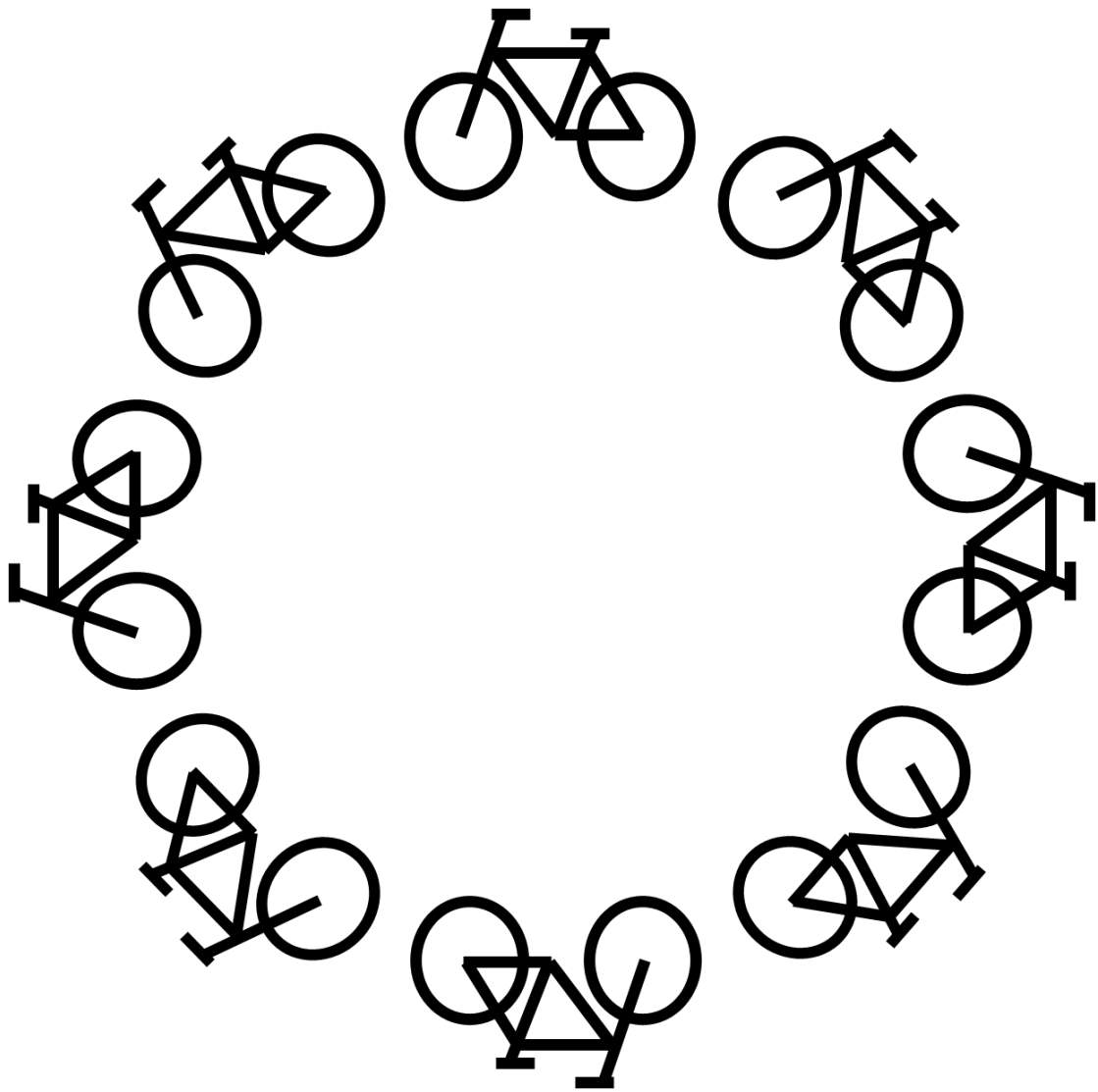


Making the Perfect Cycling Policy:

The Role of Evaluations in Dutch Municipal Cycling Policy

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Master Thesis Urban and Regional Planning
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SUMMARY

Motivation

This study is founded on the notion that there is a need to take a closer look at the decision-making processes surrounding cycling policy. As a result of rising urban populations and the urban mobility problems that come with it, policymakers around the world, and particularly in Europe and North America, are looking for new ways to organize urban mobility. Many of them are turning towards the bicycle as their solution (Harms, Bertolini, & Te Brömmelstroet, 2014; Heinen, Van Wee, & Maat, 2010).

To that end, numerous policy interventions have been and are still being implemented in various cities across the globe. In theory, those policy interventions are submitted to evaluations, both before and after implementation, in order to assess their effectiveness (Jann & Wegrich, 2007). As such, evaluation may seem to be a fairly straightforward process. In practice, however, evaluation of policy has traditionally been rather problematic, as proper evaluation, meaning assessment that excludes external influences such as social or spatial factors, is often time consuming and expensive and susceptible to political influences and communication problems (Hertin et al., 2009; Weiss, 1999).

Keeping in mind the value that is attached to policymaking in the encouragement of cycling in earlier research (Oldenziel et al., 2016; Pucher, Dill, & Handy, 2010), it is all the more interesting that the influences on cycling policymaking, and therefore the role of evaluations as well, have remained unstudied. The few studies that, to the author's knowledge, have actually studied this topic, primarily regard to it from a rational instrumental perspective, evaluating the effectiveness of certain policy measures, not taking into account the wider context in which evaluations are carried out. Having a closer look at the how and why behind cycling policy and the usage of evaluations may therefore shed new light on what we regard to as successful policies.

Research aim

The aim of this study is to gain insight in the role of evaluations in Dutch municipal cycling policies. The corresponding main question this research has attempted to answer therefore is as follows:

What role do evaluations and the knowledge gained from these evaluations play in the making of cycling policy in cities in The Netherlands and why?

This is done by an explorative analysis of the cycling policymaking process of two Dutch cities. To achieve said aim, this research has charted primary actors in the process, as well as formal and informal factors that contribute to the decisions policymakers make with regard

to cycling policy, by an inquiry into the influence of governance, institutional, and economic issues. Furthermore, in pursuing the aim of this research, this study regards to the process of policymaking as a cyclical process consisting of a number of stages, a policy cycle. The author is aware of the fact that the actual process of policymaking is of a more messy and unpredictable nature (Cairney, 2015). However, the notion of policy as a cyclical process is widely recognized as a suitable heuristic along which to structure policy analysis and was therefore deemed appropriate for this study as well (Jann & Wegrich, 2007).

Scientific relevance

Although much has been said on the topic of cycling and policy interventions, a large scientific hiatus remains in the matter of the policymaking process for cycling. In addition to the earlier statements on the shortcomings of policy evaluations, the scientific relevance of this study primarily lies in answering questions, as posed by Oldenziel et al. (2016), related to the use of, for instance, traffic counts and other data in cycling policy and the role of cyclists and their organizations in municipal cycling policies.

Data and methodology

The main source of data for this study are depth interviews. As part of a qualitative multiple case study approach, these interviews were held with officials representing various actors (14 in total) involved with bicycle policy in two cases: the Dutch cities of Breda and Groningen. At the core of these interviews was the role of the interviewees and the interviewees' organizations in the policymaking process and their considerations during this process. Other data was, as part of a triangulation approach, collected through desk research, which focused on the analysis of policy documents.

To further validate the results of the initial analysis, two respondent validation interviews were organized. Also, in order to determine the generalizability of the results, two more interviews were held with officials from two other cities, so that they could shed their light on the findings.

Results and discussion

Both cities are, apart from their dedication to cycling and population size, very different with regard to cycling policy. From the collected data, five factors of influence primarily stand out when it comes to decisions on cycling: (1) regional identity, (2) availability of funding, (3) regional developments, (4) interests and abilities of policymakers, and (5) time policymakers have available for cycling matters. Furthermore, it became apparent that the influence of actors other than the municipality is mainly limited to consultations. Financially contributing to

a project or intervention, however, drastically strengthens an actor's influence. Also, although the role and usage of evaluations in both cities significantly differs, the general image of evaluations in policy is that they could potentially be very useful, but that there are also various issues (incomplete, hard to attain) related to the data needed to perform proper evaluations. As a result, the role of evaluations in cycling policies is mainly limited to a more conceptual use: knowledge gained from evaluations seems to be mainly used to learn more general lessons, but not as a concrete base for future policy. Finally, it became clear that there are various attempts at improving both the quantity and the quality of data for cycling policy evaluations, but that knowledge and experiences on these initiatives are hardly ever shared amongst municipalities, other than on a regional scale.

By providing a rich, thick description of both cases, the author has attempted to maximize the potential transferability of the findings. As such, this research has been able to (1) confirm previously observed issues related to evaluating policy, (2) fill in some of the existing blanks on cycling policymaking, predominantly on the usage of data and the role of actors other than municipalities, and (3) has provided some interesting leads for further research.

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LIST OF ACRONYMS

Acronym	Dutch meaning	English meaning
CBS	Centraal Bureau voor de Statistiek	Netherlands Bureau of Statistics
SCP	Sociaal en Cultureel Planbureau	Netherlands Institute for Social Research
Rli	Raad voor de leefomgeving en infrastructuur	Council for the Environment and Infrastructure

LIST OF DUTCH TERMINOLOGIES

Dutch	English
Beter Benutten	Optimizing Use
Gemeente	Municipality
Provincie	Province
Regio	Region
Verkeerscirculatieplan	Traffic Circulation Plan

PREFACE

Though most of us don't even think about it, the question of why we, as Dutchmen, cycle as much as we do, is a very interesting issue. It wasn't until a couple of years ago, when I spent a semester in the United States – far away from my own bicycle – that I realized how unusual our cycling behavior actually is and that I started thinking about the reasons behind it. The answer turned out to be more complicated than I expected at first, further sparking my interest in the topic.

Now, almost three years and many distractions and changes of direction later, I am proud to say that I can now present to you my master thesis as my own contribution to the academic and professional knowledge on cycling and, more specifically, cycling policy. Also, it is the concluding piece of my masters in Urban and Regional Planning. It was an interesting ride, with many ups and downs, during which I got to meet many fun and interesting people, and also had many new experiences, most notably the fact that I was given the opportunity to present my thesis at the Scientists for Cycling Colloquium during the Velo-city conference 2017.

Obviously, I could not have written this thesis all by myself. Therefore I would like to take this opportunity to thank a number of people, without whom writing this thesis would not have been possible. First of all, I would like to thank all of my interviewees. Talking to all of you was a great experience and has given me many new insights that formed the foundation of this study. Second, I would like to say thank you to Peter Ache, my supervisor, whose critiques and suggestions helped guide my thesis to a higher level. Third, a big thank you goes out to all the people I met at Witteveen+Bos and especially to Sander Veenstra, who gave me the opportunity to get an inside look in and be part of the professional world of cycling mobility.

So, as a last take away, I hope that you will enjoy reading my thesis, as well as that it may teach you a thing or two about the intricacies of cycling and cycling policy.

Bram Lamberts

Nijmegen, June 2017

1 INTRODUCTION: THE RISE OF CYCLING POLICY

1.1 RESEARCH FRAMEWORK

Cities are getting more crowded across the globe. Urban populations are rising, putting a considerable strain on our urban transportation networks and severely affecting our possibilities for urban mobility. As of 2007 over half of the earth's population lives in cities (United Nations, 2014), and these percentages are expected to rise to approximately 70% by 2050 (Benevolo, Dameri, & D'Auria, 2016). Moreover, in 2014 67% of all kilometers travelled was travelled in urban areas and the total number of urban kilometers is expected to triple by 2050 (Lerner, 2011). Since many of these kilometers will be travelled using motorized vehicles, this prospect is confronting us with serious challenges in terms of both the environment, the city's livability and our economy. Infrastructure and parking space will soon be overloaded, leading to traffic jams and traffic chaos, and traffic safety will go down. The increase in air pollution and noise will lead to an ever bigger ecological footprint and in the end an overall decrease in our quality of life.

As a result of these poor outlooks, many cities across the world, and particularly in North America and Europe, are looking for new ways of organizing their urban mobility. At the center of attention for many policymakers is the use of the bicycle (Harms, Bertolini, & Te Brömmelstroet, 2014; Heinen, Van Wee, & Maat, 2010; Oldenziel & De la Bruhèze, 2016). Over the past few years, car use in western countries has been declining, whereas bicycle use has been on the rise. Policymakers are trying to utilize this trend, as cycling is often seen as a relatively simple constituent in the complexity of urban mobility problems that also contributes to solving environmental and health issues (Nijland & Van Wee, 2006; Oja, Vuori, & Paronen, 1998; World Health Organization, 2014). In addition to that, it is also considerably cheaper than traditional motorized modes of transport, both for the individual and for society as a whole, and has proven to be able to boost local economies (Blue, 2013).

This bicycle revolution in society, and amongst policymakers alike, is part of some greater trends that have occurred over the past decades (Pelzer, 2010). On the one hand there is the sustainability trend. Sustainable development has, to a considerable degree, been put to global attention through the 1987 Brundtland Commission report and policymakers and scholars have been trying to apply it to urban situations ever since (Goldman & Gorham, 2006; Meadowcroft, 2007). It has proven to be a lasting and popular concept, since, nearly three decades later, it is still prominently used in various policy directions, despite the application challenges it presents us with. On the other hand there is the growing interest for reshaping public space in the city (Raad voor de leefomgeving en

infrastructuur, 2014). This has created the opportunity for the bicycle to claim a more prominent place in the urban environment.

These trends and the consequently growing attention for cycling are not just taking place in traditional bicycle countries like The Netherlands, Denmark and Germany. Major cities like Paris, London and Madrid, and even cities in the US and Canada, are implementing more and more measures aimed at promoting cycling (Citylab, 2015; Harms et al., 2014; Heinen et al., 2010; Pelzer & Te Brömmelstroet, 2010). The output of these policies can be divided into two categories: *hardware* (infrastructure) and *software* (marketing and education) (Harms, Bertolini, & Te Brömmelstroet, 2016). *Hardware* refers to the provision and adaptation of physical infrastructure, both quantitatively (e.g. by building more cycle paths) and qualitatively (e.g. by segregating cycle paths from the roads). The input for these policies can be referred to as *orgware*: the institutional and organizational aspects of policy (Harms et al., 2016). *Orgware* consists of many elements, such as the way actors involved with cycling policy cooperate, their financial and organizational structure and the way goals are set, monitored and evaluated.

Ultimately, the policy input and outputs aim for certain policy outcomes: changes in, for instance, the number of cyclists or cycling safety. These outcomes may vary from place to place, even if the policy inputs and outputs were entirely the same. This shows that cycling policy is also susceptible to exogenous forces: the socio-spatial context in which it is implemented (Harms et al., 2016). This implies that the efficacy of policy measures to encourage cycling is also influenced by for instance demographic factors, such as the income, cultural values, or age of the population in a certain place, or spatial factors, such as the built environment and the climate (Harms et al., 2014; Heinen et al., 2010). A cycling policy measure that has proven to be very effective in one place, may therefore have a completely different effect, or none at all, in another. Consequently, for cycling policy to have maximum effect, it needs to be drafted keeping in mind the socio-spatial context in which it is being implemented. The socio-spatial context in that sense creates certain preconditions for the cycling policy to have the desired effect. In other words, the *orgware* and the selected *hardware* and *software* measures need to be tuned to the socio-spatial context that is being dealt with, in order for them to achieve the desired outcome (see Figure 1). For instance, changes within society as a result of social trends, such as the graying and (re)urbanization of the population and continuing immigration from non-western countries, have a profound impact on the way cycling policymakers need to do their work (Harms et al., 2014; Wegman, Zhang, & Dijkstra, 2012).

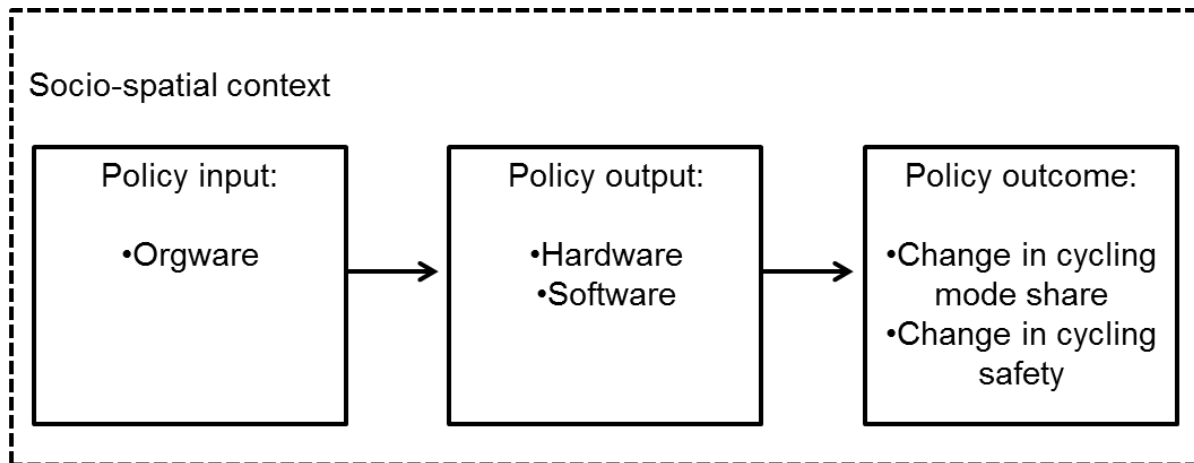


Figure 1: Policy input, output and outcome in the socio-spatial context (adapted from Harms et al., 2016).

When drafting cycling policy, or any kind of policy for that matter, the question policymakers need to answer is how to determine which outputs can produce which effects in a particular context. To successfully determine the effects of policy measures, one needs data on a wide variety of issues, such as bicycle use, demographics, and infrastructure, but also health figures and CO2 emissions. Monitoring changes over time on these matters therefore is key. As part of an evaluation process, changes, or a lack of changes, in the data can then be used to determine the effects of the policy measures and their effectiveness in achieving the goals of the policy as a whole. As such, evaluations form the input for new policies or for the adaptation or termination of existing policies (Jann & Wegrich, 2007). In theory that is. In practice, however, the evaluation of policy has traditionally been rather problematic. Academics have identified two main explanations for this. First of all, proper evaluation, meaning assessment that excludes external influences such as social or spatial factors, is often time consuming and expensive, as it often requires extensive or detailed data collection and analysis. Additionally, scholars have found the role of evaluations in the drafting of policy to be much less prominent in practice than it appears to be in policy theory, due to factors such as political influences and communication problems (Hertin et al., 2009; Weiss, 1999).

These same concerns also apply for cycling policy. Cities have been known to “fudge their numbers” (Oldenziel, 2016, p. 194), in order to sketch an image that is in accordance with their political needs. Moreover, bicycle related data collection is relatively limited, as opposed to, for instance, car related data, not to mention the difficulties encountered when trying to link data to policy targets. All of these issues related to data and the use of data present cycling policymakers with challenges that need to be overcome in order to be able to effectively evaluate their actions. Yet, to the author’s knowledge, no studies currently exist on the evaluation process of cycling policy. The fact that the evaluation of policy is not as black and white as it seems at first glance does not detract from the potential added value of

evaluation, but it does raise questions with regard to the current state of evaluation processes of cycling policy. Having a closer look at the how and why behind the evaluation process of cycling policy and the usage of these evaluations can therefore prove to be very valuable for future cycling policy.

1.2 RESEARCH AIM AND QUESTIONS

Even though the process of data collection is a debatable issue in itself (Oldenziel, 2016), the focus of this research will be on the evaluation process surrounding cycling policies and how the knowledge gained from these evaluations is utilized. As such, the purpose of this study is not to compare methods of data collection or methods of evaluation, but instead aims to explore why decisions to take certain courses of action were made. In order to provide a more inclusive base for future cycling policy, this study aims to close the previously portrayed knowledge gap that currently exists concerning the (utilization of) evaluation of cycling policy by policymakers and the way these evaluations are used.

Therefore, the research aim is expressed as follows:

To gain insight in the role of evaluations and evaluation knowledge in the policymaking process for cycling policy in cities in The Netherlands

To achieve this aim, the following research question was formulated:

What role do evaluations and the knowledge gained from these evaluations play in the making of cycling policy in cities in The Netherlands and why?

This question consists of multiple elements. Therefore a set of sub questions has been devised that will help to answer the question above in a careful and structured fashion:

1. What actors and factors influence the policymaking process regarding municipal cycling policies?

The process of policymaking can be influenced by many different factors, for instance by economic or social trends. The first objective therefore is to determine the actors and factors that play a role with regard to cycling policy.

2. How is evaluation conceptualized and what formal rules and goals are in place regarding the evaluation process of cycling policy in cities in The Netherlands?

The way actors involved with cycling policy look at the subject of evaluation may reveal their preferences and values on the subject. Also, this question aims to draw an image of the formal rules, laws, procedures and methods regarding cycling policy, for instance on the subject of data collection and monitoring. It seeks to outline the main reference points policymakers start from.

3. How does the process of cycling policy evaluation take place in practice and why?

This question aims to give insight in how the policy evaluation process takes place in practice. At the heart of this question lies a number of other questions: are evaluations actually executed and, if so, how and when are they executed and why are certain methods chosen over others? What data forms the basis for evaluation and why? By answering this question, possible discrepancies between the formal rules and the actual process, as well as institutional issues, influences, and practical problems in the process, will be uncovered.

4. How are the outcomes of the evaluations utilized and why?

The aim for this last question is to find out what the outcomes of cycling policy evaluation are actually used for and why. Again, the focus will be on the importance of formal rules and external and institutional influences in the decision making process.

1.3 RESEARCH MODEL

The research model provided below in Figure 2 presents the steps that will be taken in answering the questions outlined above in the previous paragraph.

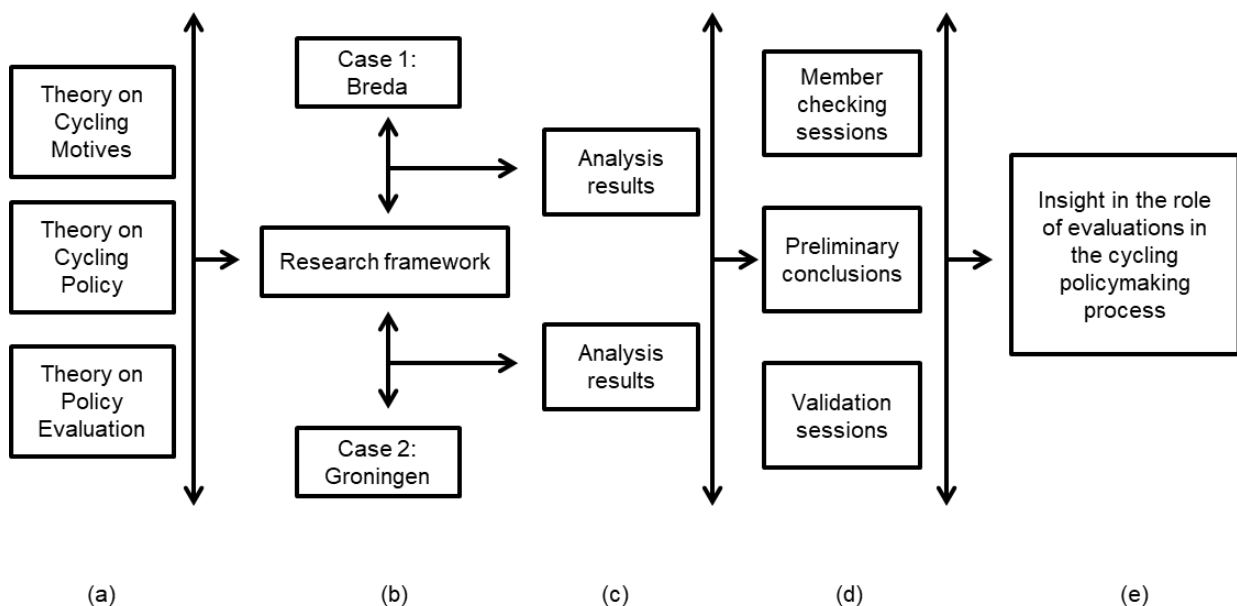


Figure 2: Research Model (Author's work, based on Verschuren & Doorewaard, 2015).

Through a critical review of existing literature on cycling motives, cycling policy and policy evaluation (a), a research framework, consisting of a conceptual model and operationalization, was constructed (for details see Chapter 2). This research framework was then used to systematically study the cycling policies of two cases, the cities of Breda and Groningen, and the development processes of their cycling policies, and in particular the role

of evaluations in this process (b). The empirical results from the cases were then analyzed using the conceptual framework and compared (c), which resulted in a number of preliminary conclusions. In order to further solidify the validity of the outcomes of this research, these preliminary conclusions were then checked on internal validity with officials from both Breda and Groningen through member checking and externally validated through officials from other cities. In these sessions, the officials shed their light on the first results (d). Finally, the conclusions based on the analyses of the first empirical data, combined with the views gathered during the validation sessions, were used to draw conclusions on the role of evaluations in cycling policy and the utilization of knowledge gained from these evaluations (e). More detailed information on the methodology of this study will be presented in Chapter 3.

1.4 SOCIETAL RELEVANCE

As highlighted before, the value cycling presents for society and the possible gains that an increase in bicycle mode share would entail, have been pointed out by numerous studies. Besides the fact that cycling is a cheaper form of transport than traditional motorized forms of transportation (Heinen et al., 2010) and can help boost local economies (Blue, 2013), it has been established that an increase in bicycling can help improve urban accessibility, leads to lower environmental pressure (Olde Kalter, 2007) and has positive effects on people's health (World Health Organization, 2014). In the light of cities that are becoming more and more crowded¹ every year, these are all valuable properties and many cities are acknowledging that by investing millions. Research by Pucher, Dill and Handy (2010) has shown that public policy plays a crucial role in the encouragement of cycling. A key element of policy is the evaluation process, but there is still much to learn and improve when it comes to the evaluation of cycling policy (Oldenziel, 2016). In unraveling this process, this study hopes to provide both policymakers and others working on cycling policy with leads for improvement.

1.5 SCIENTIFIC RELEVANCE

Scientifically speaking, the relevance of this study is twofold. First of all, this study hopes to expand on the rapidly growing body of literature focusing on cycling from a perspective that until now has received little to no attention amongst bicycle scholars (Harms et al., 2016; Oldenziel, 2016). Although the use of cycling in urban transportation has become a hot topic amongst scholars, their focus is relatively narrow, as many of them merely focus on concrete policy measures and their effects (e.g. Harms et al., 2016; Nijland & Van Wee, 2006; Pucher

¹ For instance: CROW, the Dutch platform for transport, infrastructure, and public space, recently released a statement warning that traffic pressure caused by cars in Dutch cities is most likely going to double within the next five years (CROW, 2016).

& Buehler, 2008), but neglect how the knowledge on the effects of these measures is acquired and used in practice. Through an examination of the evaluation process and the use of knowledge from evaluation in cycling policy, this study not only hopes to broaden this view, it also aims to contribute to theory on policy frameworks and policy evaluation, as empirical data will be gathered that can be weighed against existing beliefs.

1.6 THESIS OUTLINE

This thesis is structured as follows: In Chapter 2 the scientific underpinnings of this research will be outlined through a discussion of existing scholarly work on both bicycle policy, as well as policy evaluation. At the end of this chapter, the conceptual framework that was employed during this study is presented. Next, in Chapter 3, the methods employed during this study are presented. In Chapter 4 the empirical results of the research are outlined and in Chapter 5 a thorough discussion of these results and their implications is provided. Finally, in Chapter 6, a number of concluding remarks will be made along with recommendations for future research.

2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This chapter presents the theoretical underpinnings of this research. A critical review of academic literature is presented (Paragraph 2.1), which is then used to distill a conceptual framework (Paragraph 2.2).

2.1 CRITICAL REVIEW OF ACADEMIC LITERATURE

To systematically explain the workings of bicycle policy and the evaluation of policy, this paragraph is divided in three sections. Section one (Paragraph 2.1.1) will focus on why people cycle and as such gives an impression of the underlying theoretical assumptions of cycling policy. In doing so, it will cover two research paradigms that deal with reasons to (not) use bicycles: transport oriented literature and sociologically oriented literature. It will conclude with a short explanation for how cycling may flourish or fail in certain places, which is further illustrated by a short history of cycling in The Netherlands. Section two (Paragraph 2.1.2) will focus on studies dealing with the cycling policy process and is structured along the concepts of policy input, output and outcome. Moreover, it shows the linkages between research studying cycling motives and provides an overview of knowledge gaps in this field of study. Section three (Paragraph 2.1.3) will, focus on the process of policymaking, with special emphasis on evaluation. To that end, the concept of the policy cycle will be introduced, as well as a number of factors that are believed to be of importance in the process of policymaking. Finally, section four (Paragraph 2.1.4) will provide an account of literature focusing on factors that influence policymaking, by introducing the concepts of governance and institutions.

2.1.1 Why cycling flourishes or fails

Travel behavior is the outcome of spatial, social and individual opportunities and constraints (Van Acker, Van Wee, & Witlox, 2010). Numerous studies have been devoted to uncovering what these opportunities and constraints are and to what extent they have an impact. These studies can generally be divided into two research paradigms: transport oriented literature and sociologically oriented literature. Both these paradigms are outlined below and then used to further draw an image of the situation in The Netherlands.

2.1.1.1 *Transport oriented bicycle literature*

Traditionally, transport oriented bicycle literature tended to focus on the “hard” factors that influence the use of bicycles (Pelzer, 2012). These studies focused on the role geographical and physical properties play in the choice for a certain mode of transportation. More recently however, transport oriented scholars have also been examining the “soft” side of bicycling, meaning the socio-economic variables and the way those affect bicycle use.

Transport oriented bicycle literature is characterized by an often positivist epistemology and the use of quantitative methodologies (Pelzer, 2012). Most studies in this research paradigm therefore focus on pointing out variables that may somehow play a role in bicycle use and then use a statistical model to find relationships (e.g. Goetzke & Rave, 2011; Handy, Xing, & Buehler, 2010; Hunt & Abraham, 2007). Factors that are often found to have a major effect on the use of bicycles are for instance the quality and quantity of bicycle and car infrastructure, hilliness or employment situation (Heinen et al., 2010). For other factors, such as age or income, results from different studies often vary to quite some extent or are found to be very country specific, as is the case with gender (Heinen et al., 2010). The results of these studies are often used to make recommendations towards better policies for cycling (e.g. Pucher & Buehler, 2008). A widely accepted model in this strand of literature is the generalized costs model by Rietveld and Daniel (2004), which presents a number of individual features, as well as a multitude of costs for both cycling and other modes of transportation as the basic determinants of bicycle use.

What is most striking about the transport oriented bicycle literature however, is that an extensive literature review by Eva Heinen and her colleagues (2010) has shown that, despite the quite impressive body of literature that exists on this topic, there is still a lot of uncertainty towards the effects of many socio-economic factors and factors related to the built environment and the weather on bicycle use and frequency, due to the lack of an all-encompassing approach to bicycle research. Furthermore, there is reason to doubt the causality of the factors that are being studied (Van Acker et al., 2010). Is it really true that higher densities and mixed-use neighborhoods induce people to use a bicycle more often? Or do people who like to use a bicycle choose to live in places that are already better suited for the use of bicycles? As a result of questionable causalities like this, several authors have suggested that future research should also focus more on the effects of attitudes, social environments and cultural tradition in bicycle research (Heinen et al., 2010; Rietveld & Daniel, 2004).

2.1.1.2 Sociologically oriented bicycle literature

The other, more sociologically oriented strand of literature that focuses on cycling is mainly concerned with the position of the bicycle in society and therefore studies it as being a cultural phenomenon. As opposed to transport oriented scholars, these researchers regard to cycling as the result of social circumstances. As a result, the methodologies used in this kind of research is often qualitative and carried out through the use of participating observations, in-depth interviews and discourse analyses (Pelzer, 2012).

Many studies in this field either focus on how the bicycle can help produce and push other cultures and views of society or on how bicycle use can be the product of certain

cultures. Good examples of the first category are for instance a study by Horton (2006), who showed how the bicycle has helped push the environmentalism agenda and who stated that it “powerfully enables the articulation of an alternative society” (p.41) and (Blickstein, 2010) who examined how cycling can serve as a mode of protest towards the dominance of automobility. Examples of the latter category are in depth studies into differences in perception and the reasons behind those differences between different groups of people, based on for instance gender, ethnicity or class (e.g. Daley & Rissel, 2011; Steinbach, Green, Datta, & Edwards, 2011) or how certain cycling cultures, and the styles, tastes and standards that come with it, evolve as a result of historical and sociological aspects (Kuipers, 2010).

2.1.1.3 A complicated relationship

Neither of the two paradigms outlined above has been able to give universal explanations as to why cycling flourishes in some places and fails in others. In an effort to explain such differences, Ruth Oldenziel and her colleagues (2016) sketched five factors (urban landscape, transportation alternatives, policy, social movements, and culture) that all play a role in this, based on an extensive analysis of a number of cities throughout Europe. The aim of their effort was not necessarily to point out factors for success, but rather to show how cycling is a product of a complicated interplay of factors.

Let us consider the case of The Netherlands, nowadays a premier cycling country, to get a more concrete idea of this complicated relationship. The bicycle was introduced in The Netherlands in 1868 (Harms & Sociaal en Cultureel Planbureau, 2008). At first, the bicycle, or “velocipede” in those days, was merely a matter of recreation for the higher classes and it was not until the first decades of the twentieth century, when its popularity really started taking off. The first reason for this is, arguably, the most obvious one: bicycles became less expensive and, as a result, the number of people that could afford one increased. The danger with affordable products, however, is that, as can be observed in many other cultures, they may become a symbol of poverty. The bicycle could therefore have become a poor man’s vehicle. The reason it did not, lies, at least in part, in the Dutch cultural values (Kuipers, 2010). Due to the traditionally small distances between social classes in The Netherlands, higher classes were not in a position to show off their wealth and since the higher classes did not show off their wealth, neither did the lower classes feel the need to do so. In addition, the bicycle was also characteristic for the mainly protestant values in the country: the bicycle was cheap and sober and the driver needed a good work ethic if he were to go somewhere. Add to all this the fact that The Netherlands is a rather flat country and it is clear to see why the bicycle was so widely adopted (Kuipers, 2010; Pelzer, 2010). As such,

the initial popularity of the bicycle in The Netherlands can be explained through a combination of socio-economic and physical determinants, as well as cultural preferences.

The current relatively high percentage of trips made by bicycle in The Netherlands, as compared to other developed countries (Figure 3), is however also a product of good public policy. After World War II, when the car became affordable to the general public, bicycle mode share dropped severely all around the developed world and The Netherlands were no exception. It wasn't until the mid-1970s that the bicycle started to regain some of its former popularity, due to extensive public policy programs, instigated by social movements that started to question the car based transportation systems (Oldenziel, 2016). Without those policies, which were aimed at both facilitating bicycle use and discouraging car use, chances are the bicycle would not have become the widely-used transportation mode it is today (Ligtermoet, 2009; Pucher & Buehler, 2007, 2008).

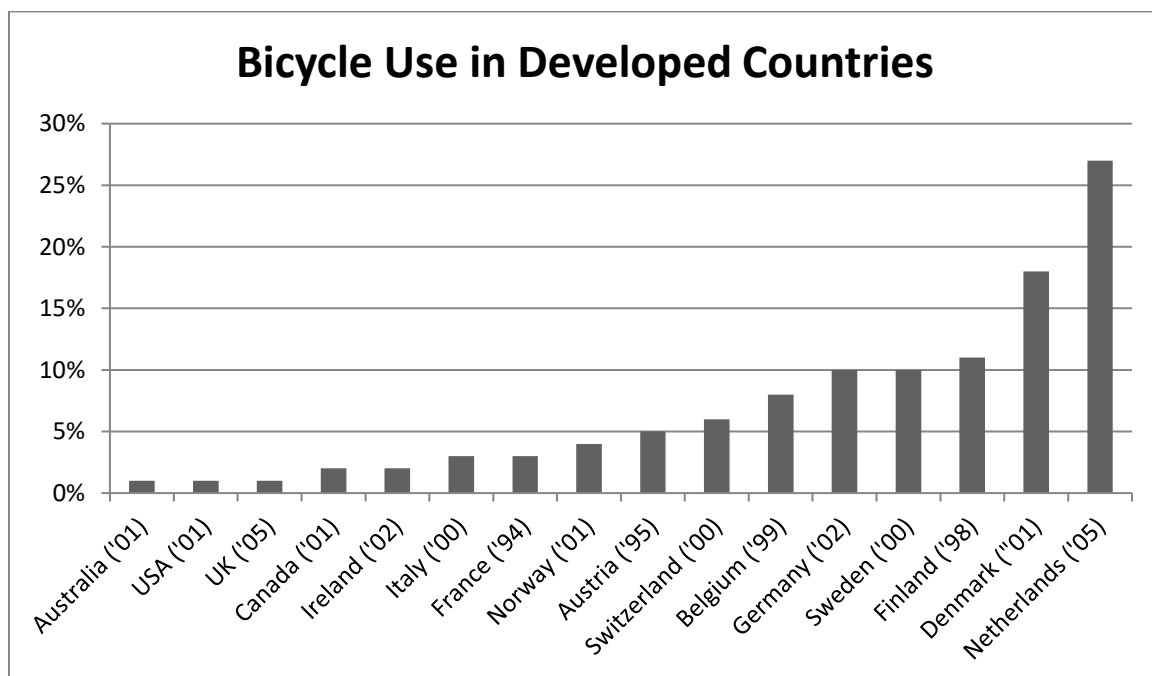


Figure 3: Percentage of trips made by bicycle in various developed countries (adapted from Pucher & Buehler, 2008).

2.1.2 Cycling policy

Now that the complications of defining the motivations to use the bicycle and cycling research have been introduced, we will shift our attention to the policies that aim to influence cycling behavior. Scholars studying cycling policy are mainly concerned with establishing effective policy measures, which alludes to a pursuit to come up with interventions that affect the factors that are believed to add to the usage of bicycles. As mentioned in the introduction, policy consists of inputs and outputs, which in turn lead to certain policy

outcomes (Harms et al., 2016). The following overview of cycling policy literature is structured along this partition, starting with the outcomes.

2.1.2.1 Policy outcomes

Policy outcomes give an indication whether a certain policy has been successful or not. Cycling policy can have a multitude of outcomes, such as changes in the number of people cycling (either relative or absolute) or changes in the number of accidents related to cycling, but also changes in economic activity, livability or congestion (Harms et al., 2016).

2.1.2.2 Policy output

To come to these policy outcomes, policymakers use a number of policy outputs. When taking a closer look at the outputs, one can identify two kinds (Harms et al., 2016):

- *Hardware* measures: the provision and adaptation of physical infrastructure, both quantitatively (e.g. by building more cycle paths) and qualitatively (e.g. by segregating cycle paths from the roads). The use of *hardware* measures is specifically aimed at increasing the attractiveness and opportunities for cycling;
- *Software* measures: the actions aimed at changing people's perceptions, beliefs and attitudes towards cycling (e.g. education or marketing campaigns). *Software* refers to the actions that specifically focus on changing people's perceptions, beliefs and attitudes towards cycling, in the hopes of motivating them to voluntarily make a change in their choice of transportation mode in favor of the bicycle. This is done for instance through marketing campaigns and educational programs

In this duality, the relationship between bicycle literature and bicycle policy is clearly visible. The theoretical link between physical and socio-economic variables and the associated travel behavior observed in transport oriented bicycle literature, corresponds one on one with the theoretical link between policy outputs and policy outcomes observed in bicycle policy.

As a result of this connection, the causality issues that have been distinguished in transport oriented literature, also appear in the relationship between policy outputs and outcomes: it is hard to tell what outcome a certain output has. To actually determine whether the used policy outputs have led to their desired outcomes, the (lack of) changes in the subject submitted to the policy is often used as an indicator for success (e.g. Harms et al., 2016). Many outcomes, such as changes in the number of people cycling or congestion levels, can easily be measured. Others, such as livability, are harder to measure, but still do not pose insurmountable difficulties. Either way, the problem regarding causality remains: the outcomes can be measured with relative ease, however the causes of these outcomes remain unclear (Krizek, Handy, & Forsyth, 2009; Olde Kalter, 2007). This is important, because there are many exogenous factors that affect the effectiveness of policy outputs and

therefore the outcome of policy. In other words, the socio-spatial context in which policy measures are implemented affects the effectiveness of these measures (Harms et al., 2016). For instance, one of the most commonly used, if not the most commonly used, indicators for the evaluation of cycling policy is the number of people using bicycles for transportation in a certain location (see Nijland & Van Wee, 2006; Van Goeverden & Godefrooij, 2010). Though an increase in this number may be an indicator that the policy has worked, the increase could just as well have been caused by, for instance, a demographic shift. Based on an exploration of differences and trends in cycling in The Netherlands, Harms, Bertolini and Te Brömmelstroet (2014) even suggest that the expected impact of cycling policies on the choice of transport mode in general may need to be lowered, in particular for Dutch cases, since their “analysis shows that changes in population size mainly explain changes in cycling volumes in rural areas (decreasing) and in urban areas (increasing)” (p.240).

2.1.2.3 Policy input

For the most part, literature dealing with cycling policy entirely focuses on policy outputs and policy outcomes and the relationship between the two (e.g. Pucher & Buehler, 2008; Van Goeverden & Godefrooij, 2010). In doing so, an important step in the process is often overlooked: the policy input. The policy input, also dubbed *orgware*, can be described as the institutional and organizational aspects of policy (Harms et al., 2016). As such, the policy input covers everything that has to do with the creation and development of policy before (e.g. problem analysis and decision making) and after (e.g. evaluation) the actual implementation.

By studying the policy input, one is basically digging into the question of why certain decisions were made during the policymaking process. In the context of mobility and transportation, this decision making process is often structured using the Rational Actor Model (RAM), which defines the individual decision making process as “a rational (or boundedly rational) process of weighing options and trade-offs to maximize positive outcomes and minimize negative outcomes” (Weber, 2014, p. 132). Transport policy decision-making is therefore often based on Cost-Benefit Analysis (CBA) (Handy, Van Wee, & Kroesen, 2014; Weber, 2014). Essentially, this means that decisions regarding the implementation of cycling policy measures, are taken using a rational, economic scope, only taking into account quantifiable costs and benefits of the measures to be taken. That scope indicates a positivist epistemology, in line with the epistemological beliefs of traditional transportation scholars.

Though less common, a more interpretivist approach towards transport policy has also shown to be valuable. Scholars with such an approach have given highly regarded contributions towards a better understanding of *orgware* and decision making in the

policymaking process, expanding the scope from plain quantitative considerations on policy measures by also taking into account institutional and human factors. As such, these researchers have expanded the discussion on policy input by taking into account the importance of socio-spatial and other external factors. Through an examination of policy changes in the German city of Freiburg, urban planning professors Ralph Buehler and John Pucher (2011), for instance, identified a number of focal points for policymakers attempting to implement sustainable transport policies. Instead of studying the actual measures the city of Freiburg took, they focused on how and why these measures were implemented, resulting in seven general lessons on how to successfully implement new or possibly controversial sustainable transportation policies that could easily be adapted by other cities: (1) controversial policies are best implemented in stages, (2) plans should be flexible and adaptable over time, (3) policies must be multi-modal and include both incentives and disincentives, (4) land-use and transportation planning must be fully integrated, (5) citizens must be involved in all stages of the policymaking, (6) consent from higher levels of government is crucial to making the local policies successful, and (7) the focus and implementation of the policies must be longitudinal in order to gain sustained effects. As such, these lessons do not provide the reader with concrete recommendations on policy interventions, but the interpretivist approach did provide a way to gain valuable insight in how the case under study, in this case Freiburg, managed to take steps that others have not been able to take yet.

2.1.3 The policy cycle

As can be deduced from the above, the literature specifically focusing on analyzing the input for cycling policy is limited. Public policy has however been extensively studied as a separate field of study. The first point of attention in this paragraph therefore is the process of policymaking, which will be discussed by the introduction of the policy cycle, a widely used concept to analyze policy. In doing so, the role of evaluation within the policy cycle and its relative importance in everyday policymaking will be further elaborated upon. To that end, this paragraph will conclude with a further analysis of factors that influence the input for policy.

The policy cycle serves as one of the most influential frameworks in the field of policy analysis. Consisting of several stages that cyclically succeed one another, it has helped policymakers and scholars alike, to systematically structure and study the process of policymaking. Since the emergence of policy analysis as a field of study in the 1950's, policy processes have often been observed as being a series of stages or phases (Jann & Wegrich, 2007). This idea was first put forward by political scientist Harold Lasswell, who identified a linear model of seven stages within the policy process: intelligence, promotion, prescription,

invocation, application, termination, and appraisal. Although the differentiation and sequence of the stages has often been debated, the idea of analyzing the policy process using a framework consisting of separate stages served as an inspiration for many other scholars to develop stages of their own. The most commonly used stages today are agenda-setting, policy formulation, decision making, implementation, evaluation, and (potentially) termination (Jann & Wegrich, 2007).

A repeatedly expressed point of criticism relating to Lasswell's model concerns the fact that it is linear. Since policymaking was considered to be a continuous, cyclical process, the model was therefore updated using political scientist David Easton's input-output model (Jann & Wegrich, 2007). The input-output model describes the policymaking process as "a black box between political input (demands of and support from citizens) and political outputs (laws, programs and such)" (Heinelt, 2007, p. 109). These outputs then again form the basis for new policy inputs (Grin & Loeber, 2007). By the unification of the cyclical input-output model and Laswell's linear sequence of stages, the policy cycle was born. Since then, it has become one of the most widely adopted frameworks to analyze policy (Jann & Wegrich, 2007; Maas, Kruitwagen, & Van Gerwen, 2012).

The image the policy cycle sketches of the process of policymaking, is very organized. Just like any other model, it is merely a simplification of reality (Jann & Wegrich, 2007). It presents policymaking as being structured in one big feedback loop, with separate stages that neatly succeed one another. In practice however, the policymaking process is not even close to being neatly organized. Policymaking is a constant process of feedback loops between deeply intertwined processes (Hertin et al., 2009; Maas et al., 2012; Pülzl & Treib, 2007). Even though policymakers and scholars studying policy are aware of these limitations, the policy cycle is still regularly used (Cairney, 2015; Jann & Wegrich, 2007; Maas et al., 2012). Its continued popularity, and also the reason it will be utilized in this study, is mainly due to its utility as a heuristic to gain more insight in the process of the policymaking process. Additionally, it provides a framework to structure the enormous amounts of literature that exist on policy. In using the policy cycle as a framework for research, one however needs to keep in mind that it is merely a framework, that does not offer any causal explanations as to why policy decisions are made.

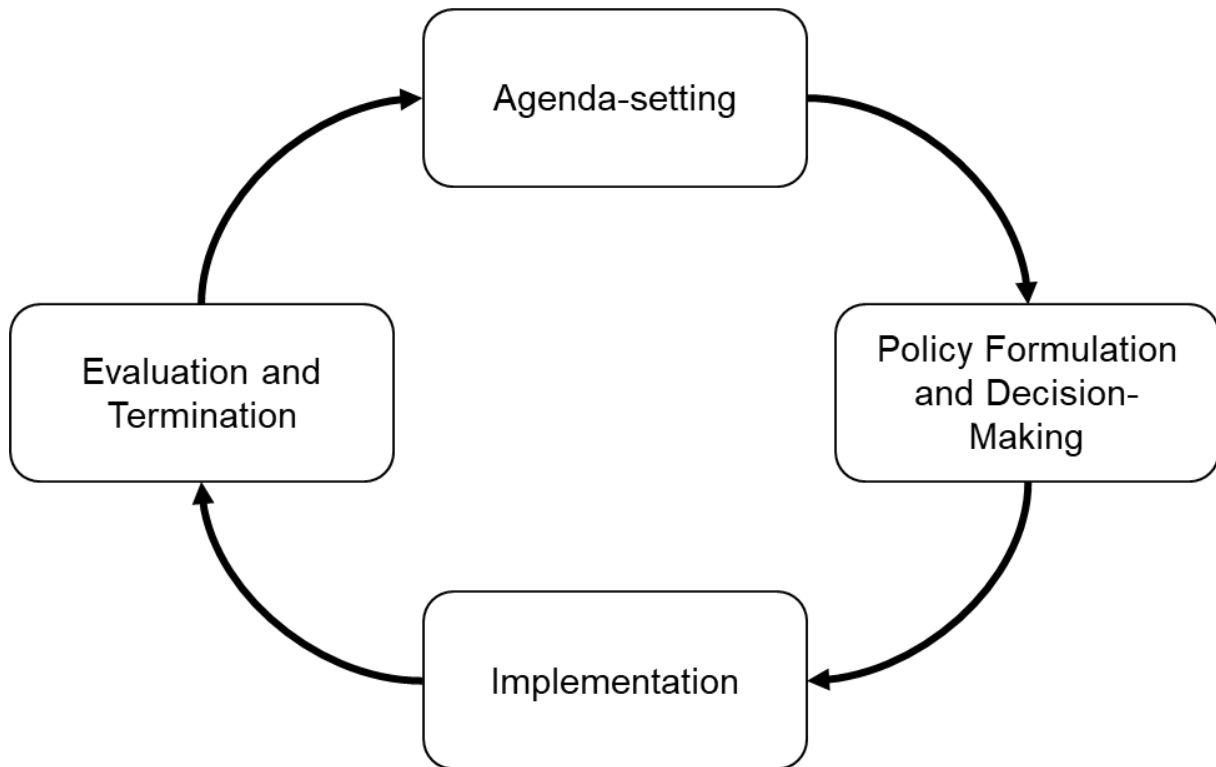


Figure 4: The policy cycle (based on Jann & Wegrich, 2007).

It consists of four steps during which actors and stakeholders interact with one another: agenda-setting, policy formulation and decision-making, implementation, and evaluation and termination² (

Figure 4) (Jann & Wegrich, 2007). The following paragraphs will give a more profound illustration of the four steps.

Agenda-setting involves problem recognition and issue selection. For an issue to become part of the policy agenda, it first needs to be acknowledged as a problem and, second, it needs to be selected as an issue worth solving by both the public and by policymakers (Hoogerwerf, 2008). Agenda-setting is dependent on a number of factors: the interests of relevant actors, the leadership capabilities of the institutions in charge, the public perception of problems and solutions, and the material conditions of the policy environment (e.g. the level of economic development). An agenda is therefore not just a list of items that need to be dealt with. It is filled with beliefs, perceptions, opinions and interests of governments, private organizations and other actors (Birkland, 2007).

Once an issue has been put on the agenda, the subsequent step of policy formulation and decision-making begins. Issues that have been put on the agenda are now transformed into actual programs (Hoogerwerf, 2008; Jann & Wegrich, 2007). These

² Note: Though the evaluation and termination phase is mentioned last here, it is not necessarily the last phase in practice, as the policy cycle essentially never ends.

programs are mainly based on decisions made in the agenda-setting phase, but are also partly shaped by self-regulation of policymakers on lower levels and the framework they are allowed to act in. This stage can be sub-divided in two steps (Sidney, 2007). First, a number of alternatives to solve the stated problem is devised. Then, second, a decision is made as to what the best solution would be. More concrete this means that an actual policy goal is formulated and an approach to reach that goal. Once again this involves weighing the interests of all parties involved and the costs and benefits, both financially and socially, that are related to the policy.

After the policy has been formulated and decided upon, the implementation starts. This is the actual execution of the policy and therefore encompasses matters such as distribution of tasks and funds among actors and decisions regarding single cases (Hoogerwerf, 2008; Jann & Wegrich, 2007). Just like the initial policy framework research, the earliest works of policy implementation research back in the 1970s had a clear top-down perspective. As this field of study developed, this perspective was increasingly being challenged by empirical evidence showing how decisions were never executed one on one with the way they were intended. These insights triggered the abandonment of strictly top-down hierarchical perspectives in policy research and prompted new perspectives acknowledging the constant influence of implementation agencies, societal and institutional factors and intricate linkages and networks between all actors involved, on the final outcome of the policy (Pülzl & Treib, 2007).

The last phase is the evaluation and termination phase. This phase centers around the outcomes of the policy measures and reflects them against the intended goals. During this phase the aim is to assess the effectiveness of the policy and then, depending on the level of satisfaction of the assessment, to decide whether to continue in the same direction or to adapt or terminate the policy (Bressers, 2008; Jann & Wegrich, 2007; Weiss, 1999).

From this rational instrumental view of policymaking and policy evaluations, evaluation seems to be an objective and straightforward process: it assumes that effects are measured and weighed and that decisions are then taken accordingly. A wide variety of studies has however shown that evaluations are rarely used as the actual basis for policy decisions (Hertin et al., 2009; Owens, Rayner, & Bina, 2004). The coupling between problems and policies has been found to be far looser in practice than it is expected to be in theory, as a result of for instance miscommunications or shortcomings in the documentations of the evaluation. Also, evaluations and the way they are utilized are often biased according to the interests of actors involved (Bressers, 2008; Hertin et al., 2009; Jann & Wegrich, 2007; Owens et al., 2004; Sabatier, 2007; Weiss, 1999). This last notion gives reason to question the ability of organizations to evaluate their own policies, as results that are not in line with

the organization's interest may be avoided or, more likely, be manipulated in order to rationalize policy decisions that have been made for other reasons (Owens et al., 2004). Other problems with the use of evaluations often occur due to a lack of data, for instance on the relationship between predetermined goals and policy interventions, or to a lack of knowledge on how to effectively employ the data that is available (Bressers, 2008).

Because of the reasons outlined above, evaluations and the knowledge gained from them are generally used in one, or sometimes more, of three major ways:

- **Instrumental learning:** In case evaluations lead to instrumental learning, the evaluation outcomes are treated as direct input for future policies (Hertin et al., 2009). The knowledge obtained from the evaluations has in this case provided enough insight into the mechanisms of policy components and the policy design for policymakers to either make concrete changes and improvements or to terminate the policy in question. Evaluations that are used for instrumental learning are called formative evaluations (Bressers, 2008);
- **Conceptual learning:** In the event that outcomes of evaluations lead to new information, ideas, and perspectives amongst policy and decision makers, this is called conceptual learning (Hertin et al., 2009). The knowledge gained through the evaluation debunks old assumptions and leads to new ways of framing problems and solutions. Weiss (1999) refers to this as a process of “enlightenment” (p.471). The evaluation knowledge is not necessarily used as direct input for future policies, but serves as a source of inspiration;
- **Political use:** Last but certainly not least, evaluations also tend to be used for political purposes. For instance, to criticize or praise a certain course of action (Hertin et al., 2009). When this is the case, the evaluation is called a summative evaluation (Bressers, 2008). As the outcome of such an evaluation can have severe political consequences, it is very important to choose an appropriate fashion of evaluation, as the evaluation method can significantly affect the evaluation outcomes. With the possibility of having to take the blame for failed policy in mind, policymakers sometimes tend to come up with poorly defined policy goals, severely affecting the objectivity of the evaluation process (Jann & Wegrich, 2007).

2.1.4 Influencing policy: governance and institutions

Now that a basic framework for policy analysis has been introduced, we need to take a closer look at how decisions are made within this framework. As was determined in the last paragraph, the policy cycle is more than just a rational cycle of inputs and outputs. There are many internal and external influences that affect its course. Why do cities aim for certain

policies? What is their rationale? Who influences it? What do they want to achieve as a community? That being said, it is time to have a look at two important concepts that have gained more and more attention in scholarly circles since the end of the 20th and beginning of the 21st century and that inevitably play a role in city planning and policy: institutions and governance.

First of all, institutions. Like most social activities, planning policy takes place in an institutional environment (Alexander, 2006). As such, decisions made during the policy cycle are made in accordance with certain institutions. These “patterns of social rules” (Dembski & Salet, 2010, p. 615) guide and structure the way people and organizations act. More concrete, institutions can be defined as a set of “rules, procedures, and organizational structures that will enable and constrain behavior and action” (Alexander, 2006, p. 4). Institutions may be formal or informal, as also becomes clear from a definition by González and Healey (2005, p. 2058), who define institutions as “the frameworks of norms, rules and practices which structure action in social contexts, [...] expressed in formal rules and structures, but also in informal norms and practices, in the rhythms and routines of daily life”. Formal institutions therefore consist of laws, rules, and regulations, as well as budgets and official hierarchies, whereas informal institutions are of a less tacit nature, such as culture, norms, values, practices, customs, and traditions (Marsden & May, 2006). Together, they form the playing field of what reasonably can and cannot be done during the policy process. As such, formal and informal institutions determine what is normal to do in a certain setting and what is not; they form the basis for behavior. It is however important to note here that institutions are not necessarily the same everywhere; they differ from place to place. The value actors attach to a matter, say, the local economy, may for instance be affected by the leading political arrangements there (Stone, 2004). Consequently, what is normal in one place, could be horribly out of line in another.

Institutions are however not definitive; they change over time (Alexander, 2006; Buitelaar, Lagendijk, & Jacobs, 2007; González & Healey, 2005). This may happen either naturally or deliberately³. In case of the former, institutions change gradually and habitually. This is what Alexander (2006) calls institutionalization. In case of the latter, it is called institutional design: “intentional institutional transformation to achieve significant social change” (Alexander, 2006, p. 2). Many problems that cities nowadays face, heavily relate to

³ Whether policy makers actually have the ability to induce institutional change, is still a topic of debate among scholars. Whereas some authors (e.g. Bromley, 1991) claim institutions are highly manipulable, others say changing institutions is a purely natural and organic process. This belief is based on ideas put forward by for instance Webster and Lai (2003) that the efficiency of ‘the market’ will leave no room for policy-makers and planners to be able to systematically intervene in the changing of institutions. This study however follows the stances as taken by, amongst others, Alexander (2006) and Buitelaar, Lagendijk and Jacobs (2007), who have a more synthesizing view.

a need for institutional change. It is up to policymakers and city planners to try and design this change.

An important part of designing such change, is aligning the wants and needs of all the actors and stakeholders involved. As different people may have different opinions, due to differing beliefs, values, and views, they may also differ on what should and should not be considered to be a problem as well. As a result, one of the most important tasks for planners and policymakers is guiding the planning and implementation processes (Alexander, 2006). In that occupation they are to form networks of relevant actors and change and create plans and ideas, essentially designing a productive institutional environment. Although politicians ultimately remain the legal decision-makers in these situations, it is the policymakers who are in charge of and most significant during the process, due to their expertise. From this position, policymakers often attempt to take an objective stance. One way policymakers, for instance, try to overcome disparities among actors is by creating an as clear and objective picture of the issue at stake as possible. However, painting an objective picture may just be next to impossible, as even data collection and analyses can be influenced by assumptions or reframed in case of, for instance, hiatuses in the data or ambiguities on causalities, especially when stakes are high (Maas et al., 2012). Particularly in land-use related issues, costs and benefits are distributed unequally, let alone the capacity to monitor them (Stone, 2004). This once again stresses the difficulty and importance of the ability to manage cooperation between different objectives from multiple actors.

With that notion we have arrived on the topic of governance and the importance of coordinating actors. Who gets to decide on what is or is not a problem and on what kind of policy is most appropriate to tackle it, is a matter of governance. The term governance is not unambiguous, as it may be used in reference to a shift in government arrangements, as well as in a more general and descriptive manner (Alexander, 2006; González & Healey, 2005). In the former case, the term governance is often coined to describe the move from very state-led economies with a classical, hierarchical, top-down approach towards policy (government) (Alexander, 2006; Jann & Wegrich, 2007), toward economies that allow for more influence from 'the market' and civil society (governance). The shift in focus from government to governance came about in the late 1980s, when scholars started to become more interested in the interaction between the state and civil society, as opposed to mere state centered endeavors (González & Healey, 2005; Jann & Wegrich, 2007). Since then the organization and coordination of policy in the form of networks between both public and private actors has not only become the most common way of analyzing policymaking, but also the normatively superior one. In its more general, descriptive sense, governance can therefore be described as the process of "creating the conditions for ordered rule and

collective action” (Stoker, 1998, p. 17), essentially signifying the way in which different actors work together (Meadowcroft, 2007). As such, it refers to “the sectors and actors involved in the processes of regulation, coordination, and control [...] that enable or constrain the actions of members of a society” (Alexander, 2006, p. 9-10).

Especially since the beginning of the 21st century, urban governance involves many different actors with a variety of different backgrounds (Maas et al., 2012; MacLeod, 2011; Meadowcroft, 2007). This has led to a situation in which many different actors try to influence the course of action to their liking. In modern society, where power and resources have been divided so much that even governments are no longer capable of acting on their own, there is therefore always a need to find some sort of consensus or acceptance among actors and stakeholders in society (Meadowcroft, 2007). Even when actors agree on a common purpose, they may still have different rationales to do so, further complicating the policy process (Stone, 2004). This is why scholars attach great importance to the governance and coordination of such developments and the capacity of one or more actors to take charge in this. Such coordination requires management of intricate interorganizational networks and networks within organizations themselves (Alexander, 2006). The actor within the policy network burdened with this coordinating role in the policymaking process, will have a certain restricted maneuvering space (Coolsmas, 2008). This space, also called discretion, is dependent on the amount of authority an actor has, based upon both laws and procedures, as well as values and beliefs held by other actors. Despite the shift from government to governance, local government officials still fulfill this leading role most often when it comes to issues such as urban sustainable development or urban transportation. Steering for certain outcomes requires a certain set of skills. It is this set of skills, combined with the predominant formal and informal institutions, that defines what will and will not be able to happen (González & Healey, 2005).

2.2 CONCEPTUAL FRAMEWORK

In the foregoing paragraphs an overview of scholarly work related to the central themes of this thesis was given. From this overview a number of central concepts has been distilled, which will now be combined to form a synthesizing conceptual framework that will form the basis for the empirical stage of this study and for the subsequent data analysis.

First of all, a review of current effort related to cycling and cycling policy was provided. In doing so, we have uncovered the limitations of existing knowledge on the topic and provided a basis and further relevance for this study.

Second, the policy cycle was introduced as a heuristic tool to dig deeper into cycling policy. As such, the evaluation process, consisting of agenda-setting, decision making,

implementation and evaluation, the central theme of this study, have all been defined. The policy cycle is represented by the box marked as “Policymaking” in the conceptual model presented in Figure 5. Developments in the policymaking process affect the way the outcomes of the evaluation are going to be used. However, the way in which the evaluation knowledge is used, also affects the evaluation process itself, as intentions to use them in a certain way may affect, for instance, decisions related to data collection.

Third, we have introduced how the process of policymaking is influenced. These influences from outside the actual policy cycle are represented by the boxes marked as ‘Governance’ and ‘Institutions’. As mentioned before, formal and informal institutions lead to a situation in which both the policymaking process, as well as the utilization of the evaluation knowledge, are influenced so that they are in accordance with those institutions. Also, in line with the constructionist stance taken in this research, the assumption here is that different actors involved with an issue, will have differing views on that issue and, consequently, will have different perceptions of the appropriate way to handle it. Since policymaking involves many different actors, governance is therefore of influence as well. The constellation of actors that are part of the policymaking process, and the way they interact with one another therefore may also change the position of evaluation and the knowledge derived from it in the greater process, as was explained in the previous paragraph.

The above is summarized in the conceptual framework presented in Figure 5. It will be further operationalized in Chapter 3 and as such serve as the basis for the next step in this research: data collection. The methods employed for this, as well as the methods for data analysis, will also be introduced in the next chapter.

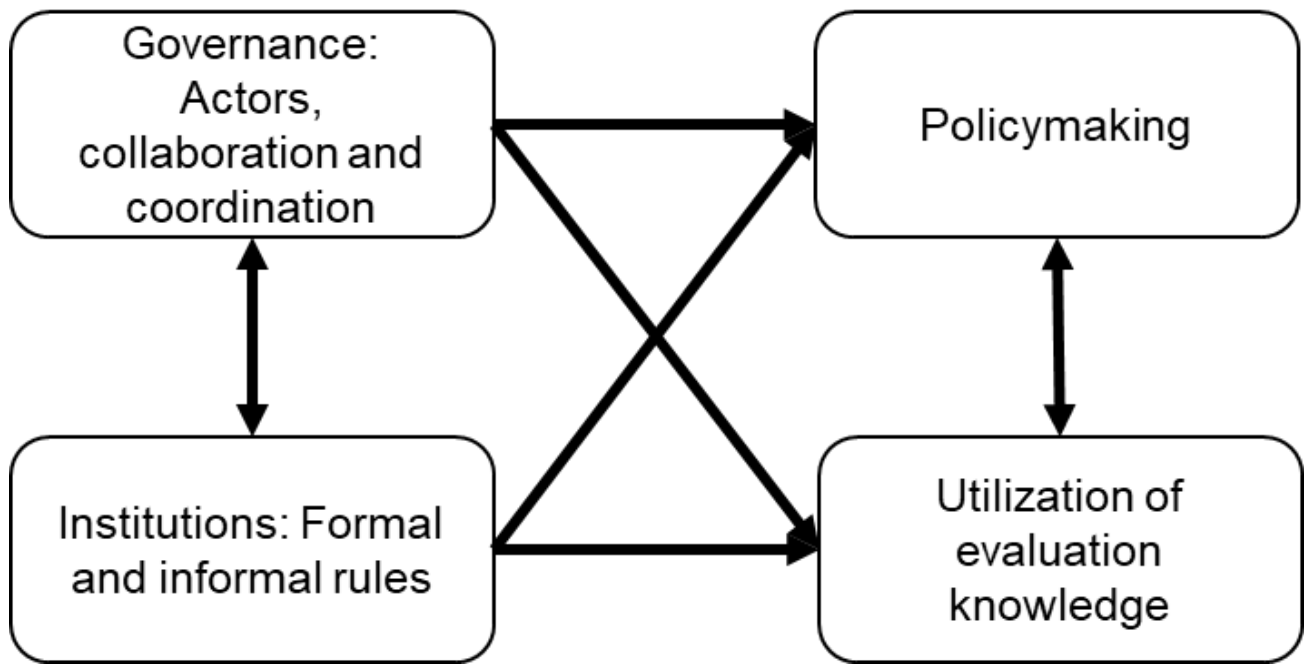


Figure 5: Conceptual framework (Author's work).

3 RESEARCH METHODOLOGY

In this chapter, the methods employed in this research will be presented. First of all, the underlying research philosophy of this study is outlined. Second, the research strategy that was used will be explained; the qualitative, multiple case study. Third, data collection methods are introduced and, fourth, the strategy to analyze the acquired data is discussed. The chapter will then conclude by outlining the limitations in the choices outlined before and discuss how these were overcome.

3.1 RESEARCH PHILOSOPHY

The primary aim of research is to develop new knowledge. What is considered to be knowledge and what is not, is however dependent on the philosophical underpinnings of the research (Guba & Lincoln, 1994; Saunders, Lewis, & Thornhill, 2009). As such, research philosophy forms the basis for any decisions regarding the employed research methods and strategies and a clear statement towards it helps potential reviewers to understand why certain decisions were made (Creswell, 2013). Also, a coherent account of a researcher's philosophy and preferences assists in elucidating the researcher's biases (Miles & Huberman, 1994).

To determine one's philosophical standpoints, one's ontological (what is the nature of reality?) and epistemological (what counts as knowledge and how are knowledge claims justified?) beliefs need to be defined. Since this research focuses on views and perceptions of various actors involved with cycling policy, the ontological position taken here, is of a constructivist nature. The constructivist approach assumes realities to be "*apprehendable in the form of multiple, intangible mental constructions [...] and dependent for their form and content on the individual persons or groups holding the constructions*" (Guba & Lincoln, 1994, p. 110). As a result, knowledge "*consists of those constructions about which there is relative consensus (or at least some movement toward consensus) among those competent [...] to interpret the substance of the construction*" (Guba & Lincoln, 1994, p. 113). Epistemologically speaking this means that an approach is needed that would allow for these constructions to be studied. To that end, an interpretive position is the way to go here. Interpretive research focuses on words, both written and spoken, and the meanings behind those words (Yanow, 2007). As such, it is aimed at uncovering how those subjective meanings form the basis for human decision making and motivations (Sadovnik, 2007; Saunders et al., 2009).

3.2 RESEARCH STRATEGY

Following the ontological and epistemological choices made before, a qualitative research approach is the logical consequence. This also suits the aim of this research, given that according to Vennix (2011) a qualitative study is the most favorable option when examining processes. Qualitative research can be defined in many ways, but in essence it boils down to studying the meaning individuals or groups ascribe to certain matters or issues in their natural settings, in an observational and communicative fashion (Creswell, 2013; Sadovnik, 2007; Vennix, 2011). As opposed to a quantitative approach, which is mainly concerned with finding evidence to confirm or disprove hypotheses based on quantifiable data, the qualitative approach allows one to study the influences of different actors and circumstances on a subject, through an account of the beliefs and visions of the research object. Moreover, it provides the researcher with the possibility to draw a complex and inclusive image of the issue at hand. As such, the qualitative approach is most instrumental towards fulfilling the previously stated goals of this study, as it provides the best possibilities to examine the process of cycling policy, as experienced by policymakers and other actors involved in this process.

As the policy-making process for cycling policy has, to the author's knowledge, not been studied before, this research has an explorative character. As such, it will primarily produce hypotheses that may be studied more closely in future research, rather than assess a matured conceptual framework. However, as policy research per se is undeniably not a new phenomenon, the research will not be entirely inductive, as it is built upon earlier efforts analyzing other fields of policy.

The strategy selected for this research is the multiple case study: the exploration of multiple real-life, contemporary bounded systems (cases) over time through detailed, in-depth data collection, with the aim to, at least in part, shed light on a larger number of cases (Creswell, 2013; Gerring, 2009). The use of case studies, and multiple case studies in particular, has a number of advantages (Creswell, 2013; Saunders et al., 2009; Vennix, 2011; Verschuren, 2003; Verschuren & Doorewaard, 2015). First of all, case studies in general are particularly suitable to answer questions of why and how. Second, they provide the opportunity to study an issue in its natural context and gain a deep and integral insight. Multiple cases have been selected with the aim of comparing the analyses of the individual cases to improve the external validity of the research, enabling the author to draw more generalizable conclusions (more on this in Paragraph 5.4). As this study seeks to get an in-depth look at the how and why behind the evaluation process of cycling policy and the utilization of the knowledge gained from these evaluations, the multiple case study design was found to be the most appropriate research strategy. It was determined that the unit of

analysis in each case would have to be a city, since over the past century or so most cycling policies have been formulated at city level (Oldenziel, 2016). During the case selection process, the decision was made to pick two cases. This was done after weighing the importance of the generalizability and profundity of the results, as a larger number of cases would lead to more generalizable results, but limit the extent to which each case could be studied in-depth (Creswell, 2013). Also, since the research performed here was rather explorative in character, it was deemed more interesting to form a clear image of a limited number of cases first.

The selected cases are the cities of Groningen and Breda. Both cases are Dutch, because The Netherlands are widely renowned for its system of transportation, have an extensive history of cycling, and are also regarded to as the origin of cycling policy (Pelzer & Te Brömmelstroet, 2010). The Netherlands have a remarkably high cycling mode share, which is also the main reason they are regarded to as a leading cycling country (Oldenziel & De la Bruhèze, 2016). The assumption therefore is that the Dutch process of cycling policymaking has matured more, as compared to other countries, making it the most suitable for an in-depth analysis.

The selected cases were picked by means of purposeful sampling. As opposed to quantitative studies, where cases are often randomly selected, purposeful sampling is a widely used case selection method in qualitative research (Gerring, 2009; Miles & Huberman, 1994; Palinkas et al., 2015). It involves the selection of cases based on the presence and availability of relevant information. As such, it comprises the identification of possible cases and the extent to which each of those cases holds significant knowledge or experience on the topic being studied. The main advantage of purposeful sampling is that it allows researchers to select information-rich cases that are most instrumental towards achieving the aims of the research. This is particularly useful for case studies, which by definition have a small sample size (Gerring, 2009).

An initial list of potential cases was constructed through extensive desk research. The desk research focused on travel data (Appendix 1 – Traffic data), policy documents - containing information on cycling, infrastructure and mobility policies of numerous cities in The Netherlands - and reports by the Fietzersbond (the Dutch Cyclists' Union). Based on the information gained from the desk research, the following criteria were then used to select the cases:

1. A clear articulation that the city wants to promote cycling;
2. A difference in modal share for cycling and cycling history between the cases;
3. A difference in strategy regarding cycling policy between the cases;

4. A difference in attitude towards data collection and evaluation between the cases;
5. Medium size: approximately 200.000 inhabitants.

The first criterion was used as a base criterion, to make sure the selected cases would have a certain standard of ambition with regard to cycling. The three criteria involving differences between the two cities (criterion 2, 3 and 4) were used with the aim of acquiring variation in circumstances that could play a role in cycling policy, as part of the purposeful sampling approach. The fifth criterion was used to make sure cities were selected in which cycling would be a viable transportation option. This criterion was based on research by Ruth Oldenziel and her colleagues (2016), who argue that the urban landscape and the availability of transportation alternatives have a considerable impact on the viability of cycling. The selected city size was deemed most appropriate, as cities of such a proportion are considered to be ideal for transportation by bicycle.

A more extensive description of the cases will be provided in Paragraph 4.1.1 and Paragraph 4.2.1.

3.3 RESEARCH METHODS AND DATA COLLECTION

The main source of data for this research are in depth interviews. These interviews were conducted amongst a total of 14 people (7 in both cases), representing 12 organizations during 13 interviews. All of the interviewees were to some extent involved with bicycle policy in one of the selected cities. An overview of interviewees, their occupations and their relevance for this study is provided in Appendix 2 – Overview of interviewees. The interviewees were amassed using a snowballing approach. First of all, the main actors were identified through desk research and interviews were arranged with representatives from those actors. Then, during the interviews, the interviewees were asked to name other actors that they perceived to be of importance, after which interviews were arranged with representatives from those actors too. This sequence was repeated until no new names were suggested as important enough to be interviewed. An overview of the main actors and the relationships between them is given for both cases in Paragraph 4.1.4 (Breda) and Paragraph 4.2.4 (Groningen).

At the core of the interviews was the cycling policy process in the case in question and the role of the respective interviewees and their organizations within this process. The focal points of the interviews were the pursuits of the organizations the interviewees represented with regard to cycling and the interviewees' roles in these pursuits, and cycling policy in general with a special focus on the evaluation of policy and the utilization of the outcomes of such evaluations. The structure of the interviews was based on the leading research questions of this study and the theoretical concepts presented in the conceptual

framework. A schematic representation of the operationalization of the research is provided in Figure 6. Through this diagram, one can clearly deduce what information is needed to answer the main question: general information on the cases and answers to the four research questions. Also, it becomes clear how the concepts used in the conceptual model align with those questions and how these were finally integrated into the interview guide. A more detailed overview of the operationalization of the research, including all of the questions in the interview guide (translated to English), can be found in Appendix 3 – Operationalization. The original Dutch interview guide used in the interviews is provided in Appendix 4 – Interview protocol (Dutch).

To strengthen the internal validity of the results, other data was collected through desk research, which mainly focused on policy documents, as part of a triangulation approach. In addition, a meeting with a respondent who had been interviewed before was organized for both cases to verify the preliminary results in a so-called respondent validation approach, also known as member checking (Bryman & Bell, 2015; Creswell, 2013). In Breda verification was done by Rob Temme, policymaker at the municipality of Breda. In Groningen the verification meeting was held with Jaap Valkema, policymaker at the municipality of Groningen. The decision to invite municipal policymakers for these interviews was made based on the outcomes of the initial interviews and actor analysis (Paragraph 4.1.4 and Paragraph 4.2.4), from which was deduced that the municipality was in both cases the central institution with regard to cycling policy. In both meetings the participant was asked whether he recognized the portrayed image of the cycling policy in his city. The most notable remarks and additions are listed in Appendix 5 – Outcomes internal validity interviews. Further respondent validation was performed by providing each research participant with an account of the statements made by that participant. The respondents were then asked for a response in order to approve the validity of the statements.

In order to also increase the external validity of the results, two more respondents from two other Dutch cities (Enschede and Nijmegen) were asked to shed their light on the preliminary results as well. An overview of the outcomes of the external validity interviews is presented in Appendix 6 – Outcomes external validity interviews. For more on the topic of the validity of this research, please refer to Paragraph 5.4.

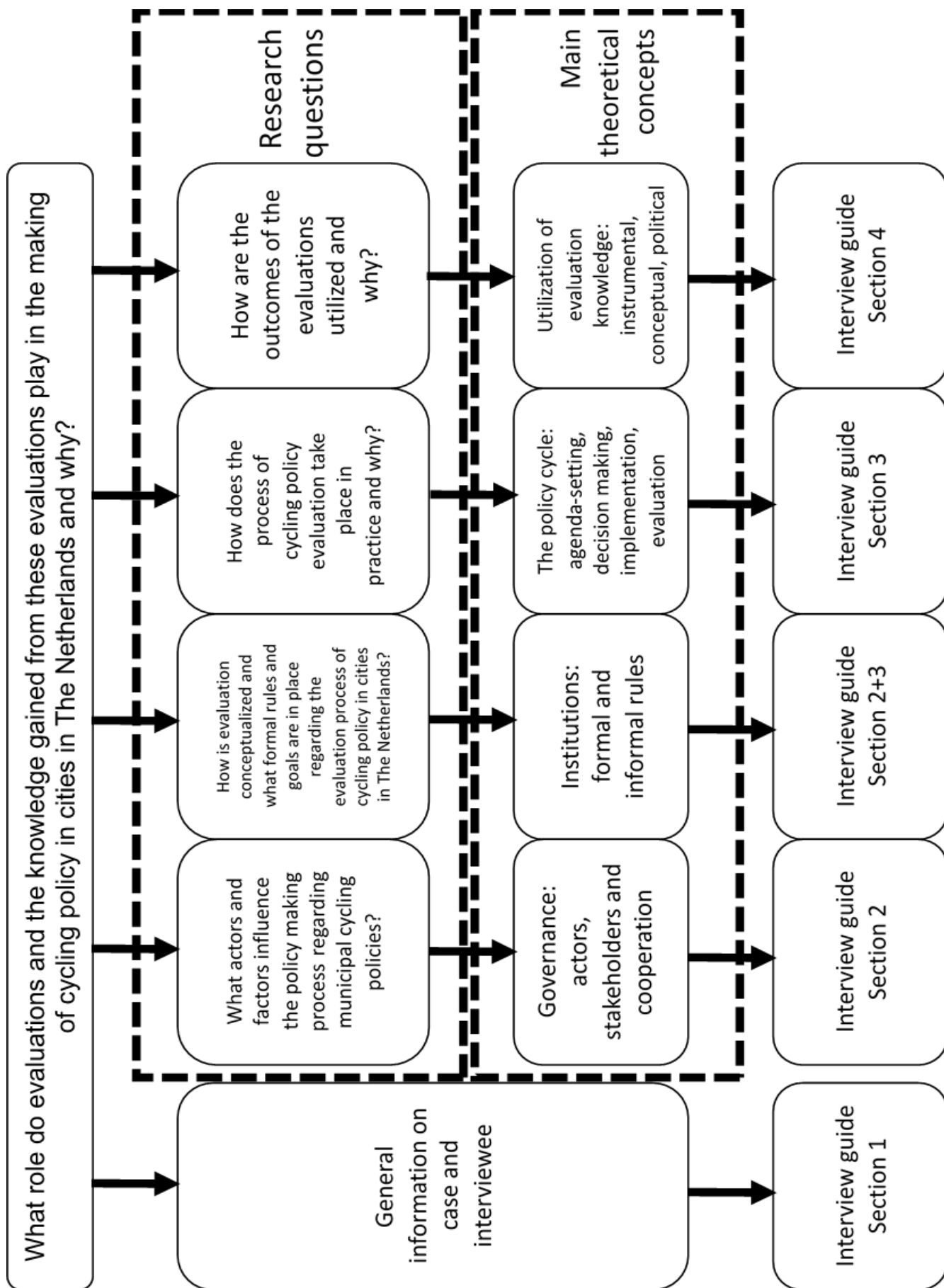


Figure 6: Schematic representation of the operationalization of the research (Author's work)

3.4 DATA ANALYSIS

To ensure a structured analysis of the acquired data, all of the initial interviews held in both cities were transcribed verbatim. These transcripts were then organized and prepared for further analysis using codes: “tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study” (Miles & Huberman, 1994, p. 56). The value of coding interviews lies in its utility for structuring and organizing large amounts of qualitative data. This was done using the qualitative analysis software ATLAS.ti.

Following the process of creating and renaming codes as described in the seminal work by Miles and Huberman (1994), the coding of the interviews had a distinctly iterative character. First, a provisional list of codes was constructed based on the conceptual framework and the interview protocol. Using this list, all of the interviews were then coded for a first time. In case none of the existing codes was deemed fitting for a segment of text, a new code was created and added to the list. After this initial round of coding, all codes and their corresponding chunks of text were checked and, if necessary, recoded. Also, as key themes and patterns started to emerge from the data, codes were hierarchically grouped. This process was reiterated continuously during the analysis. The initial and final code books can be found in Appendix 7 – Initial code book and Appendix 8 – Final code book respectively. Furthermore, the codes and the research question and interview questions they correspond to is provided in the operationalization table in Appendix 3 – Operationalization. An overview of the codes and descriptive statistics related to them can be found in Appendix 9 – Coding statistics.

3.5 DATA PRESENTATION

For the sake of readability, the references to the interviews are coded. The interviewees and their corresponding codes are presented in Table 1, Table 2, and Table 3 for Breda, Groningen and the validity interviews respectively.

Interviewee	Organization	Code
Martijn Geervliet	City of Breda	B1
Rob Temme	Municipality of Breda	B2
Ruud in 't Veld	Fietzersbond, department Breda	B3
Otto Knitel	Fietzersbond, department Breda	B4
Roger Heijltjes	Province of Noord-Brabant / BrabantStad	B5
Martijn Heynickx	Province of Noord-Brabant	B6
Joost de Kruijf	NHTV	B7

Table 1: List of codes for interviewees in the Breda case

Interviewee	Organization	Code
Jaap Valkema	Municipality of Groningen	G1
Michael Myles	Groningen Bereikbaar	G2
Anneloes Groenewolt	Fietzersbond, department Groningen	G3
Rolf Dijkstra	Province of Groningen	G4
Andries Telgenhof	Groningen-Assen Regional Partnership	G5
Els Bijlholt	Hanze University of Applied Sciences	G6
Hans Praamstra	Sweco	G7

Table 2: List of codes for interviewees in the Groningen case

Interviewee	Organization	Code
Rob Temme	Municipality of Breda	BV
Jaap Valkema	Municipality of Groningen	GV
Gerran Spaan	Municipality of Enschede	EV
Martijn te Lintelo	Municipality of Nijmegen	NV

Table 3: List of codes for the validity interviews

4 RESULTS

The following chapter is divided into two paragraphs and presents a structured overview of the outcomes of the empirical data collection. In Paragraph 4.1 (Breda) and 0 (Groningen) the results from the interviews, desk research and verification sessions are presented for each of the two cases. Both of these paragraphs have the same structure. First of all, in order to provide some contextual information, a synopsis of the case is provided, followed by a brief overview of the city's history with cycling policy and a broader outline of the current cycling policies and approaches to cycling. Subsequently, the actors involved and a number of events and developments that have been encountered during data collection are presented. Each paragraph will then conclude with a description of the policy process along the stages of the policy cycle, which was introduced as the heuristic framework for this study in Chapter 2. Both of these paragraphs also include a synopsis of the case being dealt with in order to provide some more contextual information.

Note that the results of the external validity interviews will not be presented here, as they do not offer direct input for the cases under study. Relevant information gained from these interviews will be presented in the discussion chapter.

4.1 BREDA

4.1.1 Introduction

Breda is a city situated in the province of Noord-Brabant in the south of The Netherlands (Figure 7). With a little over 180.000 inhabitants - a number that is expected to continue to grow until at least 2030 - it is the ninth largest city in the country (Centraal Bureau voor de Statistiek, 2015; Gemeente Breda & NICIS Institute, 2009). It is one of the province's five major cities, along with Eindhoven, Helmond, 's-Hertogenbosch and Tilburg, the latter being only 20 kilometers away. The city is a national and international transportation hub, with several train and highway corridors connecting in and around the city.

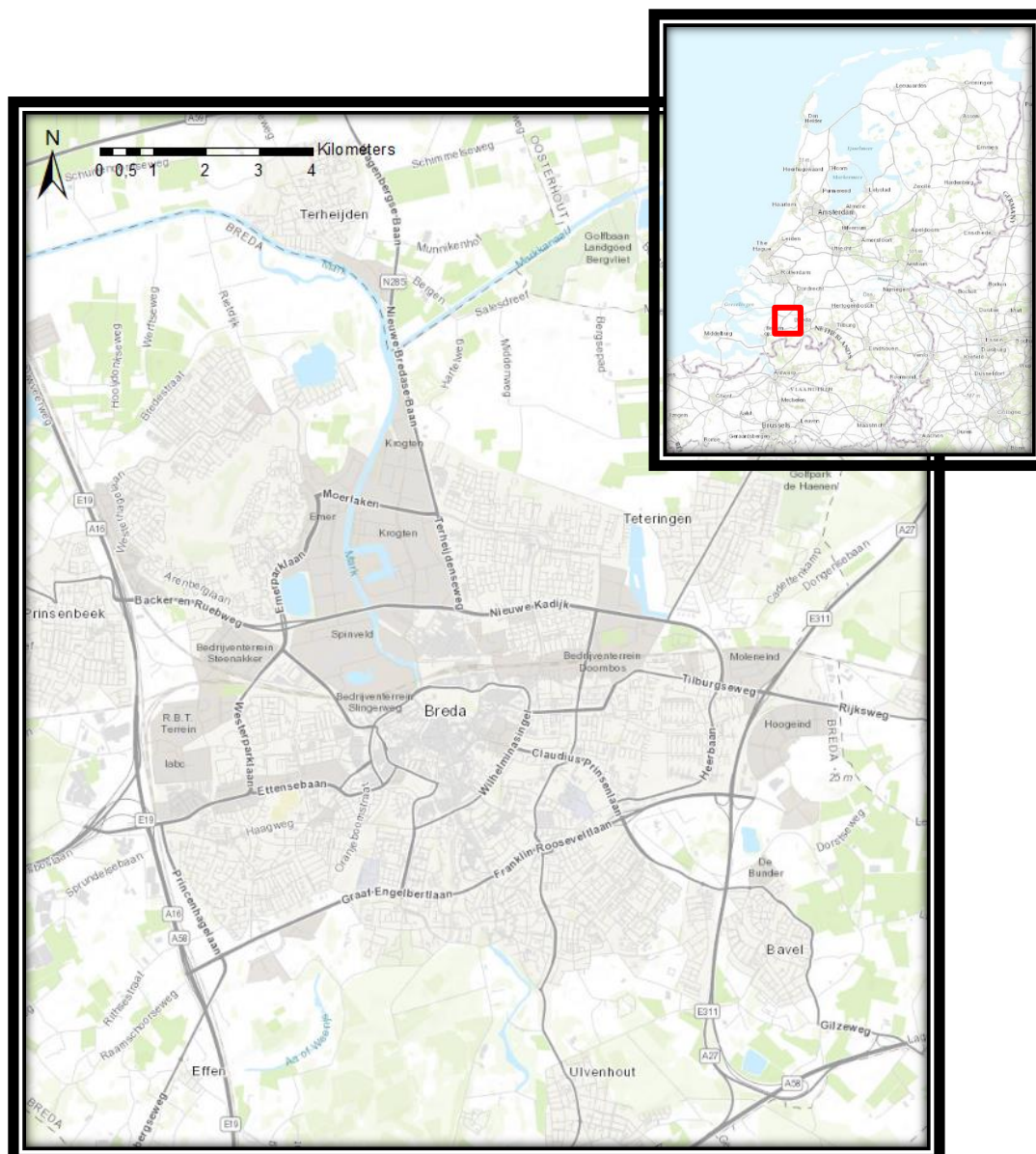


Figure 7: Map of Breda and its location in The Netherlands (Author's work, map data property of Kadaster)

4.1.2 A brief history of cycling policy in Breda

Breda's mobility history is mainly car oriented, as a result of a city council that was often dominated by right wing parties (B3). The city has a long tradition of facilitating car use, for instance by providing large access roads and parking facilities in the city center (Ligtermoet, 2013). As a result, the city is often regarded to as a 'car city'. This started to change by the early 2000s, when the city developed its Traffic Plan Breda in 2003, which still forms the basis for the city's current mobility policies (Gemeente Breda, 2003). Within this plan, the city laid out its mobility challenges and the way it planned to tackle those challenges. Cycling and the improvement of the cycling infrastructure network became some of the city's focal points. This was further exemplified by the cycling policy document, called 'Fietsen, net zo makkelijk' (Cycling, just as easy), released a few years later, which laid out the city's cycling plans from

2007 until 2015 (Gemeente Breda, 2007). In here, the city once again expressed its ambitions to facilitate cycling and through a dual approach consisting of a promotional and infrastructural branch, it laid the foundations for its present pursuits.

4.1.3 Cycling policy today

Breda's current cycling policy consists of three so-called 'pillars' (B1, B2):

1. **The preservation of the current network:** in other words, ensuring the current cycling infrastructure is maintained and remains of good quality;
2. **The construction of new fast cycling routes:** new cycling routes that enable cyclists to get from one place to another with minimal hindrance;
3. **Marketing and promotion related to cycling within the city:** promoting the bicycle not just as a policy instrument, but as a product. The logo the city uses in its campaigns is presented in Figure 8.

The city's ultimate goal is to make the shift from a relatively car-oriented city to a more bicycle friendly city. Notable here is that the city believes that whether or not a city can be labeled a cycling city has little to do with the actual amount of cyclists in the city, but instead has more to do with the city's mentality towards cycling (B2). Therefore, the city is mainly focusing on providing people with choices: people need to be able to choose the transportation mode that is most convenient for the trip they are about to make. Cycling is



Figure 8: Logo of Breda's cycling campaign. The 076 refers to Breda's area code (Gemeente Breda, n.d.)

therefore not regarded to as a goal in itself, but rather as a means to reach a greater goal: keeping the city livable.

The city has deliberately chosen not to put this in a traditional policy document, but opted for a more open approach, a poster:

“The most important reason is that everything needs to be adaptive, because the world changes faster than we think it changes. For that reason, we don’t have a cycling policy plan any more, because by the time such a plan is definitive, it’s already lagging behind.” (B2).

Central in the city’s cycling policy is its so-called “product approach”. Instead of looking at cycling as just another policy instrument, Breda approaches cycling as a product that needs to be marketed (B1, B2). To that end, the municipality collects data on cycling behavior through traffic counts, as well as on people’s preferences through surveys to get an idea of their lifestyles. In addition, the municipality also participates in experiments with mobile apps and other track and trace systems in order to get a better view on cycling behavior. The knowledge derived from these data sources is then used to spend funds on projects with the highest potential for success and as such it forms the basis for many policy decisions.

4.1.4 The actor network

During data collection, five main actors⁴ were distinguished: the municipality of Breda, the BrabantStad partnership, the provincial government of Noord-Brabant, the NHTV, and the Breda department of the Fietzersbond. During the validation interview it was confirmed that these were indeed the most important actors related to cycling policy in Breda (BV). The actors and their most significant relationships have been visualized in an actor network in Figure 9: Visualization of the main actors and their connections in Breda (Author’s work).. Within this network, the main actor is the municipality. They own the infrastructure, as well as the responsibility to ensure the city’s accessibility and livability. From that position, they act as the leading institution when it comes to cycling policy in the city.

The other actors have a variety of roles in the actor network and, as such, they are all of importance, but in different respects. Their common denominator is that they all interact in some way with the municipality on the subject of cycling in Breda. A short introduction for each actor is given below:

⁴ Obviously, there are more actors involved in the full cycle of policy making (e.g. consultancy/research firms, construction companies). However, for the purpose of this research, the decision was made to focus only on the main actors, that is to say, the actors that have, in one way or another, an ability to exert influence on what will and will not be included in the city’s cycling policy.

- The province of Noord-Brabant: the provincial government of Noord-Brabant is involved in several initiatives on cycling and also boasts a clear ambition to make the province the country's number one cycling province;
- NHTV: The NHTV is a university of applied sciences located in Breda. It has a number of faculty members working on (applied) research related to cycling and cycling policy. Both through research, as well as through cooperating with both private and public organizations, the NHTV is actively involved in the world of cycling;
- BrabantStad (BrabantCity): BrabantStad is a partnership between the provincial government of Noord-Brabant and the province's five biggest cities; Breda, Eindhoven, Helmond, 's-Hertogenbosch and Tilburg. For cycling matters, Brabantstad has a committee in which all the usual partners are represented, as well as the NHTV;
- Fietzersbond Breda (Cyclists' Union Breda): Fietzersbond Breda is the cyclists' union of Breda, which represents the interests of cyclists in Breda. The organization has approximately 340 members and is run by a board of approximately ten volunteers.

As mentioned before, the municipality is the leading institution with regard to cycling policy in Breda. They own the infrastructure and fund most of the cycling related projects. As a result, they are also the institution that ultimately decides in what will and will not happen. The municipality does however not rule on its own, but instead communicates with the other actors in order to find the most preferable options.

The relationship between the Fietzersbond and the municipality is mainly of a consulting nature. The Fietzersbond Breda has regular meetings (once every three or four months) with the municipality's policymakers to communicate their opinions on developments related to cycling. Furthermore, the Fietzersbond discusses their ideas on issues at hand with the city's alderman and parties in the city council (B1, B3).

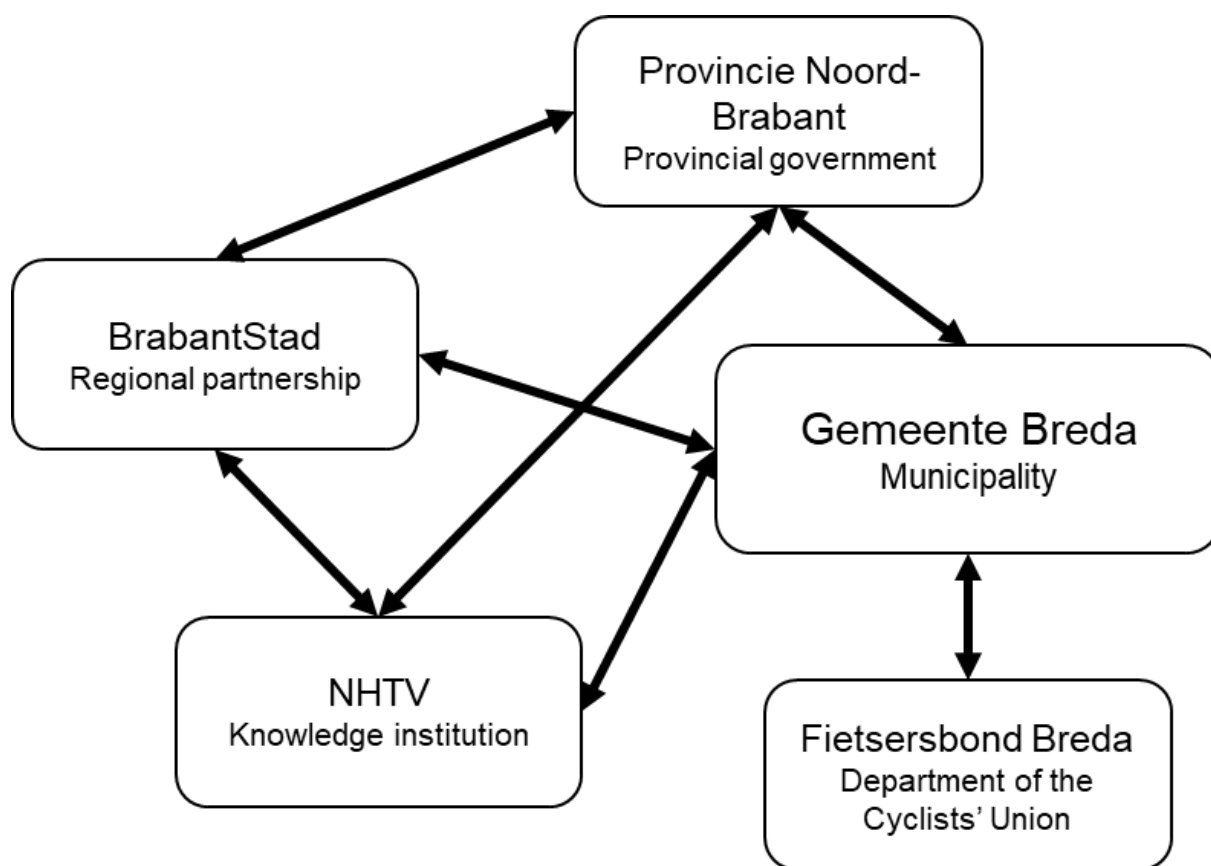


Figure 9: Visualization of the main actors and their connections in Breda (Author's work).

The NHTV traditionally has very strong ties with the municipality of Breda and they are geographically close by (their buildings are next to one another), which is definitely not unfavorable for their cooperation. The NHTV's role is also mainly of a consulting nature. However, whereas the Fietzersbond mainly focuses on pointing out missing links and deficiencies in the current network, the relationship with the NHTV centers mainly around issues surrounding the value of data and new technologies in cycling (more on that in Paragraph 4.1.5). The NHTV and the municipality's policymakers have a shared interest in innovation. In view of that, their cooperation is mainly built around experimenting with new ideas thought of by the NHTV in real life settings (B1, B2, B7). The NHTV is also involved in Breda's cycling policy through its students. Twice a year, students majoring in urban design perform so-called bicycle-guerrillas (Dutch: "fietsguerrilla"): creative actions aimed at stimulating bicycle use, devised and carried out by the students. These bicycle-guerrillas are a way for the municipality to try out original new ideas that they cannot organize themselves (B1, B2).

The Province of Noord-Brabant's role mainly revolves around providing opportunities to fund bicycle-related projects. For Breda that means the municipality is eligible to receive funding from the provincial government in case of projects of regional or even provincial

importance (B5). Also, there are several programs that run on a provincial scale (see paragraph 4.1.5) in which both the province and the municipality have a role.

Most of the intragovernmental communication on cycling however happens through the BrabantStad partnership. The purpose of this partnership is primarily to share knowledge, but in case of a collective interest, the partners may also use it to organize cooperation (B5).

4.1.5 Regional developments

Policymaking processes are no self-contained procedures and the development of Breda's cycling policy is no exception to that rule. Any small change in context may have an impact on the policy. This paragraph will outline the major issues, developments and backgrounds that have recently played or are still playing a role in the development of Breda's cycling policy, as stated by the interviewees. They are listed in the following paragraphs in random order.

Beter Benutten

Beter Benutten (Optimizing Use) is a national program issued by the Dutch Ministry of Infrastructure and the Environment. By funding hundreds of projects in the country, the program aims to improve accessibility and reduce congestion and door to door travel times. In these projects, public and private organizations work closely together to find smart solutions to make better use of the existing infrastructure in The Netherlands. This is also its relevance for Breda. One of the fundamental parts of the Beter Benutten program is its attitude towards monitoring and evaluation. Every measure is extensively monitored and evaluated with all the parties involved to assure it is effectively implemented.

Cooperation agenda BrabantStad Fiets

In February 2015 the BrabantStad accessibility committee decided that, in order to take cycling to the next level, it was necessary to come up with a cooperation agenda: BrabantStad Fiets 2015-2020 (BrabantStad, 2015). Its ultimate goal is to make Noord-Brabant the cycling province of The Netherlands by 2020. To do so, the cooperation agenda includes three programs, each with a number of concrete actions: marketing and cycling behavior, constructing fast cycling routes, and developing better ways to monitor and evaluate cycling use and cycling policy. As such, important parts of the cooperation agenda are the sharing of knowledge and collectively working on projects that benefit multiple partners (B5).

B-Riders

B-Riders is a program initiated by the province of Noord-Brabant and funded by the national Beter Benutten program. It is aimed at stimulating bicycle use during rush hours by directly

rewarding commuters, either with points or a financial prize, for every kilometer cycled during the periods of time with the heaviest commuter traffic. It works with a mobile app that tracks where and when people are cycling. As such, the program does not only stimulate bicycle use, it also provides a wealth of information that can be used to improve the B-Riders program, which happens to be one of the most thoroughly evaluated programs in Beter Benutten, but also other cycling policies running in the province (B5, B6).

New policy plan by Fietzersbond Breda (Cyclists' Union Breda)

In May 2016, the local Fietzersbond branch in Breda offered its new cycling policy plan 2016-2020 to the mayor and aldermen of the city of Breda (Fietserbond Afdeling Breda, 2016). This was not the Fietzersbond's first policy plan, but where the former policy plans used to remain generally superficial, the current plan contains a number of concrete suggestions for future interventions and procedures based on experiences and comments from its members (B3).

Apart from proposing their plans in their policy plan, the Fietzersbond, as mentioned earlier, also has regular meetings with the municipality to voice their opinions on smaller issues. Moreover, to further institutionalize the possibilities to provide input for the municipal plans, the Fietzersbond aims to set up an advisory board for cycling in which a wide variety of actors is represented (B3, B4).

City growth

Breda is growing in its number of citizens, as well as in the number of trips made within the city (B1, B2). This has urged the municipality to think about how it can facilitate all those trips and formed a stimulus to look for the potential of other modes of transport than the car.

New policymakers

Needless to say, the people in charge of the policymaking process, e.g. the policymakers, have a very large impact. The municipality of Breda currently employs two policymakers who both spend a share of their time working on the city's cycling policy. Their appointment as the municipality's new cycling policymakers approximately four years ago marks the start of some appreciable changes in the city's attitude towards cycling and cycling policy, taking what they believed was good from the existing cycling policy as their starting point.

The most important change in cycling policy concerns the previously mentioned "product approach" (B2): the shift from a traditional supply led policy strategy towards a demand led strategy, an approach not often seen amongst policymakers. However, in order to arrange this change, the municipality needed more insight in where this demand could be.

To that end, the city now collects a wide variety of data, ranging from traffic counts, to track and trace data, to qualitative inquiries on people's perception of cycling:

"We don't just look at a map to see where the logical routes are, but also from a perception perspective and to see what kind of people live where, and then we allocate our funds" (B1).

Both Breda's policymakers believe that their own personal attitude towards innovative thinking has been an important factor in establishing their current pursuits (B1, B2). This is also recognized by Joost de Kruijf (B7):

"[A new way of working] is a different way of working than normal, so a lot of people need to get used to that first. What we see is that the people who are positive, those are also the people who are positive towards change, who believe that change can be an improvement of the present, whereas a lot of people regard to change as fear of the unknown".

Their innovative approach consequently also caused them to encounter considerable opposition, within the municipality as well as on a provincial level. Therefore, the decision was made to initially implement a number of actions without official permission from the city council to generate momentum and to then build on the success of those actions (B2). A move that turned out to be successful.

A limiting factor concerning Breda's policymakers is the time they have available to work on cycling (B4, B7). The two of them combined are only able to spend approximately a little under 1 FTE (Full Time Equivalent) on cycling policy, which may limit them in the number of opportunities they can seize (BV).

Bicycle related innovations

One of the major innovations concerned with cycling and cycling policy in Breda is BikePRINT; a tool, developed by the NHTV, to map and quantify bicycle related data that can be used to analyze cycling behavior and may serve as a basis for cycling policy (B7). The NHTV were also involved in the development of Positive Drive, a mobile app that encourages certain mobility behavior through nudging. Moreover, the tracking data acquired through this app is used in BikePRINT as well.

Increasing provincial interest in cycling

The province of Noord-Brabant is aspiring to be one of Europe's most innovative regions and it has the ambition to apply that innovation to its cycling policy as well (Provincie Noord-Brabant, 2016). In the past, the province paid relatively little attention to cycling policy. In recent years, however, it has started to show more and more enthusiasm for cycling and it is becoming more actively involved in cycling projects on a regional and provincial scale, for instance by cofinancing fast cycling lanes (B1, B2, B6). It has also developed an extensive

cycling policy program with a variety of actions for the period from 2016 to 2020, which builds on a larger program running from 2010 to 2020 (Provincie Noord-Brabant, 2009, 2016).

The province's approach is based on three lines, or "gears" (B5): improving provincial cycling infrastructure, stimulating cycling behavior and innovation. The former two gears refer to a broad set of interventions that are primarily aimed at facilitating and promoting the use of bicycles. The latter forms the common approach of the program and was motivated by the previously mentioned desire to be an innovative region, but also in an effort to take its cycling policy to a higher level and make it more effective (B6). To that end, the province has become involved in several cycling related innovations, both by active participation as well as through financial support.

4.1.6 Breda's cycling policy cycle

In this paragraph, the development of Breda's cycling policy will be outlined using the policy cycle introduced in Paragraph 2.1.2 in order to provide a more comprehensive image of the situation in Breda. Yet again, note that the policy cycle is merely a heuristic framework and therefore represents a simplified version of reality. The process is presented below by successively going through the agenda-setting, the decision-making, the implementation and the evaluation. This was also visualized in Figure 10 at the end of this paragraph.

Agenda-setting

Cycling came on Breda's agenda as the result of a combination of factors. First of all, there is the municipality's perception of growing numbers of citizens and trips made in the city. Along with that there is a trend of increasing attention for the potential benefits of cycling compared to other modes of transportation amongst numerous actors in the city, such as the NHTV and, of course, the Fietzersbond (B1, B3). Also important in this early stage is the capability of the municipal policymakers, who are in fact the institution in charge of the process, to find relevant partners that could potentially be beneficial for the city's cycling policies, both in the decision-making process and in the implementation. The city's role in projects such as B-Riders and BikePRINT is a result of this.

Decision-making

Being the leading institution, the final decision on the exact direction and details of the policy lays with the municipality. By initially bypassing the city council in order to gain some momentum, the municipality's policymakers made a risky move, but managed to increase their own decision making space. The previously mentioned product approach was the preferred strategy. It was a pioneering approach that was not always met with positivity and its success depended greatly on the ability to gather a large amount of data (B2). The proximity and shared interest of the NHTV and BrabantStad and the province's overall

positive attitude towards supporting innovation had an important part in this decision. Also, the availability of the Beter Benutten program played a role in the decision space the policymakers had as far as possibilities for funding go.

Most cycling projects in Breda nowadays have a basis in the city's product approach. Other influences on the decision-making is the input from other actors, provided during meetings with actors such as the Fietzersbond and B5 and through consultations amongst schools and local entrepreneurs. The ultimate decision however always lays with the municipality.

Implementation

In order to make efficient use of available budgets, the implementation of infrastructural interventions is often combined with other infrastructural projects:

"When we see that another department is going to work on a street, we try to find a way to hook on to that. That's just a case of using your financial resources as good as possible. So, we don't just look at where we would like to construct new routes ourselves, but mostly look at what is happening in the city and whether we can also incorporate cycling routes in there. [...] We have our own map with routes that we want to create and you largely have to look at what is happening in the city. So when there are developments with roads or when sewer pipes need to be replaced, or anything like that, we look at whether we can add a cycle path in there." (B1)

For the implementation of marketing and promotional activities, the municipality is constantly looking for partners willing to help convey their message. For instance: local entrepreneurs took part in a project that rewarded cycling use and students from the NHTV perform their previously mentioned bicycle-guerrillas.

Evaluation

As part of the city's product approach to cycling, a lot of effort is put into data-collection⁵, in order to properly evaluate policy interventions, both before and after implementation. As such, the concept of evaluation in itself is highly valued. Data on citizens' preferences is gathered through surveys distributed amongst a panel of citizens, as well as via studies done by a hired research firm. Additional data is gathered through a combination of traffic counts and tracking data from a number of mobile apps. By combining all these data sources through BikePRINT, the municipality is able to get an idea of which routes have the potential to be improved and what effects policy interventions have had. It is, however, noted that the

⁵ Though data-collection may happen at any given moment during the policy cycle, and could also be regarded to as a part of the implementation phase, the decision was made to include data collection in the evaluation phase, because that is when it is ultimately brought into play.

data gathered is still relatively limited. Nevertheless, the belief is that, as long as one is aware of these shortcomings, the available data is still more than sufficient to serve as a solid basis for decision-making. (B1, B2, B7).

Despite the efforts regarding data-collection related to cycling, there are still improvements to be made. First of all, the amount of data is still very limited and, as a result, evaluations are too (B7). One interviewee also notes that evaluations are still somewhat neglected in the greater process of policymaking:

“What I think that would benefit us greatly, is thinking in a more concrete line; what are the goals of my program, projects? What do I want to accomplish? Subsequently, what kind of insights do I need? And then you can finetune your entire line of monitoring and evaluation. However, that also means throughout your entire project, throughout your program. Give it a prominent place and a structural implementation, so you can acquire insights and information in a thorough and thoughtful fashion.” (B6).

Furthermore, the sharing of knowledge on the topic of data collection and analysis is very limited. Although there are academics and professionals that work on a national and even international basis on this topic (B7), knowledge sharing amongst policymakers is mostly limited to a more regional scale (B2).

Despite the fact that the city's cycling policy is founded upon a wide range of data collection efforts, factual rules about how this data, and the knowledge derived from it, should be utilized is still lacking, with the exception of projects that are part of the Beter Benutten program. Consequently, the practicalities of the evaluation process are very much subject to the people involved, as well as to time and budget constraints (B6, B7). In Breda this has led the evaluation process to become strongly related to the city's product approach and, subsequently, the evaluation process in practice has a strong emphasis on the ex-ante analysis of data in order to find opportunities. The role of the ex-post analysis is, however, a lot less clearly engraved in the process. The feedback loop that evaluation is supposed to be is more an indirect influence than it is a concrete base for future policy.

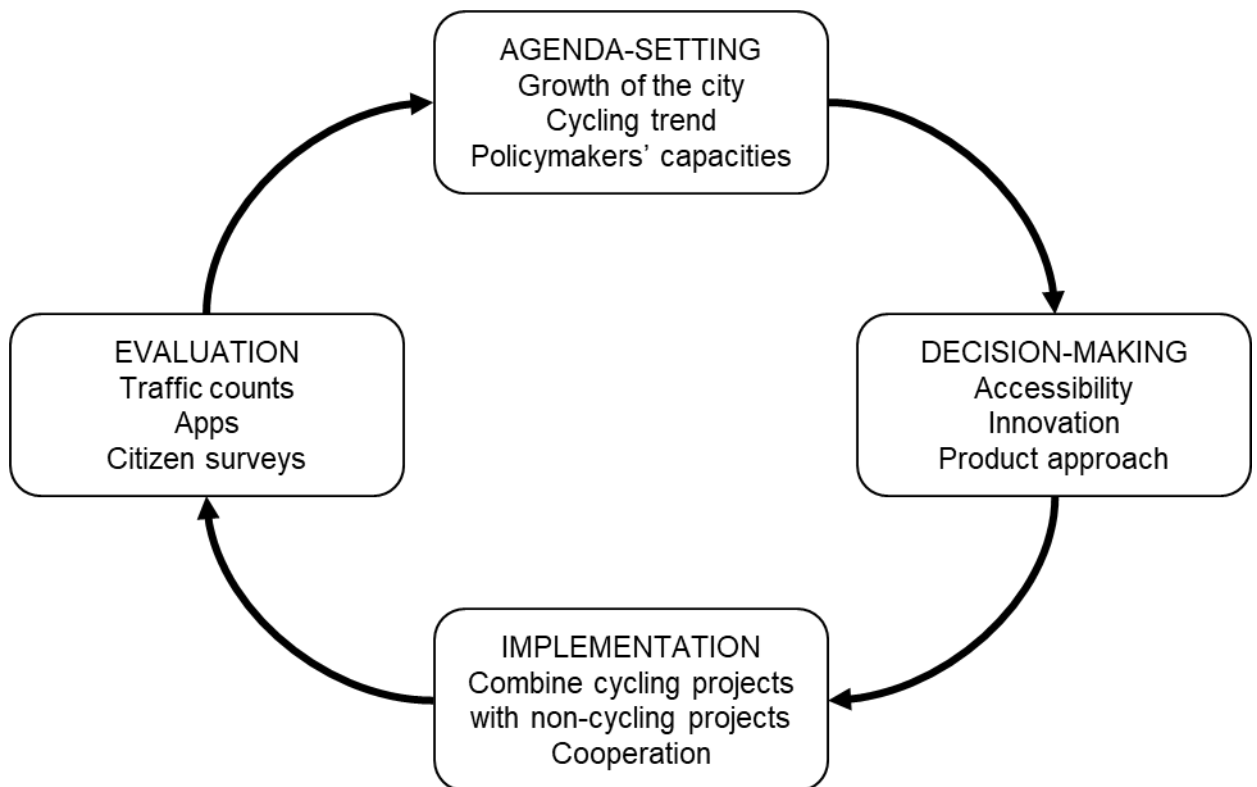


Figure 10: Breda's cycling policy cycle (Author's work)

4.2 GRONINGEN

4.2.1 Introduction

The city of Groningen is located in the north of The Netherlands in the province that bears the same name (Figure 11). With just over 200.000 inhabitants it is the seventh largest city in the country (Centraal Bureau voor de Statistiek, 2015). Like Breda, it is expected that the city will continue to grow until at least 2030 (Gemeente Groningen, n.d.). It is also the largest city in the northern part of the country, making it an important regional center. The city is known as a student city, housing two large universities, the University of Groningen and the Hanze University of Applied Sciences, the two of which combined have a student body of over 50.000.

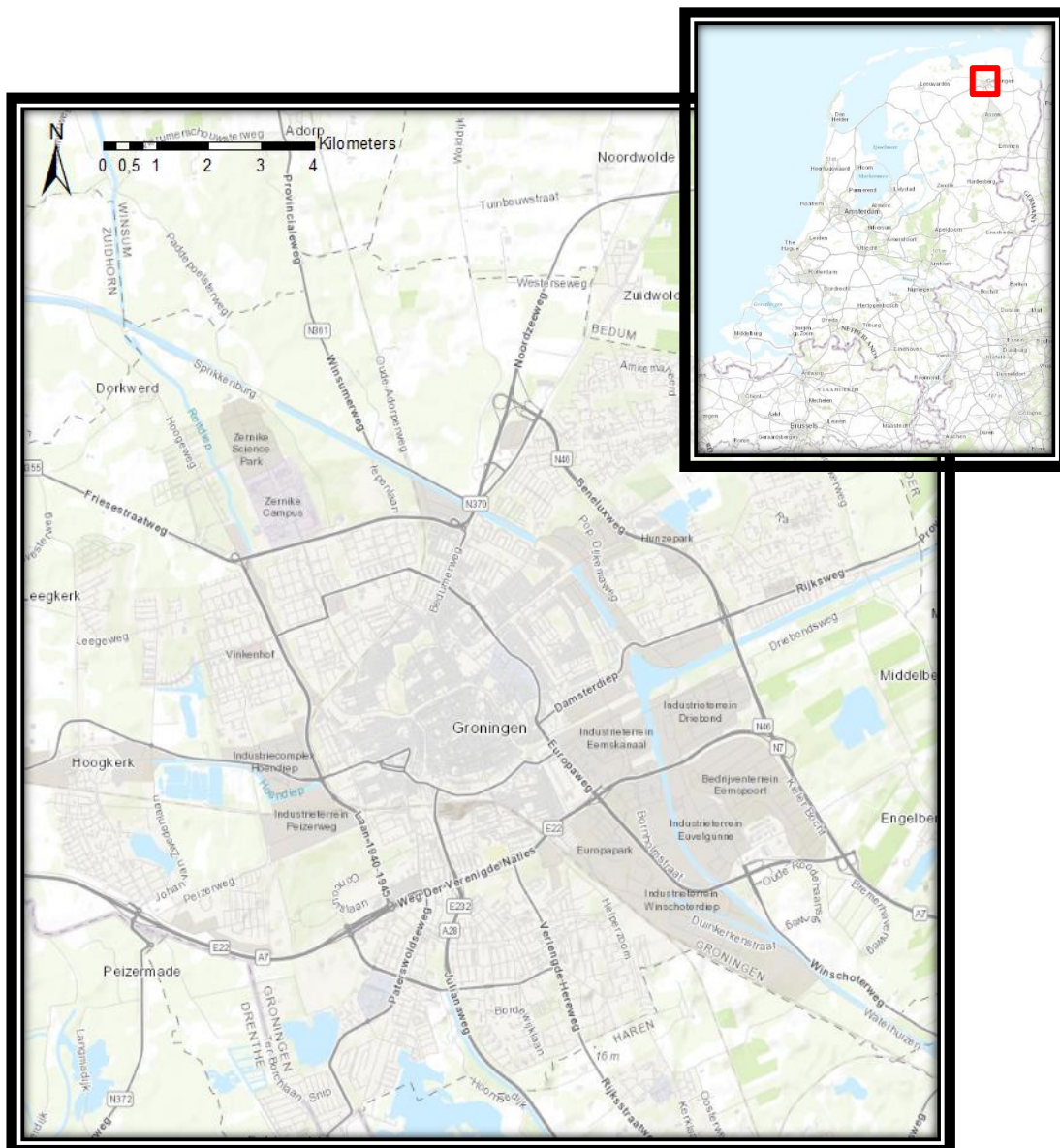


Figure 11: Map of Groningen and its location in The Netherlands (Author's work, map data property of Kadaster, The Netherlands, 2011)

4.2.2 A brief history of cycling policy in Groningen

Groningen is often referred to as one of The Netherlands' premier cycling cities. Cycling and cycling policy have a relatively long history in Groningen, dating all the way back to the 1970s. The first truly cycle friendly traffic policy in Groningen was the Traffic Circulation Plan (Dutch: Verkeerscirculatieplan), introduced in 1977, which reassigned public space used by cars to be used by pedestrians and cyclists (Gemeente Groningen, 2015B). Though the TCP was originally regarded to as a plan to reduce car use in the city center, a groundbreaking idea in those days, it unintentionally turned out to be the basis for decades of cycling policy in the city. Many innovations favoring cycling over other modes of transportation followed,

among which for instance the idea to give cyclists at intersections from all directions a green light simultaneously.

4.2.3 Cycling policy today

As a way revamping the appearance of their cycling policy, the city of Groningen decided to no longer speak of their cycling policy as merely policy, but as a cycling strategy. This strategy, published in 2015, was designed as a way of “*putting a dot on the horizon*” (G1) of where the city sees itself in 2025 with regard to cycling. It consists of five themes (Gemeente Groningen, 2015A):

1. **The bicycle first:** As the city perceives the bicycle as being the most important mode of transport for inner-city transportation, the bicycle plays a vital role in every urban development;
2. **A coherent cycling network:** The city looks at its cycle infrastructure in an integral way. Instead of looking at observing all its cycling routes separately, it focuses on the network by looking at where people come from and where they need to go;
3. **Space for the bicycle:** Because of the vast amounts of cyclists in Groningen, some parts of the city’s bicycle infrastructure cannot cope with the pressure any more. Therefore the city is looking into ways of relieving those bottlenecks by creating new routes or diverting traffic along other existing routes;



Figure 12: Logo of Groningen's cycling campaign. The 050 refers to Groningen's area code (Gemeente Groningen, 2015A).

4. **Needs based bicycle parking spaces:** People want to be able to park their bicycles everywhere at any time. The city is aware of this and wants to facilitate this desire as much as possible by providing solutions that feel logical and natural;
5. **The story of Groningen cycling city:** The city wants to promote itself as a cycling city. Not only as a means of stimulating bicycle use amongst its own citizens, but also as a way to position itself as an inspiring example for other cities. As such, the city hopes that a livable and bicycle friendly image helps in attracting innovative enterprises and thus in stimulating its economy. The logo used by the city in its promotions is presented in Figure 12.

To make its strategy more tangible, the city has also developed an extensive implementation program with a wide array of measures related to the previously mentioned themes. Each of these measures was given a prioritization and is then implemented as soon as an opportunity comes up (Gemeente Groningen, 2015B; GV). That could, for instance, be residual funds from another project or a street needs to be broken up for a non-cycling related reason.

With regard to implementing new innovations, the city prefers a trial and error approach:

“You can think about everything for a very long time beforehand, you never know whether it will work or not and you can consult any study you want for that, but sometimes the easiest way is to just give it a try” (G1).

Apart from that, this approach is partly the product of the fact that the city is one of the world’s frontrunners on cycling use and policy and as a result needs to find solutions to problems that other cities have yet to come across.

4.2.4 The actor network

The interviews in Groningen revealed six main actors⁶: the municipality of Groningen, the provincial government of Groningen, the Groningen-Assen regional partnership, the Groningen Bereikbaar organization, the Hanze University of Applied Sciences, and the Groningen department of the Fietzersbond. This was also confirmed during the validation interview (GV). The actors and their main relationships have been visualized in the actor network depicted in Figure 13. As in Breda, the main actor is the municipality. A short introduction to the other five actors is given below:

⁶ Once again, the author is aware that there are more actors involved in the full cycle of policy making, but a conscious decision was made to concentrate on the main actors.

- The province of Groningen: the provincial government of Groningen has the aim to increase bicycle use and cycling safety in the province. To that end, the province has several projects in place (Provincie Groningen, 2016) (G4);
- Groningen Bereikbaar (Groningen Accessible): Groningen Bereikbaar is an organization, set up by the local authorities, aimed at looking after the city's accessibility during the major infrastructural works scheduled to take place from 2017 to approximately 2022. To that end, Groningen Bereikbaar stimulates innovations in commuting, informs on roadworks and supports travelers in finding different modes of transport (Groningen Bereikbaar, 2017). It is a cooperation of both public and private organizations in the area (G1, G2);
- Groningen-Assen Region: the Groningen-Assen Region is a regional partnership between the province of Groningen and the province of Drenthe, as well as twelve municipalities, among which the municipality of Groningen. Together, the involved municipalities form a daily urban system: an area in which a lot of daily commuting occurs. The organization focuses on three themes that are relevant for all parties represented in the partnership: traffic and transportation, economy, and quality of life (G5).
- Hanze University of Applied Sciences: Together with the University of Groningen, the Hanze University of Applied Sciences is one of the two major educational institutions in the city of Groningen. Its role in the city's cycling policy is mainly centered around developments that include the Zernike Campus, the city's university campus, and general accessibility for students (G6).
- Fietzersbond Groningen (Cyclists' Union Groningen): The Groningen department of the Fietzersbond has a close relationship with the municipality. The Fietzersbond has periodic meetings with the municipality (four times a year, every three months) on the policy's general direction and extra consultations for individual projects (G3).

As was the case in Breda, the municipality in Groningen is the leading institution with regard to cycling policy in Groningen, as they have the responsibility to take care of infrastructure in the city, fund most of the cycling related projects and, as a consequence, have the power to make the ultimate decision on what does and does not happen. However, once again, communication with other stakeholders in the city plays an important role in the municipality's actions.

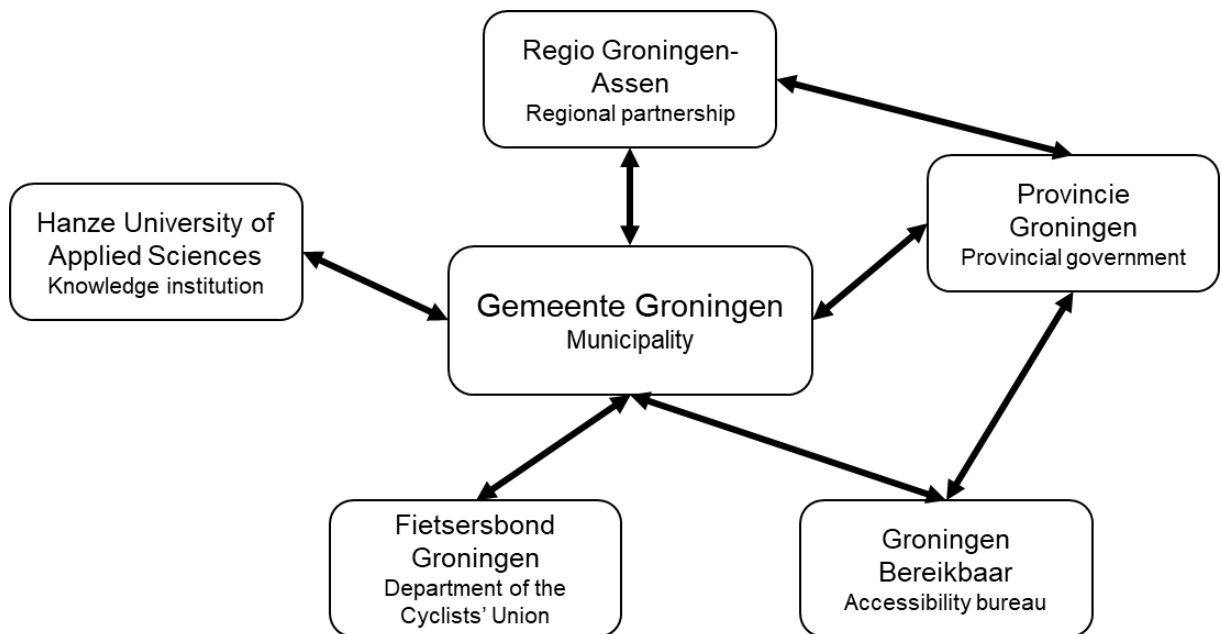


Figure 13: Visualization of the main actors and their connections in Groningen (Author's work).

The Fietzersbond and the municipality have rather close ties. Their relationship is of a purely consulting nature, in which the municipality consults the Fietzersbond in case they have new plans to check their opinion and the Fietzersbond contacts the municipality whenever they seem fit. Furthermore, there are regular meetings (once every 3 months) (G1, G3). As such, the Fietzersbond has the ability to influence the municipality, but generally only on individual or minor issues.

The roles of Groningen Bereikbaar, the province of Groningen and the Groningen-Assen Region are very much alike. Though each organization has its own specific goals, permissions, responsibilities and resources, their roles in municipal cycling policy in the city of Groningen also have a mainly consulting character with some cooperation on projects of mutual interest. Groningen Bereikbaar is mainly concerned with keeping the city accessible during the major infrastructural works taking place over the coming years and as such communicates with the municipality when they feel necessary: *“To realize attractive mobility alternatives, we organize coalitions. The kind of coalitions can differ; this could be a cooperation with private-, public or semi-public organizations, such as a university. Together we work together with the same purpose, because in the end, what we do is a cooperation, so we suggest something and together we weigh what to do”* (G2). The province is mainly concerned with the overall accessibility in the province and considers the bicycle as an important modality. As the city of Groningen is the economic and demographic epicenter of the province, the municipality and the provincial government have a close relationship in which they consult one another and cooperate on projects that are beneficial for both parties (G1, G4). The main concern for the Groningen-Assen Region revolves around the region

covered by the municipalities it represents. As such, its role in Groningen's municipal policy is also limited to consultation and funding in case of shared interests (G5).

Finally, as one of the bigger organizations in the city, the Hanze University of Applied Sciences is also an important consultative actor in the city. With 28.000 students and 2800 employees the university is responsible for a large number of daily movements in the city and to assure these movements happen as smoothly as possible, the university is involved in several mobility related meetings (G6). The university's role is however strictly advisory.

4.2.5 Regional developments

Presented below is an overview of issues and developments surrounding the policymaking process put forth by the interviewees in Groningen.

Beter Benutten

As Beter Benutten is a nationwide program, it is also relevant for Groningen. More details of the program are discussed in Paragraph 4.1.5, header 'Beter Benutten'.

Regional network analysis

The regional network analysis was first performed in 2006 and updated in 2013 by the Groningen-Assen Region (Regio Groningen-Assen, 2013). The main motivation for the update was the cancellation of the construction of a regional streetcar network in 2012: a system of streetcar lines in and around the city of Groningen that was meant to help improve the city's accessibility (G1, G5). The updated regional network analysis was used as the basis for a new accessibility strategy and in the end led to a greater emphasis on the role of buses and cycling in the regional mobility network (G5).

Reconstruction of the southern ring road and station area

The reconstruction of the southern ring road, the highway on the southern edge of the city, and the central station area are about to undergo a major renovation from 2017 until 2022 (Groningen Bereikbaar, 2017). Though the aim of the reconstruction works is to assure Groningen accessibility in the future, the construction works are expected to cause severe temporary accessibility problems. To cope with these problems, several initiatives related to cycling have been set up (G1). Also, the Groningen Bereikbaar organization was established to help guide the different projects around the city with the aim of keeping the city accessible (G2).

Provincial cycling strategy

The city of Groningen has a long cycling history. The province of Groningen has, however, paid relatively little attention to the subject. The province has had a couple of basic cycling policy plans in place since the beginning of the century (Provincie Groningen, 2012), but has

only recently become more ambitious on the subject (G4). In 2015, the province realized, in part as a response to the city's new cycling strategy, that the policy it had in place at the time had a rather limited focus. As a result, the province released a cycling strategy of its own at the end of 2016 in which it set a number of more ambitious goals for 2025 in which it linked cycling to some greater societal trends (G4). The recently released strategy will be further complemented this year by means of an implementation program. An important aspect of the province's strategy is its ambition to increase cooperation between municipalities and other actors in the region on the subject of cycling (Provincie Groningen, 2016).

Smart cycling routes

The Smart cycling routes (Dutch: Slimme routes) were created in 2013 to relieve a very busy cycling route to the Zernike campus. The troubles with the old route were twofold: not only was the capacity of the old route too small, the vast flow of cyclists also caused traffic jams on the roads crossing the route. The development of the smart routes involved only minor infrastructural interventions and was mainly a behavioral matter; an extensive marketing campaign was set up to make people aware of the other routes. The campaign proved successful as the originally large flow of cyclists was found to have divided itself over the smart routes. (G1, G6).

City growth

Based on predictions on the growth of the city as well as on the number of trips made per person, the municipality has been urged to think about how it can facilitate all those trips and formed a stimulus to look for the potential of other modes of transport than the car (Gemeente Groningen, 2015A).

4.2.6 Groningen's cycling policy cycle

As was done for the policy process in Breda, Groningen's cycling policy will now also be described by going into further detail on the agenda-setting, the decision-making, the implementation and the evaluation phases. A visual presentation of Groningen's cycling policy cycle is provided in Figure 14 at the end of the paragraph.

Agenda-setting

Cycling has been on Groningen's agenda for a relatively long time now. The original motive for the city to pursue cycling was the growing car use in the city in the 1970s, which threatened to happen at the expense of the city's historic center (Gemeente Groningen, 2015A). Since then the city has seen numerous interventions related to cycling, but it is still not done yet. The city keeps on growing and to assure its future accessibility and livability, the municipality still puts the bicycle, and the numerous advantages it ascribes to it, high on the agenda (GV).

Decision-making

The city's current cycling strategy was established by many and quick consultations with key partners (G3). Final decision-making however was in the hands of the municipality. Within the municipality, there is a general belief that cycling is beneficial for the city amongst the aldermen and the city council, independent of their political background (G1, GV). The rationale behind those beliefs, however, may differ as, for instance, politicians with a left wing orientation may point at the environmental benefits, whereas rightwing politicians may rather point at the economic benefits. However, as cycling projects continue to become bigger and thus more expensive, the city council has recently become slightly more critical (GV). Ultimately, the overall acknowledgement of the value of cycling for the city amongst local politicians provides the municipality's policymakers with relatively ample room for decision-making.

During this phase, the municipality has regular meetings with actors and stakeholders involved. Within this cooperation process, the initiative mostly lies with the municipality, who assures it all expires smoothly, although other actors may occasionally raise issues of their own as well (G1, G2).

Based on traffic counts, more specifically cyclists counts, through consultation of inhabitants, but also with a healthy dose of common sense, a list of interventions, with corresponding prioritization, was devised and published in an extensive implementation program that builds upon the municipality's cycling strategy (GV) (Gemeente Groningen, 2015B). The value attached to the counts is limited, as there is a common awareness that those are not detailed enough to use as an exclusive indicator (G1, G5, G7). Funding for the interventions is arranged according to the prioritization (GV). In doing so, it is also considered whether interventions can be suspended from other (e.g. car related) projects. Good examples of this are the reconstruction of the city's southern ring road and the central station area (G1, G2).

In choosing its interventions, the municipality is not necessarily looking to be innovative, but feels it is sometimes forced to be so, because the city is far beyond others in its cycling endeavors and thus occasionally encounters problems that others have yet to face (GV). In those cases, the municipality uses a distinct trial and error approach.

Implementation

The distribution of tasks and funds is a task for the municipality. To that end, they use prioritization included in the implementation program. In the event of surpluses in budgets from other projects or budgets that are released for other reasons, funds will be transferred to subsequent interventions on the list (Gemeente Groningen, 2015B; GV).

Evaluation

Every action the municipality undertakes is evaluated. Apart from projects that are part of the Beter Benutten program, this is however not integrated in formal institutions. To be able to properly do so, the municipality gathers data in several ways. First of all, the city performs yearly counts of cyclists. Second, the city uses data collected through a mobile phone app during the national cycle count week (Dutch: Nationale Fietstelweek) and, third, the city collects a range of data on people's perceptions and opinions through questionnaires (G1, G7). This wide range of data serves as basic input for new policy and as a basic indicator for whether the previous policy has had any desirable effects. It is however not used as an exact science; as mentioned before, decision-making relies in great parts on the use of common sense. This is mainly due to the fact that the data is viewed as incomplete and not reliable enough to use as the sole basis for evaluation (G1, G5). As such, the city prefers to focus on people's perceptions and opinions as the main indicators for success. The actual role of evaluations in the policymaking process is therefore not a direct feedback loop that leads knowledge directly to become the basis for new policies, despite the data-collection efforts. Consequently, the role of evaluations is limited to a more conceptual use, which is also due to the lack of a formal and informal institutionalization – there are no formal or informal rules that provide for a standardized place for evaluation in cycling policymaking – of the evaluation process, making it susceptible to many other influences.

Policymakers have become more aware of the deficiencies in data collection, and therefore evaluations, related to cycling over the past years (G7). It is however still in its infancy. Many municipalities, which includes the municipality of Groningen, and other actors are looking to find ways to improve it (GV), but knowledge on the subject is seldom shared: *“Everyone tries to find the golden egg himself”* (G1).

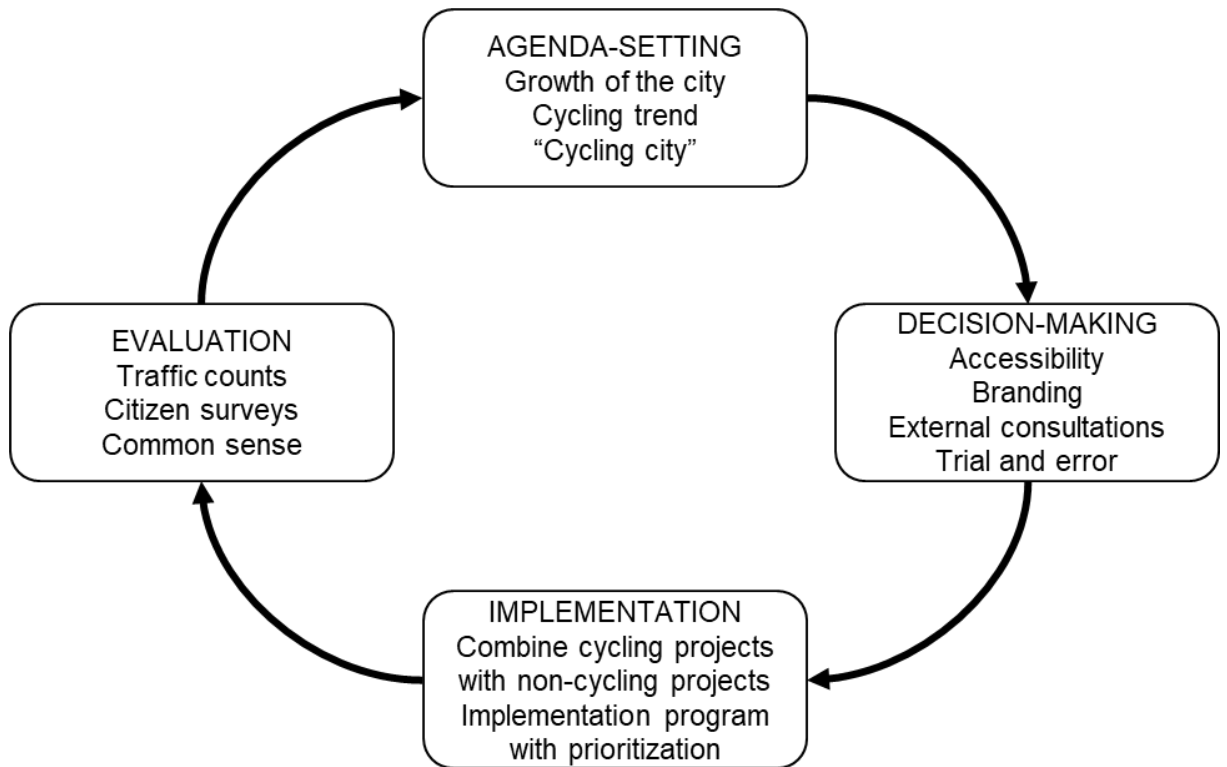


Figure 14: Groningen's cycling policy cycle (Author's work)

5 DISCUSSION

The following paragraphs will provide a thorough discussion of the research. First of all, a reflection on the results of the empirical phase of the study is provided. In this reflection the outcomes of the two cases are compared, highlighting the most striking parallels and differences. Furthermore, the input from the two external validity interviews will be provided to give more insight in the generalizability of the statements made. Second, the implications of this study for prior academic efforts will be discussed by reflecting on the way in which this research has been able to build upon earlier work. Third, an account of the practical implications of this study will expand on the societal value undertaking this research has had. Fourth and finally, the validity, reliability and limitations of the study are discussed.

5.1 REFLECTIONS ON RESULTS

An interesting parallel between the two cities is the actor network. In both cities, the municipality occupies the central role, with a number of core actors that have relatively close ties. The municipality is in both cases clearly in charge of what will and will not happen, limited only by what it's allowed to do by law. Consequently, both municipalities are relatively independent in determining their maneuvering space. With regard to maneuvering space it is however also interesting to consider the roles of the policymakers in the two municipalities as opposed to their respective political administrators. The latter formally have the authority to decide on the direction of the municipal policies, however, in both cities it turns out that most of the decisions are made by the policymakers. In Groningen this seems to be, at least partially, the result of historically embedded institutionalization of cycling, as the early adaptation of the bicycle in municipal policy has led to a widespread consensus among local politicians on the value of cycling for the city and, thus, most plans put forward by the city's policymakers are quickly approved without too many questions. In Breda, where cycling policy is much more of a novel issue, such consensus is still developing. The policymakers' hand is clearly visible in this development, as they have instigated it by running a number of cycling related projects without clear approval from the alderman, nor from the city council, in order to gain momentum and demonstrate the potential added value of such projects. In creating said consensus, respondents in both cities emphasized the importance of creating a story that is adapted to the interests of the politician. Cycling has potential benefits on a wide variety of subjects, so when trying to win someone over, it is important to stress the potential that is in line with the audience's interest. For the policymakers themselves, the main objective, instigated by the growth of the cities and a rise in the number of trips made, they hope to achieve with cycling is clear: preserving urban accessibility and livability. This goes for both cities and was also confirmed during in Nijmegen and Enschede (EV, NV).

Now, back to the topic of actors. The content of the ties towards the actors that are higher scales of government (e.g. the province and region organizations) is very similar in the two cities. We can see that in both cases these organizations have started to further develop their cycling policies as a result of municipal initiatives on the subject and mainly concern themselves with providing infrastructure and funding for projects that exceed the limits of a single municipality. As such, they seem to have had little influence in the more general directions taken by the municipal governments. Interestingly enough, Nijmegen and Enschede no longer have a regional city partnership involved in cycling policy, as the responsibilities those partnerships used to have had been transferred back to their respective provincial governments. The result of that development was that it has become harder for the municipalities to acquire funding, as the provinces are less likely to provide subsidies than the partnerships were (EV, NV).

The influence from the departments of the Fietzersbond seems to have been rather limited as well. Though both have regular meetings with their respective municipalities, they do not seem to have a profound influence on the general direction of the cycling policies in their respective cities, as they primarily focus on pointing out deficiencies in their cities' cycling networks.

Most striking with regard to the roles of actors is the difference between the roles of the universities in both cities' general policy. In Groningen, the Hanze University has a relatively minor role when compared to Breda, where the NHTV has a very close relationship with the municipality. Whereas the NHTV is involved in the innovation of policies and practices, through faculty members as well as through students, the Hanze University's involvement is mainly focused on general accessibility for students and faculty members.

The Beter Benutten program was in both cases of influence, in the sense that it gave the municipalities more possibilities for funding and as a result also increased their maneuvering space. This was also confirmed during one of the external validity interviews (EV). The fact that the Beter Benutten program asks for a clear evaluation process in exchange for its funding, seems to have had only minor influences on the municipalities' decisions to develop a more extensive evaluation program.

When considering factors that have influenced the course of the decision making process, other than evaluations and the knowledge gained from them, there are a few things that stand out. First of all: regional identity. This is a clear example of an informal institution, that has directed both cities in very distinct directions. In Groningen, cycling is very well embedded in the city's institutional arrangements, due to a relatively long history of cycling policies, which has led to the city profiling itself as a cycling city. Accordingly, there is

widespread consensus in the city that cycling is beneficial, in one way or another. In Breda on the other hand, the regional identity predominantly revolves around innovation, as a result of both their own municipal convictions and from the province's. This, in combination with other factors that will be discussed in the following paragraphs, has translated itself into policy in which the use of new technologies and practices have a vital role. That is not to say that Groningen does not have any innovation in its own policy too, because it certainly tries to innovate as well. This is however mainly due to the fact that, because of the city's high cycling rate and pioneering position in cycling, it regularly faces challenges that most other cities have yet to encounter.

That brings us to the next factor: the availability of internal and external funds. As is often the case, money also defines the limitations of what can and cannot be done for cycling policy as well. How money from internal (e.g. municipal) funds is used, seems to be dependent on the priorities the municipality has set for itself. The way external funds are used is dependent on the wants of the actor granting the funds. As a result, external funds may influence municipalities to experiment and do things they normally would not have done. Related to the availability of funding are regional developments. Regional developments have shown to be of influence, mainly as a reason to start new projects related to cycling. This became abundantly clear in Groningen, where the redevelopment of the city's southern ring road and station area, caused actors in the city to reconsider how cycling could be used as a tool in urban mobility. It even sparked the establishment of a new actor: Groningen Bereikbaar, which was set up to help lead the developments in the right direction. This was confirmed in Nijmegen, where redevelopments on the north bank of the river Waal helped spark cycling initiatives as well (NV). As such, even car-related developments can be beneficial for cycling policy.

Apart from funds, another limiting factor is the availability of time; time policymakers are able to spend working on cycling policy. In both cities the municipal policymakers were able to spend approximately one FTE (Full Time Equivalent) on cycling. Multiple respondents in both cities, as well as from both external validity interviews (EV, NV), indicated that time was a crucial limiting factor in what one could and could not do.

One more factor of influence concerns the policymaker(s). It was emphasized by multiple actors in both cases that they are crucial to the process. As explained before, the policymakers in Breda and Groningen both had, although for different reasons, a fair amount of maneuvering space. As such, they have been able to steer the development process of the cycling policy largely as they felt was best. Furthermore, their role in the actor network cannot be understated. Their ability to set up cooperation and dialogue between actors and

stakeholders has shown to be very valuable in successfully progressing their respective cities' cycling policies.

Now that we have defined a number of factors that, based on these two cases and the external validity interviews, seem to be influencing the policymaking process for cycling, the next question is: how do these factors relate to evaluation, and therefore, what can we say about evaluations in the policy process? Policymakers seem to aspire a rational instrumental approach to their cycling policy, meaning they would like to have an objective grounding for their policy. This is however often not the case, as the role of evaluation in practice is mostly limited to conceptual use. The main reason policymakers themselves give for this is that the data they have to work with is incomplete and therefore not a perfect base for policy. Also, common sense is highly valued. This was also confirmed during the external validity interviews (EV, NV). Interesting to see is the difference in attitude towards this problem in the two cases, which seems to be the result of the factors outlined above. Whereas Groningen is starting up some smaller initiatives on the subject of data collection, Breda is actively involved and deliberately seeking improvement. Money seems not to be of vital significance here, but rather prioritizing is. As a result, evaluation often gets neglected, as it has no direct benefits and there are often no concrete formal rules that oblige one to do them. It is also a topic that non-government actors do not care for. They focus on their own goals and expect the municipality to take care of any possible evaluations. In the end, this often results in a situation where evaluations that are carried out after the actual intervention, are done without a thorough consideration of how to do so before and during the intervention. The knowledge from these evaluations is then used for more conceptual learning and the beginning of a new intervention or policy cycle is then often based again on partly available data and partly common sense.

5.2 THEORETICAL IMPLICATIONS

In the introduction it was stated that this study had the intention to add to existing literature on a number of topics related to cycling. In the following paragraph, the contributions of this research to cycling research in general, cycling policy research and policy analysis efforts will be elaborated upon.

The first important theoretical implication have to do with the assumed role of evaluations in the policymaking practice for cycling policy. In line with earlier studies on other kinds of policy by Hertin and colleagues (2009) and Owens and colleagues (2004), it was found that cycling policymakers do indeed aspire a rational instrumental approach to policy evaluation, but tend to take a more interpretive route because of a variety of factors outlined in the previous paragraph. Especially lacks of data play an important role in that, but also a

lack of knowhow on how to effectively employ the available data. These explanations were also mentioned in a study by Bressers (2008) as important reasons for evaluations to not be instrumentally used. The way they are being used seems to correspond more to what for instance Weiss (1999) and Hertin and colleagues (2009) refer to as conceptual learning: the outcomes of the evaluations are not used as the basis for policy one on one, but do function as a directive for future policy.

The second theoretical implication is concerned with institutional arrangements in cycling policy. From the case studies a few things become clear with regard to the changing of institutions. In line with for instance Alexander's (2006) work, we have seen that institutions surrounding cycling policy have been able to change naturally through time, as well as through interference from policymakers. A clear example of this is the way the municipal policymakers have managed to move cycling up on the city's agenda by running a number of cycling related projects without clear approval from the alderman or city council, in order to gain momentum.

Lastly, the third theoretical implication has to do with governance. In line with the development from government to governance that has been observed in many other fields of policy, the cycling policymaking network also involves several actors that all have their own needs and wants. However, the need to find consensus, as described by Meadowcroft (2007) seems to be less strong, as the municipalities' maneuvering space seems to be relatively large.

5.3 PRACTICAL IMPLICATIONS

Based on the results presented in the last chapter, this paragraph presents six general, practical implications of this study. In Paragraph 1.4, when the societal relevance of this study was introduced, a number of problems related to the evaluation of cycling policy and cycling policy in general was presented. The interviews conducted during this research have affirmed these problems and also uncovered several more. Luckily, however, it they have also provided a number of solutions and leads for solutions. The practical implications discussed here are in that respect meant to help policymakers, consultants, or anyone else for that matter, in pursuing fruitful attempts on the topic of evaluating cycling policy or cycling and cycling policy in general. Moreover, these implications serve as the practical relevance of this study and as such help to achieve part of the aims of this research.

On the topic of evaluating cycling policy:

1. A need for formal embedding of evaluations: A major issue with the evaluation of cycling policy is the value that is attached to it. Even though municipal policymakers, and even other actors involved in cycling policy, see potential added value in an

objective, structured and thorough evaluation process, its role seems to be heavily dependent on several factors. Based on the premise that proper evaluation can help direct funding more effectively, there is a clear need to formally embed evaluations in the cycling policy process.

2. Data collection and data analysis are insufficient: There are plenty of ways to acquire data, but the actual data collection is still lagging behind when compared to, for instance, car data. Still, there is lots of data available and most people seem to be aware that. When policymakers do get their hands on such data, other problems come up. Data may be incomplete or there may be doubts about whether it really represents the population. Also, proper analysis of the available data is not always a sure thing and privacy issues come up when too much data is acquired.
3. Policymakers need an easy option: Proper evaluation is hard. As evaluations have no direct benefits, they tend to get 'forgotten' until the end of the process, resulting in inadequate analyses. In the worst cases, this may even lead to rickety, subjective assessments that are made to fit the outcomes of the policy. There is a need for easier, but still proper, evaluation techniques.
4. Sound social cost-benefit analysis is nearly impossible (for now): The benefits cycling potentially brings to society are well-known. How to calculate those benefits, or even the costs for that matter, of a cycling policy intervention are not so much. Though tools exist to make such calculations, they are still not very common, making social cost-benefit analysis nearly impossible.
5. Knowledge sharing is a regional thing: Although it was only briefly discussed before, this is a very important issue. Knowledge on cycling and policy interventions is being shared more and more often amongst policymakers and scholars alike. The topic of evaluation and all topics related to it (see the previous points in this list) is however more of a regional topic of discussion, if at all. As a result, every region is trying to reinvent the wheel on its own.

On cycling and cycling policy in general:

6. The framing is of upmost importance: Cycling has a wide array of benefits for society, but not everyone values all those benefits. When promoting cycling, it is therefore crucial to know your audience and to emphasize the benefits that may be most appealing to them. This is applicable when trying to get cycling on the political agenda, but in marketing strategies for cycling.

5.4 VALIDITY, RELIABILITY AND LIMITATIONS OF THE STUDY

The aim of this study was to gain insight in the evaluation of cycling policy in the Netherlands. In order to assess the quality of the findings, analysis and conclusions, it is important to consider issues of validity (both internal and external), reliability and objectivity. Also, it is good to see if one can identify other limitations to the study in retrospect.

Internal validity refers to the “truth value” (Miles & Huberman, 1994, p. 278) of the findings. As such, internal validity is ultimately concerned with questions of credibility and authenticity: do the findings demonstrate an accurate representation of the subject under study? In order to improve the internal validity of their results, researchers have a wide array of strategies at their disposal (Creswell, 2013; Miles & Huberman, 1994). Three such strategies were employed during this study. First of all, triangulation of data sources was brought into play by combining and comparing the interview data with data acquired through document analysis, with the aim to provide both support as well as nuance to whichever is being stated. Second, the preliminary results were validated through member checking. This was done by means of two internal validity interviews with respondents who had been interviewed before, one for each case. Third, the results were presented using structures deduced from an extensive literature review.

External validity is the question of whether the results of the study can be transferred to situations other than the ones under study. As such, it is also concerned with the question of generalizability. The external validity of the results is particularly interesting in this study, as case studies, and qualitative research in general, typically have a weak external validity (Bryman & Bell, 2015; Verschuren & Doorewaard, 2015). Also, the decision to select the cases through purposeful sampling has consequences for the external validity of the results, as the selected cases are not representative for all cities, but were instead selected using a “sampling frame” (Miles & Huberman, 1994, p. 29), as presented in Paragraph 3.2. Therefore, in order to provide somewhat of an idea of the generalizability of the results, a number of actions was undertaken. First of all by the previously mentioned triangulation of data sources. In this case the significance of triangulation lies in the fact that it assists in further clarifying the context in which the research was carried out, helping readers to assess whether the findings may or may not be transferable to their own settings (Miles & Huberman, 1994). Furthermore, the external validity of the findings was checked by means of two interviews held with officials from two other cities (the Dutch cities of Enschede and Nijmegen). During both of these interviews, the interviewees were first submitted to the same questions that were asked during the initial round of interviews and after that were asked to shed their light on the preliminary results. By using this approach, the interviewees were able to initially provide an unbiased view of their own city and also got a chance to reflect on the

preliminary results of the case studies, based on their own experiences. Additionally, a “rich, thick description” (Creswell, 2013, p. 252) of the participants of the study and the cases was provided. Such a thick description allows readers to assess the potential transferability of the findings and the appropriateness for settings of their own (Miles & Huberman, 1994).

When discussing the reliability of the research, one is basically asking whether the researcher has had any influence on the outcomes of the study and therefore whether another researcher would have come to the same conclusions (Miles & Huberman, 1994). Reliability is an intricate topic in qualitative research. In quantitative research, the objective is to minimize the role of the researcher. However, due to the nature of qualitative research, which inherently involves interaction between the researcher and the subject being studied, this is impossible (Yanow, 2007). Therefore, it is very important to document all steps taken during the research, so possible biases and issues considering objectivity become clear. To that end, all interviews have been transcribed and considerations that were made during the research have been outlined in the introduction (Chapter 1) and the methodology chapter (Chapter 3).

Other limitations of the research include the fact that the interview guide was not tested before it was administered. As a result, the interview guide slightly changed over the course of the data collection process. Therefore not all interviewees were asked exactly the same questions. By doing a number of trial interviews, this could have been prevented. By member checking the preliminary results, however, the author is convinced that this has not affected the outcomes of the study.

6 CONCLUSION

This study was introduced by an account of the rise of cycling and how it has risen onto the agendas of many policymakers in The Netherlands, as well as in many other parts of the western world. In light of the relative newness of this strand of policy, questions were raised on whether these policies were actually effective, how one could know whether they were effective and especially how policymakers assess that in the decisions they make.

The following paragraph will revisit and answer the research questions introduced in Paragraph 1.2. The chapter will then conclude with a number of suggestions for further research.

6.1 THE ROLE OF EVALUATIONS IN CYCLING POLICY

The research aim of this study was expressed as follows:

To gain insight in the role of evaluations and evaluation knowledge in the policymaking process for cycling policy in cities in The Netherlands

To achieve this aim the following questions have been answered:

Question 1: ***What actors and factors influence the policymaking process regarding municipal cycling policies?***

There are many actors involved in municipal cycling policies. Most actors' influence is however limited to individual projects, as the municipality has the last say in the general direction of the policy. Most important herein are the municipal policymakers, who are in charge of the policymaking process. Other factors of influence are regional identity, the availability of funding, regional developments that cycling can be attached to, the interests and abilities of the policymakers in charge and the time they can spend on cycling.

Question 2: **How is evaluation conceptualized and what formal rules and goals are in place regarding the evaluation process of cycling policy in cities in The Netherlands?**

Evaluations are conceptualized as being very useful, as well as very troublesome. They are conceptualized as essential parts of efficient policies, but due to a wide array of factors are often 'forgotten' for most of the policymaking process. Apart from the Beter Benutten program, which asks for thorough evaluations in exchange for funding, formal and informal rules or laws regarding evaluations are limited.

Question 3: **How does the process of cycling policy evaluation take place in practice and why?**

The way cycling policies are evaluated is very dependent on the context. The previously mentioned factors of regional identity, the availability of funding, regional developments that

cycling can be attached to, the interests and abilities of the policymakers in charge, and the time they can spend on cycling, all influence the role evaluation takes in the respective municipality's process. It is however clear that evaluations are considered to be a thing of the municipality; other actors do not specifically care for it. From a practical point of view, policymakers experience a relative lack of data, when compared to for instance car data, which makes it harder for them to perform entirely objective evaluations. As a result of that, policymakers like to trust their gut and to use their common sense instead of focusing on evaluations.

In general, the evaluation of cycling policy in practice boils down to an estimation of opportunities and corresponding prioritization of interventions, which is based on the available data, but mostly on common sense of municipal policymakers. After the actual implementation of the intervention or policy, an evaluation is then often carried out without a thorough consideration of how to systematically do so before and during the intervention.

Question 4: **How are the outcomes of the evaluations utilized and why?**

The way the outcomes of evaluations are used is also partially dependent on the factors that were mentioned before, but in general it seems that the outcomes of evaluations are mainly used in a conceptual way, as a directive, without attaching too much value to the outcome. As such, policymakers use the evaluations to see whether the general direction of their policy is successful and as a lesson for future policies, but mostly rely on their common sense to assess the quality of their interventions.

Main research question: **What role do evaluations and the knowledge gained from these evaluations play in the making of cycling policy in cities in the Netherlands and why?**

The role of evaluations and knowledge gained from evaluations is mostly limited to conceptual use. The outcomes of the evaluations therefore do not serve as a basis for policy one on one, but do function as a directive for future policy. This is mainly due to the previously described problems related to data that is used as the basis for evaluations, which has led policymakers to be careful in not putting all their money on the numbers, but instead also on their own common sense. Other factors however also determine the likelihood of a municipality taking up a more active role on the subject of data collection for evaluations as, for instance, an innovative reputation may act as an incentive to try out new technologies, while on the other hand a lack of time and funding may limit the possibilities.

6.2 RECOMMENDATIONS FOR FURTHER RESEARCH

To round off this study, below are presented a number of recommendations for further research, based on the experiences and outcomes of this research.

First of all, this research only had one moment of data collection and looked back on the policymaking process in retrospect. A longitudinal approach, with multiple data collection interventions would allow one to make more dynamic statements and give a more accurate account of developments through time (Vennix, 2011). In such an approach the researcher would be able to follow the policymaking process for a longer period of time and to go even deeper on the subject, for instance analyzing decisions directly when they are made and having a closer look at the role of discourses.

Second, in order to further solidify the generalizability of the findings and conclusions presented in this study, similar research should be performed in other places and on other scales. To see whether the conclusions of this research hold up in cities of other sizes than the ones under study here, research should focus on bigger, as well as smaller cities. Furthermore, research could also focus on other scales by focusing on cycling policy on a provincial, state or national scale. For the sake of testing generalizability, just an increase in the number of studies on this subject would already be valuable, regardless of the size and type of case.

Third, as this study has a rather inductive character due to the lack of similar research focusing on cycling policy, the outcomes and conclusions have remained relatively general. An interesting route to take in future research would be to dig deeper into the wants and needs of one actor engaging in the process of cycling policymaking. As such, deeper analyses of the rationales and methods of actors can be made. Especially the wants and needs of policymakers, planners and other practitioners would be an interesting research subject, as those people have the central role in municipal cycling policy. Painting a clearer image of how they work and what they need to work could potentially prove very valuable in taking cycling policy to the next level. Furthermore, research could be dedicated to further studying one or more of the factors of influence defined in this study.

Fourth, future research should focus on finding a way to accurately – and accurately is a key word here – define the societal costs and benefits of cycling and cycling policy interventions. As long as the question of what cycling costs us as a society and what it brings us cannot be accurately answered, decision making on the subject will never be truly objective, leaving the question of whether the chosen option is the most efficient one open. Such a social cost-benefit analysis tool, should provide policymakers with an instrument that allows them to accurately weigh their options. Many attempts have been made on this subject, but then again, until now, those have not been able to create consensus amongst practitioners as to their utility.

Finally, as a fifth suggestion, future research could focus on the entire institutional environment surrounding policymaking for cycling. As the current research primarily focused on evaluation and the usage of it, a true all-encompassing institutional analysis of cycling policymaking is still lacking. Such research could, among others, focus on charting the various influences that play a role in policymaking and the extent of their importance. In line with that, an interesting route to take could be to look into the overall evaluation culture in the case or organization under study, in order to see how cycling policy may be affected, or not, by the presence or absence of a culture of evaluating policy in general.

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ANNEX

APPENDIX 1 – TRAFFIC DATA

Transportation mode percentages in The Netherlands and the cases and their provinces.

The presented numbers are averages of the data from the four most recent available years (2011-2014) of the annual mobility study performed by the Netherlands Bureau of Statistics (Onderzoek Verplaatsingen in Nederland).

	Netherlands	Province of Noord-Brabant	City of Breda	Province of Groningen	City of Groningen
Car	45%	50%	47%	44%	29%
Bicycle	27%	25%	25%	31%	40%
Public transport	10%	6%	7%	9%	12%
Other	19%	19%	22%	17%	18%

APPENDIX 2 – OVERVIEW OF INTERVIEWEES

Breda

Interviewee	Organization	Position
Martijn Geervliet	- City of Breda	- Policy maker
Rob Temme	- City of Breda	- Policy maker
Ruud in 't Veld	- Fietzersbond, department Breda	- Deputy chair
Otto Knitel	- Fietzersbond, department Breda	- Board member
Martijn Heynickx	- Province of Noord-Brabant	- Program manager mobility information for management and policy
Roger Heijltjes	- Province of Noord-Brabant - BrabantStad Fiets network	- Program manager implementation program "Fiets in de versnelling" - Chair
Joost de Kruijf	- NHTV	- Research and business innovator urban development, logistics and mobility

Groningen

Interviewee	Organization	Position
Jaap Valkema	- City of Groningen	- Policy maker cycling
Anneloes Groenewolt	- Fietzersbond, department Groningen	- Former chair*

Rolf Dijkstra	- Province of Groningen	- Policy maker traffic
Andries Telgenhof	- Groningen-Assen Regional Partnership	- Program leader accessibility
Michael Myles	- Groningen Bereikbaar	- Mobility management officer
Els Bijlholt	- Hanze University of Applied Sciences	- Campus advisor
Hans Praamstra**	- Sweco	- Spatial development consultant

* At the time of the interview mrs. Groenewolt was still the active chair of the Groningen department of the Fietsersbond, but she has since stepped down.

** Hans Praamstra was interviewed because of his knowledge on monitoring and evaluation in Groningen. All other interviewees were interviewed as representatives of an actor as defined in Paragraph 4.1.4 and Paragraph 4.2.4.

APPENDIX 3 – OPERATIONALIZATION

The table below presents the operationalization of the research. For each interview question, the corresponding research question, main theoretical concept and codes are displayed.

Note: in many cases, there may be overlaps between which, for instance, theoretical concept is part of which question. In some cases one could even argue that all theoretical concepts or a large number of codes may be related to a question. Therefore, for each question, only the most relevant or principal corresponding information is depicted.

Interview question	Research question	Main theoretical concept	Codes
Section 1: The interviewee and the organization			
What does your organization do with cycling policy?	-	-	Interviewee's organization
What is your role in this?	-	-	Interviewee's occupation
Section 2: Cycling policy in general			
When and why did your organization/municipality/region/province take up cycling policy?	1+2	Governance Institutions	General information on policy
What is your cycling policy's goal? What do you want to achieve with your policies?	1+2	Governance Institutions	Policy aim
What are these goals based on? (traffic data?)	1+2	Governance Institutions	Input for policy
How were decisions made on what was and what was not going to be implemented?	1+2	Governance Institutions	Input for policy / Influences on the policy process
What role did collaboration with other actors/stakeholders play in (the development of) cycling policy?	1	Governance	Influences on the policy process (collaboration)
How did these collaborations take place?	1	Governance	Influences on the policy

			process (collaboration)
How much influence do separate actors have?	1	Governance	Influences on the policy process (collaboration)
What other factors play a role?	1+2	Governance Institutions	Influences on the policy process
Section 3: Monitoring and evaluation			
What is your view on this subject? (importance/utilization)	2	Institutions	Value of data and evaluation
Are there any (in)formal rules?	2	Institutions	Influences on the policy process / Data collection
Are possibilities with regard to monitoring and evaluating the policy taken into account when setting the policy's goals?	2+3	Institutions Policy cycle	Influences on the policy process / Data collection
What does the evaluation process look like? How do you determine whether your policy was effective or not?	3	Policy cycle	Data collection
What kind of data do you use for your evaluations?	3	Policy cycle	Data collection
Are your policies monitored?	3	Policy cycle	Data collection
If yes, what do you monitor and how?	3	Policy cycle	Data collection
When is this done?	3	Policy cycle	Data collection
Who takes care of the data-collection and evaluation?	3	Policy cycle	Data collection
During evaluation, are you just looking at the numbers or are causalities also taken into account?	3	Policy cycle	Data collection
Why was this evaluation method chosen?	3	Policy cycle	Data collection

Do you see any limitations to this method?	3	Policy cycle	Data collection (problems)
Do you actively look for ways to improve/innovate your monitoring/evaluation process?	3	Policy cycle	Room for improvement
Do you share knowledge on this subject?	3	Policy cycle	Knowledge sharing (Data collection and evaluation)
Section 4: Reporting and utilization of knowledge gained			
How are evaluation outcomes reported?	4	Utilization of evaluation knowledge	Utilization of data
Who does that?	4	Utilization of evaluation knowledge	Utilization of data
What are policy evaluations used for? (new policies / knowledge / other)	4	Utilization of evaluation knowledge	Utilization of data / Utilization of past experiences
Who uses the evaluations?	4	Utilization of evaluation knowledge	Utilization of data
Why? (path dependence / interests / communication problems / etc.)	4	Utilization of evaluation knowledge	Utilization of data
Does that differ when the outcomes are positive or negative?	4	Utilization of evaluation knowledge	Utilization of data / Utilization of past experiences
Is knowledge about the outcomes shared?	4	Utilization of evaluation knowledge	Knowledge sharing (general)

Is this actively communicated?	4	Utilization of evaluation knowledge	Knowledge sharing (general)
If yes, to whom?	4	Utilization of evaluation knowledge	Knowledge sharing (general)
Section 5: Wrap-up			
Where do you see opportunities for improvements with regard to the evaluation process for cycling policy and the use of evaluation knowledge?	-	-	Room for improvement
Do you know of any other actors/stakeholders that may be interesting to talk to in the light of this study?	-	-	Interviewee suggestions
Do you have any last remarks?	-	-	<i>Various different codes</i>

APPENDIX 4 – INTERVIEW PROTOCOL (DUTCH)

Naam:

Plaats:

Organisatie:

Datum, tijd:

--start opname--

Introductie

- Master Planologie, Radboud Universiteit Nijmegen, specialisatie in Stedelijke Netwerken en Mobiliteit
- Afstudeeronderzoek bij Witteveen+Bos
- Master scriptie over fietsbeleid en het gebruik van evaluaties daarin
- Doel: Inzicht geven in het proces van fietsbeleid en de manier waarop de kennis die vergaard wordt in evaluaties daarin wordt gebruikt.
- Hoofdvraag: Wat is de rol van evaluaties binnen fietsbeleid en waarom?

1. De interviewee en de organisatie

- 1.1. Wat doet uw organisatie met fietsen/fietsbeleid?
- 1.2. Wat is uw functie daarin?

2. Fietsbeleid algemeen

- 2.1. Wanneer en waarom is uw organisatie/gemeente/regio/provincie ooit begonnen met fietsbeleid?
- 2.2. Wat is het doel van het fietsbeleid? Wat wilt men met het beleid bereiken?
 - 2.2.1. Op basis waarvan worden deze doelen gesteld? (verkeersdata?)
 - 2.2.2. Op basis waarvan wordt gekozen wat wel of niet wordt gedaan?
 - 2.2.2.1. Welke rol speelt samenwerking met andere actoren in (de formulering van) het fietsbeleid?
 - 2.2.2.1.1. Op wat voor manier wordt er samengewerkt?
 - 2.2.2.1.2. Hoe groot is de invloed van afzonderlijke actoren?
 - 2.2.2.2. Welke factoren spelen verder een rol hierin?

3. Monitoring en evaluatie

- 3.1. Wat is uw visie op dit onderwerp? (belang/gebruik)
 - 3.1.1. Zijn er (in)formele regels?

- 3.2. Wordt er bij het opstellen van doelen ook al gekeken naar mogelijkheden tot evaluatie/monitoring?
- 3.3. Hoe verloopt de evaluatie? Hoe bepaalt u of uw beleid effectief is?
 - 3.3.1. Wat voor data wordt er gebruikt?
 - 3.3.2. Wordt er gemonitord?
 - 3.3.2.1. Zo ja, wat en hoe?
 - 3.3.2.1.1. Wanneer wordt dit gedaan?
 - 3.3.2.1.2. Wie voert dit uit?
 - 3.3.3. Wordt er alleen gekeken naar cijfers of ook naar oorzaken bij evaluaties?
- 3.4. Waarom is er gekozen voor deze methode van monitoring?
 - 3.4.1. Ziet u tekortkomingen hierin?
 - 3.4.1.1. Wordt er gezocht naar vernieuwing/innovatieve manieren van monitoring/dataverzameling/evaluatie?
 - 3.4.1.2. Wordt er kennis gedeeld over dit onderwerp?

4. Rapportage en gebruik van opgedane kennis

- 4.1. Hoe wordt de reportage uitgevoerd?
- 4.2. Door wie wordt deze uitgevoerd?
- 4.3. Waar worden beleidsevaluaties voor gebruikt? (nieuw beleid / kennis / anders)
 - 4.3.1. Wie gebruikt deze?
 - 4.3.2. Waarom? (padafhankelijkheid/belangen/communicatieproblemen/etc.)
 - 4.3.3. Verschil indien negatief of positief?
- 4.4. Wordt er kennis gedeeld over uitkomsten?
 - 4.4.1. Wordt deze actief gecommuniceerd?
 - 4.4.2. Zo ja, naar wie?

5. Tot slot

- 5.1. Waar zijn er volgens u nog verbeteringen mogelijk in het evaluatie proces en het gebruik van de kennis van evaluaties rondom fietsbeleid?
- 5.2. Wat zijn nog interessante partijen om mee te praten?
- 5.3. Heeft u zelf nog opmerkingen?

Dank u voor dit interview.

--opname beëindigen--

APPENDIX 5 – OUTCOMES INTERNAL VALIDITY INTERVIEWS

Presented below are the main conclusions of the internal validity interviews.

Breda (Rob Temme):

- Breda is not aspiring to become a city with an extraordinarily high cycling share, but rather aims at giving its citizens the opportunity to choose the transport mode that is most appropriate for the trip they are about to make;
- Whether a city is a cycling city or not is not so much dependent on the number of people cycling in the city, but is mainly a matter of the city's mentality towards cycling;
- The municipality looks at cycling as a product, not as a policy instrument;
- Funding for cycling projects often comes from a combination of sources, as the municipality is constantly looking to link budgets with other projects and actors;
- Whether a politician likes cycling is a matter of framing. A left wing politician, for instance, is more susceptible to cycling's sustainability benefits, whereas a right wing politician is more interested in the benefits for the local economy.

Groningen (Jaap Valkema):

- Though the Traffic Circulation Plan is often regarded to as the beginning of Groningen's cycling policies, it was actually designed with a focus on cars;
- The city's cycling strategy has been given a concrete continuation in an extensive implementation plan;
- The trial and error approach is only used for innovations;
- Many projects are funded by cofinancing. However, the municipality always makes sure it has its own part of the funding covered first;
- The city likes to experiment with new interventions aimed at cycling. This is however not just a choice but sometimes also a necessity. As the city is one of the world's frontrunners when it comes to bicycle use, it often encounters problems that other cities have yet to encounter, urging the city to come up with new and untested ideas;
- The municipality has very recently started working on developing a way to monitor bicycle use in cooperation with TNO;
- Both the city council and the board of mayor and aldermen generally have a positive view on cycling. However, both are starting to adapt a more critical view, probably because of the growing magnitude of the projects;
- Whether a politician has a left or right orientation does not necessarily have an effect on his stance on cycling. This is more dependent on the way cycling is framed.

APPENDIX 6 – OUTCOMES EXTERNAL VALIDITY INTERVIEWS

Presented below are the main conclusions of the external validity interviews.

Enschede (Gerran Spaan)

- When the responsibilities that were in the hands of the Regio Twente were transferred to the province of Overijssel after the regional organization ceased to exist, it became harder for the city to acquire subsidies for cycling. The overall budget for cycling in Overijssel is limited and has to be shared by a lot of different parties and regions.
- The city tries to brand itself as an innovative city, but also aims to acquire the title of Cycling City of The Netherlands, awarded by the national Fietzersbond.
- The mandatory evaluation program in the Beter Benutten program has played an important role in the monitoring and evaluation efforts in the municipality of Enschede. The municipality however found that those mandatory measures were not enough for a decent evaluation and decided to develop them further. There were three main reasons for this: (1) the municipality thought it would be a shame if the initial efforts would not be utilized further, (2) the city likes to innovate, and (3) the city thinks there is serious value in evaluation programs.
- The value of the current state of monitoring and evaluation is acknowledged, but is also found to be too limited to be used as a concrete base for policy.
- The municipality has developed its own app to monitor cycling behavior. This app is called SMART. It is used by approximately 200 people (the aim is to get to 1000 users through a number of promotions within the municipality and other organizations) on a regional scale (even though it functions nationally). The municipality has had some contact with other municipalities on the topic of cycling tracking apps, but, in the end, everyone keeps working with his own app.
- Knowledge sharing on monitoring and evaluation amongst government institutions is bad. The national government has some ideas on how this should be integrated in the Beter Benutten program, but that is too little too late.
- The municipality's goal with its cycling policy is to safeguard the city's accessibility. Especially external car accessibility. Internal car use, which could be replaced by cycling, is using space that could also be used by external car users. External visitors are very important for the city's regional function.
- The Fietzersbond Enschede is primarily focused on lobbying for cyclists and pointing out deficiencies in the city's current network. They are consulted through regular meetings.
- The municipality likes to work with a concrete overview of implementations: "A vision is nothing without an implementation program."
- The municipality of Enschede is a 'poor' municipality. The city's cycling budget is therefore limited.
- The municipality has its own mobility bureau: Twente Mobiel.

Nijmegen (Martijn te Lintelo)

- Cycling started to gain traction in Nijmegen in the early 2000s. Since then, there has been a left-wing city council that all of a sudden started to free up rather large budgets for cycling and cycling infrastructure.
- After that it was necessary to rally officials behind the idea and to obtain knowledge. The knowledge was mainly obtained through the realization that constructing long,

high-quality routes works better to get people to cycle than it is to just add some links in the network.

- To that end, in 2011 the municipality sketched a greater vision of the network they envisioned and subsequently started constructing the necessary paths.
- The municipality pays for most of the necessary interventions. Sometimes, other government institutions also pitch in for some projects.
- Because the municipality pays for most projects, it is also the municipality that is in charge of decision-making.
- The abolishment of the Stadsregio Arnhem-Nijmegen (SAN; Cityregion Arnhem-Nijmegen) has had a negative effect on Nijmegen's cycling policy. The responsibilities of the SAN were transferred to the province of Gelderland. The SAN however had a more unambiguous vision than the province, which needs to divide funds over several regions. The substitute regional cooperation organization does not have the same legal mandate as the SAN and therefore does not play any meaningful role for cycling.
- Funding for new cycling infrastructure from the national governments is harder to come by, as the national government prefers to focus on Beter Benutten.
- Beter Benutten mainly focuses on software interventions. It has not led to an increase in monitoring or evaluation methods.
- Prioritization of the interventions is done based on the principle of efficiency: where can we help the biggest group of cyclists by one intervention? Furthermore, financial opportunities play an important role, as well as personal focal points from the alderman. Finally, also the input from the Fietzersbond and citizen groups are taken into account.
- On the topic of monitoring and evaluations there is very little activity. Data from the national cycle count week (Nationale Fietstelweek) are used, as well as data from regular cycle counting stations. Most decisions are however made based on common sense (this also goes for the 2011 policy document).
- The decision to go on common sense, rather than numbers, was a conscious decision. It is founded in theories derived from economics: The Anglo-Saxon model versus the Rhineland model. The Anglo-Saxon model primarily focuses on money (so numbers and efficiency), whereas the Rhineland model also takes into account the human side (so social costs and benefits). In order to make a thorough consideration that includes social costs and benefits, common sense is the best decision, as the numbers are insufficient for such a thorough consideration.
- The available man hours are an important constraining factor in what can and cannot be achieved.

APPENDIX 7 – INITIAL CODE BOOK

Initial list of codes:

- Interviewee's occupation
- General information on organization

- General information on policy
- Policy aim
- Strategy
 - Example of policy intervention
- Input for policy
- Influences on policy decisions
- Collaboration

- Data collection
- Problems with data collection
- Reason for evaluation
- Value of data and evaluation
- Room for improvement

- Utilization of data
- Utilization of past experiences
- Knowledge sharing

- Interviewee suggestions

APPENDIX 8 – FINAL CODE BOOK

Final list of codes

Interviewee

- Interviewee's occupation
Fragment indicating the occupation of the interviewee
- Interviewee's organization
Fragment indicating general information on the organization of the interviewee
 - Aim
Fragment indicating the aim of the interviewee's organization in the cycling policy process
 - Motivation
Fragment indicating the reasons for the interviewee's organization to act or collaborate in the cycling policy process
 - Strategy
Fragment indicating the strategy employed by the interviewee's organization

Policy

- General information on policy
Fragment indicating general information on the cycling policy of the case in question
- Policy aim
Fragment indicating the aim of the cycling policy of the case in question
- Policy strategy
Fragment indicating the strategy used to implement the policy in the case in question
 - Example of policy intervention
Fragment indicating an example of a policy intervention
- Input for policy
Fragment indicating affairs that served as a basis to set the policy aims.
 - Assessment of potential
Fragment indicating how local assessments of cycling potential contributed to setting policy aims
 - Nationwide data
Fragment indicating how nationwide data related to contributed to setting policy aims
 - Positive experiences
Fragment indicating how positive experiences from past measures contributed to setting policy aims
 - Sense of urgency
Fragment indicating how a realization that a change in urban mobility is needed to keep the city livable contributed to setting policy aims
 - User feedback

Fragment indicating how user feedback on previous policy measures contributed to the setting of policy aims

- Influences on the policy process

Fragment indicating factors that have influenced decisions made in the policy process

- Awareness of possibilities
Fragment indicating the influence of (a lack of) awareness of possibilities related to cycling
- Capacity
Fragment indicating the influence of available capacity in personnel
- Collaboration
Fragment indicating the influence of collaboration or individual actors
- Innovation spirit
Fragment indicating the influence of an organization's willingness to go off the beaten path and to try new and innovative methods
- Local developments
Fragment indicating the influence of local developments
- Money
Fragment indicating the influence of the availability of money and funding
- Path dependency
Fragment indicating the influence of earlier decisions and the current situation with regard to cycling and traffic in general
- Personal interest
Fragment indicating the influence of personal interests of people involved
- Political will
Fragment indicating the influence of politics
- Student involvement
Fragment indicating the influence of students

Data collection

- Data collection

Fragment indicating the method used to collect data related to the cycling policy

- Continuous
Fragment indicating data collection was carried out all year long
- Experiences
Fragment indicating data was collected on people's experiences
- Numbers
Fragment indicating numeric data related to cycling and/or traffic in general was collected
- Periodic
Fragment indicating data collection was carried out during a specific period of time

- Problems
Fragment indicating problems or difficulties related to the collection of data on cycling
- Value of data and evaluation
Fragment indicating how data and evaluations can be valuable to policy making
- Room for improvement
Fragment indicating where the interviewee thinks improvements can be made related to the monitoring, data collection and evaluation of cycling policy

Knowledge

- Utilization of data
Fragment indicating how the available data on cycling is used
 - Advertising
Fragment indicating available data was used as an advertisement for the city
 - Conceptual learning
Fragment indicating available data was used as a source of inspiration for future endeavors
 - Instrumental learning
Fragment indicating available data was used as direct input for new policies
 - Political use
Fragment indicating available data was used for political purposes
- Utilization of past experiences
Fragment indicating how past experiences with policy interventions are used
 - Conceptual learning
Fragment indicating experience was used as a source of inspiration for future endeavors
 - Instrumental learning
Fragment indicating experience was used as direct input for new policies
- Knowledge sharing
Fragment indicating how knowledge related to cycling policy is shared with others
 - General
Fragment indicating how knowledge on the output and outcome of policy is shared
 - Data collection and evaluation
Fragment indicating how knowledge on the monitoring and evaluation of cycling policy is shared

Other

- Interviewee suggestions
Fragment indicating a suggestion for a next interviewee

APPENDIX 9 – CODING STATISTICS

	Martijn Geervliet	Jaap Valkema	Anneloes Groenewolt	Andries Telgenhof	Roger Heijljes	Michael Myles	Rob Temme	Roif Dijkstra	Martijn Heurnickx	Eis Bijnholt	Joost de Kuif	Hans Praamstra	Ruud in 't Veld & Otto Kniel	TOTALS:
Data collection - Continuous	1	0	0	0	2	0	0	1	1	0	0	0	0	5
Data collection - Experiences	4	1	0	0	1	3	0	1	1	0	0	0	0	11
Data collection - Numbers	1	4	0	0	2	0	1	1	1	1	0	0	0	15
Data collection - Periodic	3	4	0	0	1	3	1	2	1	1	1	0	2	20
Data collection - Problems	2	8	0	0	0	0	0	7	0	0	0	0	3	26
Example of policy intervention	2	2	0	0	1	0	0	0	0	0	0	0	0	6
General information on policy	1	2	0	0	0	0	0	1	0	0	0	0	0	4
Influences on policy decisions - Awareness / knowledge	0	0	0	0	0	0	0	0	1	0	3	0	0	6
Influences on policy decisions - Capacity	1	0	0	0	0	0	0	0	0	0	1	0	1	3
Influences on policy decisions - Collaboration	10	6	5	2	5	4	6	4	1	4	2	2	0	58
Influences on policy decisions - Culture	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Influences on policy decisions - Current situation / path dependency	1	1	0	0	0	1	1	0	0	0	3	0	0	7
Influences on policy decisions - Innovative	0	1	0	0	1	0	1	1	1	2	1	0	0	8
Influences on policy decisions - Local developments	2	0	0	1	0	0	1	1	0	1	0	0	0	7
Influences on policy decisions - Money	1	6	0	0	2	0	1	0	0	1	1	1	1	16
Influences on policy decisions - Personal interest	2	0	0	0	0	0	2	0	0	2	0	1	0	7
Influences on policy decisions - Politics	4	5	3	0	2	0	2	2	0	0	0	2	2	22
Influences on policy decisions - Student involvement	0	0	0	0	0	0	0	0	0	3	0	0	0	3
Input for policy - Assessment of potential	5	0	0	0	1	0	0	1	1	0	1	0	0	10
Input for policy - Nationwide data	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Input for policy - Pastive experiences	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Input for policy - Sense of urgency	1	0	0	0	0	0	1	0	0	0	0	0	0	2
Input for policy - User feedback	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Interviewee's occupation	0	1	0	1	1	1	0	2	1	2	1	1	1	14
Interviewee's organization - Collaborator's aim - Fietserbond Breda	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Interviewee's organization - Collaborator's aim - Fietserbond Groningen	0	0	0	4	0	0	0	0	0	0	0	0	0	4
Interviewee's organization - Collaborator's aim - Groninger Bereikbaar	0	0	0	1	0	3	0	0	0	0	0	0	0	4
Interviewee's organization - Collaborator's aim - Hanzehogeschool	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Interviewee's organization - Collaborator's aim - NHTV	0	0	0	0	0	0	0	0	0	0	5	0	0	5
Interviewee's organization - Collaborator's aim - Provincie Groningen	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interviewee's organization - Collaborator's aim - Provincie Noord-Brabant	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Interviewee's organization - Collaborator's aim - Regio Groningen-Assen	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interviewee's organization - Collaborator's motivation	0	0	2	1	0	0	0	5	1	0	2	0	3	14
Interviewee's organization - Collaborator's strategy - Fietserbond Groningen	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Interviewee's organization - Collaborator's strategy - Groningen Bereikbaar	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Interviewee's organization - Collaborator's strategy - Groningen Hogeschool	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Interviewee's organization - Collaborator's strategy - NHTV	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interviewee's organization - Collaborator's strategy - Provincie Noord-Brabant	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Interviewee's organization - Collaborator's strategy - Provincie Groningen-Assen	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Interviewee's organization - General information	0	0	5	1	1	0	0	0	0	0	1	0	0	10
Interviewee's suggestions	1	2	2	3	3	0	0	0	0	0	0	1	1	13
Knowledge sharing - General	3	3	0	0	0	0	0	0	2	0	0	0	0	9
Knowledge sharing - Monitoring and evaluation	3	2	0	0	1	0	0	0	3	0	2	0	0	6
Policy aim	3	0	0	0	0	0	2	0	0	0	0	0	0	7
Policy strategy	7	3	0	0	0	0	8	0	0	0	7	0	0	18
Room for improvement	3	1	0	0	5	2	1	2	1	0	0	2	0	26
Utilization of data - Advertising	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Utilization of data - Conceptual learning	0	2	0	1	0	0	0	1	3	0	0	0	0	7
Utilization of data - Instrumental learning	3	0	0	0	1	2	1	0	1	0	0	0	0	11
Utilization of data - Political use	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Utilization of past experiences - Conceptual learning	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Utilization of past experiences - Instrumental learning	0	1	0	0	1	3	0	0	0	0	0	1	0	6
Value of data	2	0	0	0	4	0	1	0	1	0	4	1	1	16
TOTALS:	62	59	24	32	38	24	33	41	20	22	38	18	23	434

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