middelmatig druk	niet erg druk	Brief	Brief	Ja	X	Nee	Ja	Ja	Drukker	Meer verkeer
24	18 jaar	10 tm 19	Ja	ja	Druk, o.a. door Lidl tegenover en auto's die tegen het verkeer in rijden	druk	Niet, gezien toen het begon	Niet	X	Nee	Nee	Nee	Nee	Nvt	nvt
25	1 jaar	0 tm 4	Beetje	beetje	Niet echt druk	niet erg druk	Niet, gezien toen het begon	Niet	Weet niet	Nee	Nee	Nee	Nee	nvt	nvt
26	10 jaar	10 tm 19	Nee	nee	Valt wel mee	niet erg druk	Niet	Niet	Weet niet	X	Nee	Ja	Ja	Geen	nvt
27	25 jaar	20 +	Nee	nee	Rustig	niet erg druk	Brief	Brief	Vast wel	Nee	Nee	Ja, wateroverlast	Ja	Niet over nagedacht	Geen
28	19 jaar	10 tm 19	Ja	ja	Wordt gebruikt als sluiproute	druk	Brief	Brief	Weet niet	Nee	Nee	Ja	Ja	Drukker	Meer verkeer
29	2 jaar	0 tm 4	Ja	ja	Druk	druk	Brief	Brief	Vast wel	Nee	Nee	Ja	Ja	Meer verkeer, minder parkeermogelijkheden omdat minder straten bereikbaar zijn en extra ronrijden	meer verkeer

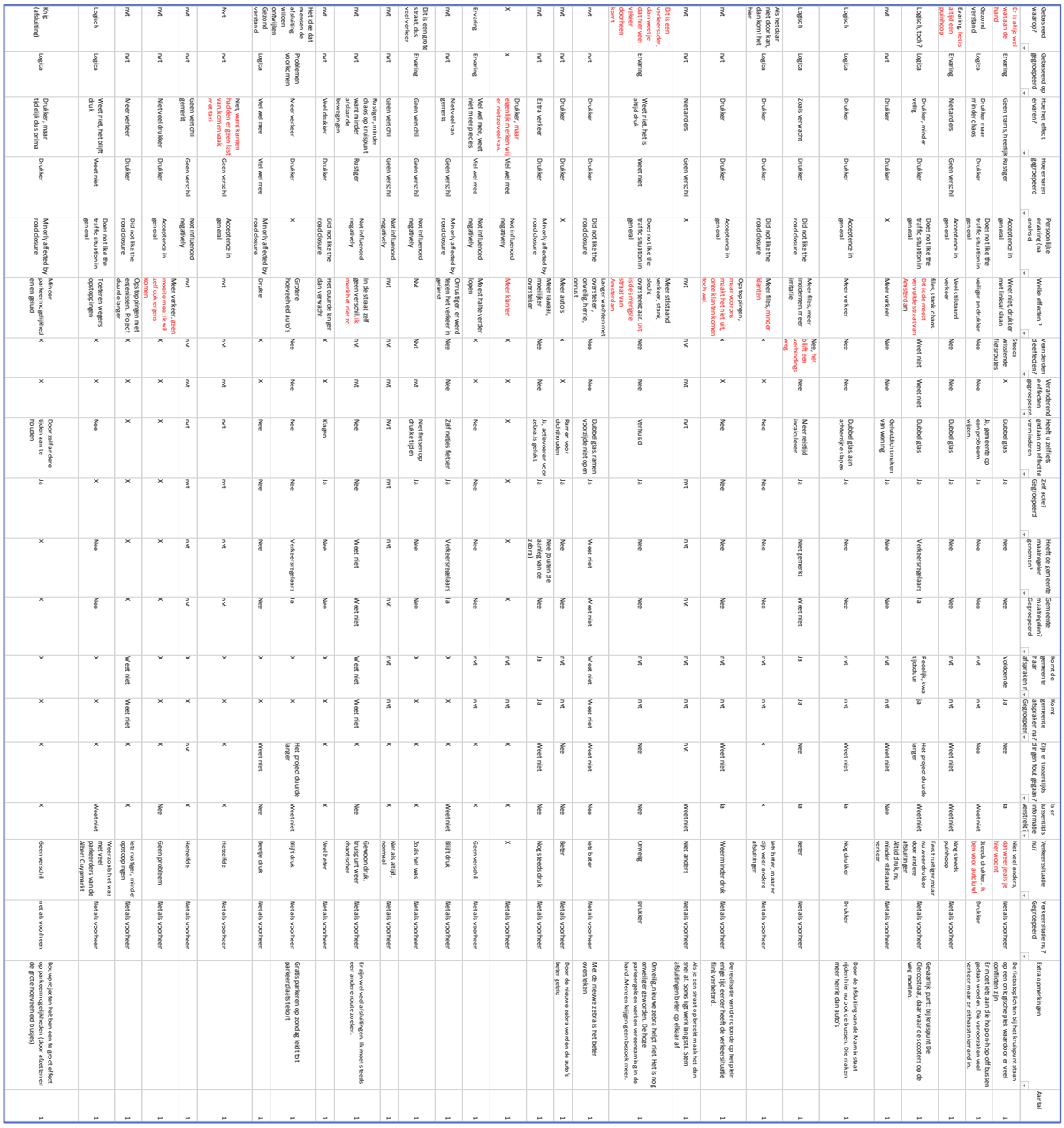


Table 12: The relation between expectations and perceived impact

Project	(Alle)	Relatie tussen verwachtingen en beleefd effect				
Som van Aantal	**Kolomlabels**					
Rijlabels	**Drukker**	**Geen verschil**	**Rustiger**	**Viel wel mee**	**Weet niet**	**Eindtotaal**
Geen	3	2				5
Geen verschil		1	1			2
Meer verkeer	6	1		3	2	12
nvt	5	3	1			9
Rustiger	1					1
Eindtotaal	**15**	**7**	**2**	**3**	**2**	**29**

Table 13: Pivot tables for each factor related to personal perception

Project	van Wou	Type respondent in relatie met de persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Bewoner	1	2	3	1	5	1	13
Ondernemer				1	1		2
Eindtotaal	**1**	**2**	**3**	**2**	**6**	**1**	**15**
Project	(Alle)	Leeftijdgroepen in relatie met de persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
-24					2	1	3
25-49	2	3	3	2	4	2	16
50-64	2	2		1	1		6
65 +			1	3			4
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Geslacht in relatie met de persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
m	2	1	1	3	3	1	11
v	2	4	3	3	3	3	18
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Eigendom in relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Eigenaar	1	2	2	3	1		9
Huurder	3	3	2	3	6	3	20
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Opleidingsniveau in relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
middelbare school				2			2
MBO	1	1		2			4
HBO	1	1	1	2	1		6
Acad.	1	3	3		4	4	15
X	1				1		2
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Wijze van vervoer in relatie met persoonljke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
L					2		2
F	2	1	1	2	2	3	11
Canta	1						1
A		2	1				3
OV					1		1
L+F			1	2		1	4
L+OV		1		1			2
F+A				1			1
F+OV	1				1		2
L+F+A		1	1				2
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Woonduur in relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
0 tm 4		1	2	1	4	1	9
5 tm 9			1		1	2	4
10 tm 19	3	1	1	3	1		9
20 +	1	3		2		1	7
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Gevoeligheid in relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
ja	3	1	3	3	2	2	14
beetje					1	1	2
nee	1	4	1	3	3	1	13
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Verkeerssituatie vooral in relatie met persoonlijke ervaring (geen factor)					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
niet erg druk		2	1	1	3		7
druk	3	3	3	4	3	4	20
erg druk	1			1			2
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Informatiebron in relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Brief	4	3	3	3	3	3	19
Infobord				1			1
Niet		2	1	2	3	1	9
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Informatieavonden? In relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Ja		1	1		2		4
Vast wel	2	1	2	2	2	1	10
Nee				1			1
Weet niet	2	3	1	2	2	1	11
X				1	2		3
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Inzicht in belang in relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Ja	3	2	3	5	2	1	16
Nee	1	1	1	1	3	3	10
X		2			1		3
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**

Table 14: Pivot tables for each factor related to personal perception - continued

Project	(Alle)	Verwachtingen in relatie met persoonlijke ervaring (geen factor)					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Meer verkeer	4	2	2	1	3		12
Geen verschil				2			2
Rustiger					1		1
Geen		1	1	1	2		5
nvt		2	1	2	3	1	9
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Basis verwachtingen in relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Ervaring	1			2	2		5
Logica	3	2	2	1			8
Problemen voorkomen					1		1
nvt		3	2	3	3	3	14
x					1		1
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Effect verkeer in relatie tot persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Drukker	2	5	2	3	3		15
Viel wel mee			1		2		3
Geen verschil			1	2	3	1	7
Rustiger				1	1		2
Weet niet	2						2
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Veranderende effecten in relatie tot persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Nee	2	2	2	2	2		10
Weet niet	1						1
nvt				1	4	1	6
X	1	3	2	3	2	1	12
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Coping strategies in relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Ja	3	3	3	3	1	2	15
Nee		1	1	1	2	1	6
nvt				1	2	1	4
X	1	1		1	1		4
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	mitigatie door gemeente in relatie tot persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Ja	1		1		1		3
Nee	3	2	2	4	2	2	15
Weet niet		2			1		3
nvt				1	2	1	4
X		1	1	1	1		4
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Komt gemeente afspraken na? In relatie tot persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Ja	1	1	1	1			4
Weet niet		2			1		3
nvt	2	1		3	3	3	12
X	1	1	3	2	2	1	10
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Fouten tijdens uitvoering? In relatie met persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Nee	2	1		1	1		5
Het project duur	1				1		2
Weet niet		1	2	3	1		7
nvt					1	1	2
x	1	3	2	2	5		13
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Tussentijdse informatie voorziening in relatie tot persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Ja		1		3			4
Nee	1	1	2	1	1	2	8
Weet niet	3		1	1	2		7
x		3	1	1	5		10
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Verkeerssituatie nu in relatie tot persoonlijke ervaring (geen factor)					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Drukker	2			1			3
Net als voorheer	2	5	4	5	6	4	26
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	type straat in relatie tot persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Centre ring	2	1		3	1		7
City radial	1	2	1	1	2		7
City road			1		5		6
Residents street	1	2	2	2	1	1	9
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**
Project	(Alle)	Type respondent in relatie met de persoonlijke ervaring					
Som van Aantal	**Kolomlabels**						
Rijlabels	**Does not like the traffic situation in general**	**Did not like the road closure**	**Minorly affected by road closure**	**Acceptence in general**	**Not influenced negatively**	**X**	**Eindtotaal**
Bewoner	3	3	4	4	5	4	23
Ondernemer	1	2		2	1		6
Eindtotaal	**4**	**5**	**4**	**6**	**6**	**4**	**29**

H REFLECTION GROUP MEETING

On the 2nd of march the results of the surveys were presented to a group of employees of the municipality of Amsterdam. Their reflection on the results is described here.

Partial transcript in Dutch, summary in English.

Participants:

- Dimitri Drijver, projectmanager "Autoluw" en circulatiemaatregelen
- Jesse Bolscher, adviseur bij programma "Autoluw"
- Bart van den Hoek, projectmanager circulatiemaatregelen bij programma Autoluw
- Dirk Iede Terpstra, adviseur Openbare Ruimte
- Niels Veld, afstudeerder bij programma "Autoluw"
- Max Klemens, assistent van Danielle voor de pilot Knip Weesperstraat
- Barry Ubbels, Verkeer en openbare ruimte, team onderzoek en kennis
- Jeff Guinee, adviseur bij "Autoluw"
- Marcel Bouman, projectleider voor de herinrichting van de van Woustraat
- Danielle Meiboom, projectleider Knip Weesperstraat en omgevingsmanager voor andere projecten.
- Fokko Kuik, Beleidsadviseur Verkeer en openbare ruimte, nm openbaar vervoer.
- Rick Batelaan, Beleidsadviseur Verkeer en openbare ruimte.

Jeff: Hadden ze geen brief gehad of hadden ze hem niet gezien?

Degene die hem niet onthouden hebben, zijn misschien al minder geboeid door wat er buiten gebeurt. Dat zou een verklarende factor kunnen zijn, voor de evenredigheid.

Danielle: Factoren die invloed hebben kan je die noemen?

Wat is dan de grootste groep die negatief is, als je dat combineert? Een huurder van middelbare leeftijd die voetganger is.

Dimitri: We moeten dus maatregelen nemen die verkeer sturen naar wijken met heel veel huizenbezitters. Veel minder gezeik. Als je moet kiezen…

Jesse: Terwijl het wel echt drukker is geworden. Maar de helft ervaart het niet.

Rick: In hoeverre heb je meegewogen of op de achtergrond, zoals bij de van Woustraat, ook een definitieve beleidskeuze meespeelt? Mensen zullen sociaal gewenste antwoorden geven als ze op een bepaalde oplossing voor de toekomst hopen.

Fokko: Ik hoor nu vooral over mensen die ergens wonen last hadden van het verkeer, maar hadden ze er ook last van dat ze zelf moesten omrijden?

Dirk Iede: Hoe heb je de mensen benaderd?

Bart: Dit ging om werkzaamheden als het om een definitieve situatie gaat dan blijft het zo en dan is er ook sprake van baten. Dat zou kunnen meewegen in de acceptatie.

Danielle: Na de herinrichting van de Munt is er nader onderzoek naar de beleving van de resultaten gedaan. Die zijn er wel.

Weet je wat daar de uitkomst van is? Het viel mee. Sommige bewoners vinden het rustiger en merken verbeterde luchtkwaliteit etc. Anderen zeggen dat het drukker is en dat ze er langer over doen om ergens te komen. Dat hangt er van af hoe slim je je knip kiest. Ondernemer, de helft daarvan had zoiets van: het is nou eenmaal zo, of het valt wel mee, het duurt wel wat langer voor laden en lossen maar het valt wel mee.

Barry: Ja, voor ondernemers viel het wel mee. Ze hebben ook specifiek fietsers onderzocht. Of het gevoel van drukte is toegenomen of niet, door die ingreep. Dat viel ook wel mee.

Ja, moeten juist ongelukkig geweest zijn.

Ja, klopt.

Barry: Je hebt specifiek onderzocht op een straat waar het drukker zou kunnen zijn. Ja, op basis van TomTom data. Autoverkeer.

In welke periodes was dat? Mogelijk dat het weer van invloed is geweest.

Max: Zijn mensen goed op de hoogte van het project? Er waren dan niet echt duidelijke baten dan, hier, maar weten mensen wel hoe lang het duurt, wat het inhoudt, wat er verandert in de circulatie?

Brieven.

Danielle: Dat die voetgangers het meest negatief waren dat vind ik toch wel bijzonder. Eigenlijk is dat de kwetsbaarste groep. Regelen we het dan niet goed met z”n allen? Zijn we bij al die omleidingen niet te veel op die auto gericht? Terwijl dus de fietsers en de voetgangers altijd het kwetsbaarst zijn en zij dus misschien meer last hebben van de omleidingen.

?: Hebben de mensen die het allemaal niet leuk vonden ook aangegeven dat het ook drukker werd of geen verschil, want het is al druk? Want anders is het groepje “geen verschil” maar 2.

Waarom ervaren ze dat? Slechter oversteken, onrust.

Anne: Hoe helpt dit jullie?

Fokko: Wat ik zou willen weten hoe de verwachte drukte, de ervaren drukte zich verhoudt met de cijfers. Is er echt sprake van verdampend verkeer. Het lijkt van wel.

Marco: Mag ik het onderzoek van de collega’s dan wel serieus nemen?

Bart: Ja zeker, het is alleen beleidsarm. Hij is ook zonder modal shift. Hij gaat er inderdaad vanuit dat verkeer water is. Het is een worst case.

Dimitri: Het grappige is dat de eerdere berekeningen die we bij autoluw hadden dat die wel aardig overeenkomen met wat er in de praktijk gebeurt. Dat strookt dan niet met het idee van verdampend verkeer. In de aanname zat niet zo zeer de verdamping en dat bleek achteraf ook, dat er geen verdamping was. Bij de Munt. Dit is wel interessant, om in de gaten te houden, hoe dit bij alle andere knips gaat lopen. Dat moeten we allemaal nog zien. Dus, op je vraag: wat hebben we er aan?, dat is lastig te bepalen omdat we nu nog in een traject zitten waarin we mensen vooraf moeten overtuigen van iets terwijl je hier iets hebt onderzocht achteraf. Wat vond je van de voor en na situatie. En ja, die na situatie zal nog wel even duren bij ons, in sommige gevallen tot het eind van het decennium. Dat vind ik lastig om te bepalen. Dat er scepsis is dat weten we allemaal, dat is een open deur. Dat je altijd voor en tegenstanders hebt dat is ook wel bekend. Er is altijd wel iemand die er last van heeft en iemand die wordt er beter van, dus ja.

Fokko: Die er beter van worden die hoor je niet.

Dimitri: Ja, dat weet je. Dus ik zie niet zoveel vernieuwends. Ja, eigenlijk had ik wel wat willen zien waar we nu in dit voortraject al wat mee kunnen doen. Moeten we misschien meer resultaten uit het verleden, die succesvol waren, meer benadrukken. Van: Jullie kunnen wel vertrouwen op onze verwachtingen want kijk. Daar wat meer aandacht aan besteden. Maar dat haal ik hier nog niet uit.

Voor mensen zal er toch een verschil zijn met tijdelijke werkzaamheden. De perceptie kan wel verschillend zijn. Aan de Kattenburgerstaat, waar we nu bezig zijn met groot onderhoud, daar zullen de mensen minder mekkeren dan als we hem straks definitief anders gaan inrichten.

Dirk Iede: Wat wel interessant is, bijvoorbeeld bij de Kattenburgerststraat, je had zo"n lijstje met aspecten waarop je kan beïnvloeden. Dat doen we. (Maar daar trappen ze niet in). Wat je hier van leert is dat, al die mensen die staan te demonstreren en tegen zijn, dat als je ze straks vraagt als het allemaal is ingevoerd dat straks de helft zegt, het viel achteraf gezien wel mee. Daar heb je in je verhaal naar de buurt niets aan, maar politiek misschien wel. Dat Dijksma denkt, dit durf ik toch wel aan, want voor de verkiezingen is het allemaal weer voorbij.

Marcel: Moet dat onderzoek dan niet veel uitgebreider dan, om dit soort conclusies te trekken. Ja!

Het is nu ook al een flinke tijd na dato, voor de van Wou. Dan is het allemaal alweer wat rooskleuriger. Mensen zijn de negatieve effecten alweer een beetje vergeten. Of er is al weer wat nieuws wat er speelt.

Rick: Misschien is dit onderzoek wel een bevestiging dat er een verschil is tussen prognose van hoe het verkeer verandert (bv 30% meer) versus hoe de mensen dat beleven. 30% meer verkeer moet niet meteen vertaald worden in 30% meer overlast. Als je dat meeneemt in je communicatie van je komende projecten dan kan het schelen.

Dimitri: Dat prediken we al. Wat ik wel mis is, er staat wel dat ze meer verkeer ervoeren maar ik had wel willen weten of ze ook meer overlast hebben ervaren. Voor ons is dat een heikel punt.

Anne: Je kan die link wel leggen, tussen de effecten en de beleving. Er zijn mensen die het wel drukker vinden maar die toch wel in die acceptatie groep zitten.

Dimitri: Dit is wel de achilleshiel van je onderzoek. De groep is vrij klein en als je dan weer dingen gaat combineren met nog kleinere plukjes uit die groep dan vind ik de onbetrouwbaarheid wel groeien. Dat zou je de steekproef moeten uitbreiden en dan krijg je meer correlatie. Dan zou ik er wat meer op durven varen.

Fokko: Heb je ook nog open vragen gesteld of waren het alleen maar gesloten vragen?

Anne: Gesloten met de mogelijkheid voor extra opmerkingen.

Anne: Ik kon natuurlijk geen full swing onderzoek doen. Ik vond het toch bijzonder dat er ook in deze kleine groep toch een even distribution uitkwam. En ik vermoed dat als je hem vergroot dat het niet erg veel schever zal gaan lopen.

Max: Was die groep ook zo verdeeld, als je kijkt naar of mensen goed geïnformeerd waren en slecht geïnformeerd, dat de goed geïnformeerde ook geduldiger waren. Waren de mensen die ineens een bord zagen staat bozer.

Anne: Nee, volgens de theorie uit de literatuur zou dat zo moeten zijn, maar dat heb ik dus niet gevonden.

Max: Dan kan je net zo goed niet communiceren. (don"t know, don"t care)

Dan krijg je daar weer gedoe over. Ja, je moet hoe dan ook zorgvuldig zijn.

Heeft het zin om mensen langs te sturen in een straat met veel tegenstand?

Fokko: Het leed wat men vreest is vaak groter dan het echte leed. Dat bleek ook bij de Munt. Dat is wel een soort kennis dat we op moeten bouwen. Daarom moeten we ook blijven meten.

Rick: Misschien moeten we wat minder cijfers in onze brieven opnemen.

Gewoon ergens een keer iets stiekem afsluiten. Hier? Hier heb je nooit langs gekund!

Anne: Ja, transitie is gebaat bij experimenten.

Barry: Daar doen we met Luca Bertolini inderdaad onderzoek naar.

Bart: Volgens mij is het bij experimenten ook erg van belang dat je ook de baten kan uitproberen. Met verkeerscirculatie is dat lastig. Om in een tijdelijke situatie wel die baten te creëren.

Marcel: Je hebt hier alleen maar gekeken naar de bewoners en niet naar de gebruikers.

Anne: Ja, want de meeste onderzoeken gaan juist over de gebruikers dus ik wilde nu specifiek naar de bewoners onderzoek doen. Ook ondernemers.

Summary

A lot of what is found in the surveys was already known in general. Yet it was nice to see that most of it was confirmed in this research, although for some participants the insights were new. It was discussed whether the found information on acceptance of measures could be used directly while informing residents. Some thought this was not appropriate, others thought that at some point in the process the information should be used combined with examples of other successful projects to convince residents.

It was stated that the insights from the survey can be used for underpinning proposals.

The main issues were:

- The even distribution of types of perception of measures. The opponents are not in the majority.
- Expectations of residents are no good guide in discussions. At least half of them do not come true. In most of the cases the results were perceived less worse than the expectations.
- The insight that increase of traffic does not always lead to a decrease of acceptance of a measure. Some people do not notice the increase of traffic, or sometimes other aspects influence the nuisance and because of that influence the perception.

Although the results were interesting the group stressed that the research to them was too small to draw big conclusions.

There was some discussion on the factors influencing perception. Could the ideal neighbourhood for measures be found? Others saw the opportunity to really influence acceptance. For instance, Why is it that pedestrians and bikers have a low acceptance rate? Should there be more attention for them?

The fact that informing residents on upcoming projects did not have a significant effect on the acceptance surprised some. It was concluded, that the municipality still should inform their residents.

It became clear that for bigger projects the municipality does conduct research on the perception of the results of the projects. The documents were provided by the municipality.

The evaluation of the project concerning the change in main routes through the city showed that almost 65% of the residents were positive or fairly positive about the change, 10% were neutral and 25% were fairly negative or negative about the change. For the entrepreneurs the figures were: 35% (+), 25% (0) and 35%(-) (Gemeente Amsterdam, 2019b)

The evaluation of the impact of the traffic measures in the vicinity of the Munt showed that 72% of the residents were positive or fairly positive about the change, 8% were neutral and 19% were fairly negative or negative about the change. For the entrepreneurs the figures were: 16% (+), 27% (0) and 50%(-) (Gemeente Amsterdam, 2017)

In the introduction of the presentation the principle of reduced demand was explained. Participants were interested and thought that this was useful for the development of plans and projects and for the communication to residents. They wanted to know more about it.

The discussion and the insights were useful for most of the participants. Not often there is opportunity to discuss these issues in a diverse group, starting to create a common understanding.

Their lessons learned (in Dutch):

- Ik ben het meest geïnteresseerd in het verschil beleving tijdelijke bewoners (huurders, studenten) en permanente bewoners (eigenaars). Is er meer betrokkenheid bij de straat onder permanente bewoners?
- Politiek vooral vanuit de inhoud blijven adviseren. Draagvlak is belangrijk, maar uiteindelijk telt de mening van de mensen als het eindresultaat behaald is het zwaarst.
- Les: minder met verkeerscijfers strooien, meer met verwachting van beleving en mogelijke overlast (kwalitatief). Leuk onderzoek!
- Besef dat je vooral tegenstanders hoort vs gelijke verdeling meningen.
- Drukker is niet altijd minder acceptabel! Let op context, weer, econ ontw. Achtergrond maatregel
- Koppel kwantitatieve data aan kwalitatief onderzoek. Dan maakt laag aantal respondenten minder uit.
- De analyse of perceptie overeenkomt met praktijk is voor ons relevant. Probeer hier mee uit te halen.
- Inzicht in beleving is interessant. Dat beleving en verwachting in 50% van de gevallen niet overeenkomt is nog interessanter.
- Dit onderzoek en deze methodiek vraagt om grotere groepen respondenten.
- Meest waardevolle les: dat acceptatie/negatieve beleving gelijkelijk verdeeld is over de respondenten. Dus als een actiegroep zich manifesteert wil dat nog niet zeggen dat de hele straat/hele buurt (de effecten van) de maatregel als negatief ervaren => altijd gedeeltelijk draagvlak.
- Dat communicatie d.m.v. brieven niet uitmaakt in de uiteindelijke acceptatie en beleving. Nuttige info voor mijn onderzoek.
- Interessante constatering dat geïnformeerd or niet, burgers 50/50 tevreden zijn over aanpassingen in de openbare ruimte. Hoe filtert die groep zich dan wel uit?
- Leuk onderzoek. Meer behoefte nog aan onderzoek naar “reduced demand”.
- Graag de 8 beïnvloedingsfactoren op een rij zetten.

I INTERVIEWS, SUMMARIES: PERSPECTIVES OF IMPLEMENTORS, A POLICY MAKER AND A POLITICIAN

Here the results of the interviews with two project leaders, a policy maker and a politician concerning the road closure projects in Amsterdam are described.

Social feasibility from the perspective of the implementors

Camiel Roskam, project leader Brug 108 municipality of Amsterdam:

Residents in the neighbourhood have received a letter informing them about the renovation of the bridge and the road closure. There has been an information meeting. Next to that the liaisons manager did have a lot of contact with residents and entrepreneurs. During the information meeting residents were invited to express their ideas. And during the project we were given feedback all the time. There were many complaints about the road closure. This could be expected when closing an important road. We solved this by approaching the complaining residents, explaining the situation, the need for the renovation, and showing understanding for their situation.

Peter de Vos, project leader van Wou, Gemeentelijk Vervoer Berdrijf:

Residents in the neighbourhood have received a letter informing them about the renovation of the tram rails and the road closure. There was no information meeting and there was no possibility for the residents to express their ideas. Yet, there was a liaisons manager who informed the entrepreneurs and who could be contacted. There are no complaints known from the residents on the Ceintuurbaan, the Tweede Jan Steenstraat and the Hemonystraat.

Social feasibility from the perspective of the policy maker

Dirk Iede Terpstra, traffic expert municipality of Amsterdam:

The municipality uses three criteria for the assessment of the effects of traffic measures: 1) the traffic flow (speed, the degree of obstruction of crossings and waiting time), 2) air quality (norms) and 3) support of the residents (expressions in news media and complaints). The first two can be modelled up front and are measured, through measuring points, during the projects. Although the air quality never exceeds the norms it is still a difficult topic. For the residents an increase of cars means an increase of air pollution which they do not accept.

The support of residents is quite elusive. Although it is known that there always will be residents who are against the measures and who will express themselves in the news media, it is not always known what the opinions all the other residents have. Even though it is suspected that opinions of the general public on the measures are divers, still the activists against the measures have a big influence on the policy makers, proposing measures, and the administrators, deciding on the measures. So this thesis research is of value to us. It helps to get a good view on the interplay of forces. It also adds to the narrative we need to justify our efforts. Now we mostly rely on models for traffic intensities and communicate the results. Yet we know these models are not perfect, although they are getting improved all the time. Still, there is a difference in the models (air quality and traffic intensity) showing that a measure will not lead to severe problems and the expectations residents have. So we need another perspective to add to the narrative, next to of course communication of the vision and goal behind the measures. Long term road closures can be considered as almost equal to definite closures because due to the long duration the impacts on behaviour and perception are the same.

Social feasibility from the perspective of the politician

Jeroen van Berkel, alderman for the district West in Amsterdam, taking care of mobility issues.

Did you hear of any problems concerning the road closure of the De Clercqstraat?

There has been not much fuss and complaints about that project. I think that the fact this closure was an emergency measure influenced the acceptance. This differs from measures taken out of policy choices. I, myself, did experience some extra congestion, but not much.

I am amazed by the fact that apparently some road closures have almost no negative effect in the neighbourhood. For example: When the N200, a really busy road, was reconstructed, there were no problems, even further away. The traffic seemed to have disappeared.

What is your opinion on the Agenda Autoluw?

Because of the Agenda Autoluw a lot of people are going to be happier. But some are going to be affected negatively. This is hard to explain.

I am going to fight the proposals for the Haarlemmerhouttuinen. Because the costs will outweigh the benefits. If they want to carry on with these plans than they have to have a really good story.

I agree with the main message of the Agenda Autoluw and I also know that there will be negative consequences for residents. In the case of the “knip” (cut) in front of Central Station the benefits are bigger than the costs. This I can understand and defend. But right now, I cannot for the plans for the Haarlemmerhouttuinen. For this I have requested an extra inquiry.

How can acceptance of measures be influenced?

This not only a matter of just participation. I have learned that to increase the acceptance we have to do research on the possibilities before involving residents. This is to make sure that what is discussed really can be implemented.

When people do not trust the conclusions of the municipality, I always allow them to arrange a second opinion. Sometimes this results in us adapting the plans, which is no problem to me.

Yet sometimes there are no alternatives and then we only inform the residents.

Being transparent and open in the process increases acceptance, even for the people how do not like the plans.

When measures are unavoidable, like maintenance, then acceptance by people is easier.

When it is about policy choices, the narrative should be really strong to obtain acceptance.

I do experience a shift in the city. Five years ago, I could not have proposed the cancelling of parking spots. Nowadays this is hardly a problem.

I enforced that the measure for the Haarlemmerhouttuinen can be a pilot first for half a year. Then we can see what happens and decide on what is best.

J SUMMARIES OF INTERVIEWS INNOVATORS

Here the results of the interviews with four innovators is described. They were asked the same question: How to deal with ambiguity and uncertainty in order to be able to innovate?

The summaries are in Dutch. At the end of this section, there is a summary of summaries in English: “Lessons from the interviews”

J.1 SAMENVATTING INTERVIEW THIJS TUREL, DONDERDAG 19 DECEMBER 2019

Hoe ga je om met meerduidigheid en onzekerheid als je wilt innoveren?
Waar kom je vandaan, waar wil je heen en hoe doe je dat?

Als het om het voor elkaar krijgen van innovatie gaat dan is veel belangrijker dan de analyse, het laten zien of het kan. Dat is de kracht van pilots.

(Maar als je een pilot hebt dan heb je toch een doel en hoe bepaal je, in deze meerduidige wereld dat doel?)

Het hele idee dat je op grote schaal op basis van wetenschappelijke methoden of zorgvuldige redeneringen of overwegingen een beslissing kan maken is in mijn ogen onzin.

Het probleem bij energietransitie en klimaatverandering is helemaal niet dat je moet analyseren en dan een oplossing moet testen en dan door. Hier speelt dat je nooit kan voorspellen hoe een oplossing gaat uitwerken. Je kunt hoogstens zeggen, laten we dit dan maar gaan proberen en dan maar kijken hoe het werkt.

Een manier van omgaan met onzekerheid is scenarioplanning. Er bestaat geen kenbare wereld meer.

Daar moeten veel bedrijven nog aan wennen. Die doen alles op basis van modellen en statistieken. Maar de loop van de geschiedenis laat zich niet vangen in statistieken. Geschiedenis is een experiment dat zich maar één keer herhaalt. Het gaat bij scenarioplanning te onderzoeken wat je nog niet weet.

En wat dan plannen aan de hand van scenario’s eigenlijk is, is een soort risicoanalyse. Waarin je verschil kan maken in een strategie die het goed doet is alle scenario’s, een gouden strategie, of dat je kiest voor een strategie die het in één scenario wat minder doet maar in een ander veel beter. En dat gaat ook over start- en stop opties. Een startoptie is dat jij jezelf tegen een kleine investering in een betere positie brengt om die bepaalde toekomst het hoofd te bieden. Bijvoorbeeld als jij als onderwijsinstelling denkt dat de digitalisering een enorme vlucht gaat nemen dan hoef je niet meteen al je docenten te vervangen door IT’ers, maar je kan wel één of twee IT’ers aannemen en tegen ze zeggen: ga jij eens een jaar lang naar conferenties en kijken waar het over gaat. Op het moment dat blijkt dat het inderdaad die kant uitgaat dan ben je veel sneller in staat om te weten waar je de innovatie op moet richten.

De stop optie is dat je zegt we gaan geen panden kopen op deze locatie, we gaan ze huren. Dus als dan de winkelstraat het minder goed doet dan we denken dat je er dan van af kan. Dan betaal je misschien wel meer dan dat je het zou kopen maar je hebt wel minder risico. Dat is erg innoveren in scenario land. Zo kan je omgaan met onzekerheid.

Het verhaal van contestable infrastructures is dat we zoveel nieuwe technologieën toepassen meestal vanuit efficiëntie vergroting maar dat daar een aantal gevaren aan vast zitten. Het is niet transparant en mensen worden buitengesloten. Responsible digitalisation. Het gaat ook om inclusiviteit en een eerlijke verdeling van baten en kosten. Daar zijn wij mee bezig.

Voor het Transperant Charching Station bezig waren hebben we getest met groepen mensen wat zij als transparant ervaren. Daar is toen een bepaalde interface uitgekomen.

Maar toen kwam de volgende vraag: als het transparant is, moet je er dan ook wat mee kunnen? Er zit een grens aan wanneer iedereen er wat mee moet kunnen.

J.2 SAMENVATTING INTERVIEW JAAP KOEN BIJMA, 14 JANUARI 2020

Hoe ga je om met meerduidigheid en onzekerheid als je wilt innoveren?
Waar kom je vandaan, waar wil je heen en hoe doe je dat?

De mens is een doenende denker of een denkende doener.

Het gaat over het professionele denken of het vrije denken, het ontwerpen, het scheppen, het creëren, om iets te bereiken.

Een innovator is niet alleen een denker die handelt vanuit fundamenteel onderzoek, waarin analyse de basis is. Het doel is tot nieuwe dingen te komen.

Het gaat ook om het doen, om de kust van de handling, het vakmanschap.

Het gaat om de phronesis: de praktische wijsheid. Daar moeten we in opgeleid worden.

We hebben mensen nodig die van uit die inzichten, bv het gaat niet goed met de aarde, over kunnen naar die handling. Dat gaat altijd over praktische wijsheid, en daar bedoel ik mee, je zult het met mensen moeten doen. Dat vraagt om sociale managementvaardigheden en ervaring.

Buiten het bestaande frame ideeën kunnen hebben is een interessante menselijke vaardigheid.

Daar heb je dus imagination voor nodig, inbeelding.

Wat analyseer je? Het gaat om waarnemingen, in brede zin. Maar de analyse hangt af van je bril/ je ideeën. Je kan ook je eigen denken analyseren en daar hoort ook het imagineren bij en het analyseren van je eigen droombeelden.

Nou, en dat spel van de innerlijke waarneming, die natuurlijk allerlei inspiratie had en opgestapelde ideeën uit wat je wel hebt gezien. Hoe beter je bent om daar iets nieuws aan toe te voegen, dus als je die skills set hebt, dan analyseer je dus een mogelijke, nog niet bestaande toekomst.

Dwazen kijken naar hun voetsporen, wijzen kijken naar de sterren.

Dit is kenmerkend voor innovators.

Ze denken namelijk: wat is het ideaal en ze ontwerpen vanuit het ideaal.

Een projectleider wil eerst weten en dan doen.

Een innovator doet dat anders: Die begint bij zijn hart en itereert steeds tussen denken en doen.

Hij weet dus ook niet waar hij heen gaat.

Hoe onderzoek je nou in vredesnaam iets dat er nog niet is. Door prototypes te maken. Trial en error. Dit leidt soms tot leuke spin-offs. Prototypes laten andere mensen aanhaken, er kan een gemeenschappelijk beeld ontstaan over iets dat nog niet bestaat (nodig voor sociale haalbaarheid)

Om dit te kunnen doen is er tijd en geld nodig en vrije denkers.

We zijn dit niet gewend, dus om het toch voor elkaar te krijgen met je klein beginnen.

Voor een innovator zijn er meerdere toekomstscenario's waarvan gedurende het proces uitkristalliseert welke haalbaar is in een bepaalde situatie.

Als innovator moet je niet van vastgestelde kader uitgaan en veel onbegrip en zelf tegenstand verwachten

De manier waarop onze kinderen worden opgeleid moet daarom ook drastisch veranderen (vrije denkers en people skills)

Dus het hebben als gewoonte om steeds weer te kunnen kijken, wat is hier nou de juiste handeling.

Als professioneel moet je je eigen manier ontwikkelen om met de ander te kunnen praten

Het ideaal van de professional is een in zichzelf gegronde vrije denker en handelaar.

J.3 SAMENVATTING INTERVIEW DIRK IEDE TERPSTRA, 3 FEBRUARI 2020

Hoe ga je om met meerduidigheid en onzekerheid als je wilt innoveren?
Waar kom je vandaan, waar wil je heen en hoe doe je dat?

Er is altijd weerstand tegen verkeersplannen, dus ook tegen nieuwerwetse ideeën die tot een leefbare en bereikbare stad moeten leiden.

Die hebben we kunnen verminderen door met recente harde cijfers te komen. Feitelijke cijfers tonen de noodzaak aan (analyse). Hoewel cijfers ook tegen je kunnen werken in voorspellingen uit modellen. We doen ons best om de modellen te verbeteren zodat de voorspellingen steeds beter worden.

Wat ook helpt zijn pilots. Hoewel we zelf best een goed idee hebben van hoe iets zich ontwikkelt, weten we het natuurlijk ook niet zeker. Maar door tegen iedereen te zeggen dat het een pilot is ontstaat er de ruimte om het te onderzoeken. Hier kunnen conclusies uitgetrokken worden, doorgaan, terugdraaien. Door dat het in real time getest wordt kan iedereen het merken en er ook aan wennen. Ook goed voor het draagvlak.

Als het gaat om sociale haalbaarheid van plannen dan is het goed om een beeld te krijgen van het krachtenspel van meningen en dit ook te communiceren zodat iedereen kan zien dat er voor en nadelen aan een ingreep zitten.

Belangrijk is ook om steeds te blijven hameren op het waarom je het uiteindelijk doet: De visie. Deze gaat natuurlijk over het grotere publieke belang, waarin de voordelen groter zijn dan de nadelen.

De Agenda Autoluw heeft zowel visie als maatregelen. Die maatregelen zijn gericht op zowel het generiek verminderen van autoverkeer als het fysiek herinrichten van situaties.

Fasering speelt hier ook een rol in. Ten eerste kan niet alles tegelijk. Ten tweede moet je het effect van ingrepen eerst zien, voor je verder gaat. Ten derde weet je niet hoe zaken zich

gaan ontwikkelen dus moet je alternatieven op de plank hebben liggen. Door steeds te monitoren kan je de plannen bijstellen.

J.4 SAMENVATTING INTERVIEW STEPHAN VAN DIJK, 4 FEBRUARI 2020

Hoe ga je om met meerduidigheid en onzekerheid als je wilt innoveren?
Waar kom je vandaan, waar wil je heen en hoe doe je dat?

De meerduidigheid in het bepalen van de opgave tackelen we door een brede discussie aan te gaan met stakeholders. Op die manier voorkom je dat je opgave te eenzijdig is. Het is wel zo dat op die manier de opgave dus ook wel bepaald wordt door stakeholders die daar tijd, geld een aandacht in willen steken. Zonder dit geen innovatie. Door gezamenlijk een visie te ontwikkelen, worden mensen enthousiast en gaat het leven.

Het is tegenwoordig zo dat innovaties nog het meest door de publieke sector worden geïnitieerd. Zij hebben belang dat er zaken opgelost worden maar hebben ook juist het brede maatschappelijk belang te dienen, waardoor ze breder inzetten. Bij AMS onderzoeken we ook eerst wat de mogelijke impact is op de samenleving, de stad, voor we er tijd en geld in steken, daar heb je dus wel je analyse voor nodig.

Je vergroot de kans dat je goed bezig bent door, tijdens je ontwikkeltraject, steeds iteratief te onderzoeken of je nog wel op de goede weg bent.

Het kan dan ook blijken dat je werk ook andere toepassingsmogelijkheden heeft.

Uiteindelijk is het niet te bepalen waar nou de echte innovatie in gaat zitten. Soms zit die op een heel ander vlak. Toch proberen wij bij AMS het wel steeds te koppelen aan het oplossen van stedelijke problematieken.

Scenario's zijn een erg goed middel om in co-creatie met stakeholders te ontwikkelen, om te bepalen welke onderzoeksrichtingen het meest robuust zijn.

Om politiek commitment te krijgen heb je sociaal commitment nodig. Dat kan je krijgen door zaken te demonstreren en testen in living labs. Door de interactie met burgers krijgen we veel input over de adoptiekansen van een innovatie. Het is goed om burgers in een vroeg stadium te betrekken, maar niet te vroeg, je moet wel iets, een visie, een beeld of een prototype, hebben om te bespreken.

Het betrekken van stakeholders is lastig, maar het belangrijkste is dat een proces organiseert waarin de belangen evenredig ingebracht kunnen worden.

The full transcription of the interviews can be provided on request.

J.5 LESSONS FROM THE INTERVIEWS

The only question asked was: How to deal with ambiguity and uncertainty in order to be able to innovate? Implicitly this question was about how to determine the starting point and its background, how to determine the goal and the path to the solution, knowing that reality is multiplicit and the future is unpredictable. And from this how will ever a solution become social feasible?

Stephan van Dijk states that to determine the goal of an innovation consultation of a broad scope of stakeholders is needed to get insight in the interests. To determine the path to the solution analysis is needed, to be able to underpin upfront why the solution is going to have the intended impact.

Thijs Turèl and Jaap Koen Bijma state that in order to be able to innovate analysis of what has been is not useful, both for different reasons. Thijs Turèl states that history is an experiment that is not repeatable. So analysis and calculation in models will not give any direction. More important than analysis for the development of an innovation is researching whether something is possible, through pilots. Jaap Koen Bijma states that only analysis of the own imagination will lead to new things. “Fools look at their footsteps, Wisemen look at the stars.”

Dirk Iede Terpstra states that analysis and hard numbers of the current situation are needed to substantiate the necessity for transition. The goal of transition is must be described in a vision which is democratically established.

Stephan van Dijk adds that innovation only will be possible when parties commit themselves to the case, by means of attention, time and money. This influences the decision on the goal and the path.

Stephan van Dijk and Thijs Turèl both state that scenario planning is a good way to deal with uncertainty in the future. Scenario planning is about exploring the unknown and is in fact a risk analysis. For uncertainty during the development process of the innovation Stephan van Dijk recommends to work iteratively, to every now and then question the goal and the path.

Jaap Koen Bijma states that uncertainty is not relevant for innovations. Designing should be done from an ideal, a vision. For this, doing thinkers or thinking doers are needed who can proceed from knowing to acting by imagining futures. This cannot be done alone therefore people skills are needed, listening and connecting, more than research skills.

Prototypes, pilots and living labs are means to increase social feasibility. Jaap Koen Bijma states that prototypes are the way to explore what is unknown. By creating something a common understanding can be developed and from this, new things can develop. To make this quest feasible one has to start on a small scale.

Dirk Iede Terpstra states pilots are the perfect way to explore the feasibility of a solution. The developers can test whether their assumptions were right, and the public can experience the impact of the measure without being stuck to the solution. Politicians and decision makers recognise the value of pilots. It helps them to determine which way to go.

Thijs Turèl states that in order to be socially feasible the solution has to be understandable and accessible for all people (inclusive) . Solutions should be tested on those properties.

Stephan van Dijk mentions living labs as a way to test, demonstrate and develop solutions. The feedback is valuable. It is preferable that the involvement of users begins early in the process but not until some idea or prototype is already developed.

JUNE 17, 2020

Final thesis

June 17, 2020

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