

Urban politics in action: The case of sustainable mobility policies in the Dutch Randstad



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SUMMARY

The current academic surrounding sustainable mobility centres on the effectiveness of governmental policies, interventions or the contribution to reducing emissions (Boogaard 2012; Börjesson & Kristofferson 2015). This approach, however, misses the political aspect of real-life decision making and what constitutes a legitimate policy (Christiansen 2018). Governmental policies are not simply the result of the identified needs and wants by expert urban planners (Jensen 2011; de Haan et al 2014). Additional Important aspects such as legitimacy, the role of citizens and urban experimentation need to be considered. The creation of governmental policies is therefore simply the result of objectives but the manifestation of urban politics (Bulkeley et al 2013; Isakson & Richardson 2009). This research aims to address the lack of evaluation and description of governmental policies of urban mobility. For this research, chapter 1 shows the introduction, research aim and research framework. In chapter 2 the frameworks for systematic description and evaluation of legitimacy are established. The framework for analysis consists of the municipal vision, policy implementation and politics of experiments while the evaluation of legitimacy consists of six criteria: The consistency of the municipal vision, consistency between governmental layers, transparency & monitoring, innovation capacity, stakeholder participation and comprehensiveness. Based on the framework for analysis and newspaper articles, the governmental policies and sites of urban politics are systematically described in the chapter. These findings are then used in Chapter 4 to evaluate the legitimacy of governmental policies and provide key lessons from the comparison. Based on these findings several conclusions can be drawn. Firstly, the governmental policies and their overarching strategies are relatively similar but differ in terms of implementation. This leads to different sites of urban politics in each municipality. Secondly, the legitimacy of the Randstad area is relatively high and between municipalities and both common and unique strengths and weaknesses. The recommendations for the weaknesses consist of improving communication towards citizens, establishing a framework and dedicating resources for innovation, improving coordination between governmental layers and improving the quality of deliberation and participation.

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: INTRODUCTION

1.1: PROBLEM DEFINITION

Urban mobility is a subject that is historically about getting citizens from point A to point B in an affordable, accessible, and timely way (Nikolaeva 2017). Until recently sustainability was not an important element in governmental mobility policies. This, however, is starting and municipalities are employing several strategies and policies to reduce emissions. Policies and measures can consist of encouraging electronic car usage and car-sharing, banning old diesel cars from the city centre or increasing the rate of cycling. These new solutions and measures compete with old types of transportation, require additional investments of resources and potentially a behavioural change from the public. This causes urban mobility to become increasingly politicised putting further strains on the legitimacy of local policies and local governments. This increased politicization of mobility policies within cities is defined as "urban politics".

One approach to defining urban politics is the politics pursued in areas known to be urban within the administrative borders of the local or city governments. However, the tight territorial boundaries of the city are an uneasy fit in practice for describing some of the processes of urban politics (Cochrane 2018). Other approaches to urban politics focus on the (public) spaces of the city in which different population groups come together and identify as collective actors (Cochrane 2018, 14). In regards to mobility, territorial boundaries do not fit with the direct influence of the central government on experimental spaces, regional infrastructure projects with significant urban influence and competing interests between provinces and municipalities. To make urban politics fit with these processes, political actors and major development projects which are centred on the metropolitan areas need to be linked to local politics (Cochrane 2018). For this thesis, this means the inclusion of territorial boundaries directly linked to the Metropolitan Area of Amsterdam (MRA), Metropolitan Region Rotterdam Den Haag (MRDH) and Utrecht 16. Within urban politics, place frames consist of a specific kind of politics in which both imaginary and existing space is being contested through, for example, neighbourhood renewal policies (Joseph et al 2011). These place-positioned politics might occur at specific locations but can also stretch beyond to other potential areas for contention within the conflict (Joseph et al 2011). The negotiations and resolutions can, however, be temporarily placed in specific locations such as the Pijp area in Amsterdam during the North-South metro line construction.

The statement made by the councillor of infrastructure Sharon Dijksma regarding the municipality of Amsterdam aim of banning fossil cars in 2030 was met with strong reactions from national parties, citizens and car manufacturers (de Volkskrant 2019). This indicates that policies in regards to urban climate change are increasingly becoming more politicized and that the perceived legitimacy of policies is susceptible to public pressure (Bulkeley & Betsill 2013).

The influence that these municipal policies have reached beyond the influence of traditional emission standards, leading to new questions regarding their effect on the public. Implementations of these policies have placed increasing restrictions on citizens' freedom of choice. For the public to accept such radical changes the policy process is required to be perceived on a legitimate basis. Large scale resistance to change can lead to the establishment of opposing coalitions hampering the speed of the transition and possibly reversing positive change (Edmondson et al 2019; Rogge et al 2016; Flanagan 2011 et al).

There are four governance challenges related to urban politics of mobility: The lack of resources due to mandatory spending on basic provisions such as road maintenance, the risk of doing token changes, the conflict between economic and environmental agendas and the feasibility of ambitious targets set by councils to fulfil political ends (Bulkeley & Betsill 2013). The reasoning behind the level of ambition is especially important because it feeds into overarching strategies such as smart cities, car-free cities and carbon-free cities and their proposed win-win situations. By selling mobility policies as a win-win to the general public, expectations are being raised and exacerbate the potential fallout. Because of this urban mobility has recently become an important space in which urban politics manifest.

Achieving a transition towards sustainable mobility requires significant changes to our current system. In the past, a lot of structural changes were mainly facilitated through market forces creating innovations leading to a revolution of the entire system. Due to the pressure of climate change and other negative effects of fossil fuel-driven mobility, governments aim to accelerate the transition away from the current carbon-intensive mobility system (Nikolaeva 2017). The overarching strategies municipalities adopt can be linked to the concept of a principal plan, which indicates the transition paths that municipalities take based on their framework conventions, action plans, guidelines, and roadmaps (Rogge et al 2016, 1623).

The logic of urban planners and their perspective on mobility is the basis for the various municipal roadmaps, policy papers and visions of the city. In general, visions are established based on spatiality and influences both internal and external. The governance practices rely on measuring, conceptualising and structuring the urban spaces to fulfil the needs and wants of their urban subjects. Furthermore, the perception of modern mobility as being part of individual freedom and autonomy has a large influence on the design and use of these urban spaces (Jensen 2011, 262). The present integration of sustainability into this perspective adds further complexity to mobility projects and policies (Stead 2016).

1.2: SCIENTIFIC KNOWLEDGE GAP

Currently, the academic debate surrounding transportation policies focusses either on the effectiveness of government interventions in terms of emission reduction (Boogaard 2012; (Börjesson & Kristofferson 2015) or the need for companies to reduce transportation emissions (Pålsson & Johansson 2016; Ellram & Golobic 2016). As indicated by Marsen and Reardon, sustainable mobility literature is oriented towards technical-rational models aiming to evaluate transportation policies in terms of efficiency and effectiveness (2017, 19). This orientation, however, misses issues of contestability such as power, legitimacy, and trust. This sentiment is echoed by Christiansen, who indicates that transportation policies influence support for local democracy both positively and negatively (2018, 316). This means that sustainable mobility policies are not the result of techno-rational solutions but a manifestation of urban politics. Several scholars do stress the importance of urban politics in regards to climate change and their effect on the resulting policies (Bulkeley & Betsill 2013; Uitenbroek, Mees & Hegger 2019; Isakson & Richardson 2009). The urban politics of climate change described by Bulkeley & Betsill is closely linked to sustainable mobility due to the overlap in objectives such as emission reductions (2013). The urban politics of climate change lead to the manifestation of policies within the metropolitan areas and commitments to long term goals such as the aim by the municipality of Utrecht to be climate neutral by 2030. Due to this overlaps in goals, the public can also assume that mobility policies are mainly the products of the urban politics of climate change. Approaching mobility policies and projects solely as a result of the expertise of urban planners or top-down management based on needs and wants misses several issues, such as their legitimacy, the role that citizens play, and the importance of urban experimentation (Jensen 2011; de Haan et al 2014).

The Legitimacy of policies refers to the extent of acceptance of authority and justification of political power across time (Mees et al 2014, 672). What constitutes to acceptance can be viewed from different academic perspectives such as perceived effectiveness, the extent of democratic procedural input, the fairness of representation and legality (Mees et al 2014; Strebel et al 2019; Bekkers & Edwards 2007). The academic debate on legitimacy as part of government policies has been closely linked to stakeholder analysis, public participation and the extent of democratic processes (Haveri et al 2019; Mees et al 2014; Christiansen 2018; Bekkers & Edwards 2007). One potential strategy used by municipalities for the legitimization of policies and its subsequent acceptance is the responsabilization of citizens. This is defined as "how politicians and governments publicly frame and legitimize a new realm of state intervention dedicated to enticing, persuading and nudging citizens to take responsibility' in producing public value" (Peeters cited in Uittenbroek et al 2019). In terms of sustainable mobility, this means moving the costs and responsibilities to citizens thereby decreasing the burden on the government. An example of the role of legitimacy within urban politics of mobility is the case of congestion charges in Stockholm. The emphasis on public support for the congestion charges led to the avoidance of confrontation and a subsequent watering down of the policy which did not positively contribute to improving urban mobility (Isakson & Richardson). Therefore there is a need to evaluate the mobility policies to identify the basis of their legitimacy and the question why In terms of real-world political decisions are being made. Legitimacy is relevant because transitions to sustainable mobility are high stake issues – it touches upon diverse and competing interests present in urban politics. The literature regarding policy change theories such as ACF (Action Coalition Framework) indicates how politics is shaped but misses the practical implications of projects and policies. This research aims to provide insights into what happens within urban politics in the context of mobility.

Linked to the issue of legitimacy, is the role of citizens within urban politics. Mobility policies and projects are built on complex transportation models that are difficult to comprehend for average citizens. This lack of understanding of citizens behind the political decision of policies and projects can negatively influence their legitimacy (Mees et al 2014). In the case of emission zoning, for example, it might be unclear to participants how and why certain changes in road pathways are necessary to reroute cars. The basis for policymakers in this instance would be complex emission and traffic models. Likewise, extensive principal plans such as Smart city may be difficult to fully comprehend but have a severe influence on citizen's lives in the future. The concept of smart city is ambiguous but consists of several key elements. Bolivar indicates that in terms of governance, smart cities consist of resource management, transportation and urban infrastructure, quality of life in urban space, governmental involvement and economic factors (2015, 4). However, this definition misses the role of citizens and the influence of politics for future decision making. The implementation of smart cities and the role of legitimacy can be perceived as a different issue to be solved through effective implementation (Ruhlandt 2018; Bamwesigye & Hlavackova 2019) or as a core issue not yet fully understood (Navío-Marco & Anand 2018; Kummitha et al 2018). Meaning that there is a gap in understanding the politics behind experimentation and their role in deciding mobility policies and projects.

This means that while there is some research on the various issues in isolation (legitimacy, experimentation and role of citizens) there have been no attempts by scholars to provide an integrated perspective on the politics of urban mobility. This thesis aims to both provide new insights on each issue and to combine them in a new integrated perspective on the politics of urban mobility. Within innovation literature, the term policy mix has been used to provide such an integrated perspective on innovation policies (Rogge et al 2016; Edmondson et al 2019; Flanagan et al 2011). To analyse and evaluate the politics of urban mobility policies, the term policy mix can be used to fill the gap in urban politics literature and provide an integrated perspective.

1.3: RESEARCH AIM

This research aims to **contribute to the academic discussion of sustainable mobility by providing an integrated perspective on the urban politics of mobility that both describes real-life political decision making within the four cities in the Dutch Randstad metropole and evaluates the legitimacy of governmental policies between 2008 and 2019.** The main research object is the study of governmental policies within each municipality. It is, therefore, necessary to assess what happened within potential sites of conflict and contestation and to what extent the governmental policies were legitimate. This requires the formulation of frameworks based on academic literature for the identification of the policy mix and the evaluation of the legitimacy. The research question for this study is, therefore:

What policy mix can be identified in regards to urban mobility in the Randstad area of the Netherlands between 2008 and 2019 and to what extent are they established on a legitimate basis?

This research question is further subdivided into the following 5 sub-questions:

1. *What are the relevant analytical and evaluation categories to systematically describe urban transportation policies and their political dimension?*
2. *What sub-criteria and indicators for analysing and evaluating the legitimacy of these policy mixes can be derived from literature from the fields of governance literature, in particular legitimacy and transition management literature?*
3. *What has been the local policy mixes in regards to sustainable mobility employed in the Dutch Randstad Metropole between 2008 and 2019 and which specific initiatives and projects turned out to be sites of urban politics?*
4. *To what extent were the governmental policies regarding sustainable mobility between 2008 and 2019 legitimate according to the sub-criteria identified in response to sub-question 3?*
5. *For discussion: what key lessons can be learned from this evaluation about urban politics, mechanisms to influence urban politics processes and the role of legitimacy therein?*

These questions will form the basis for the research framework and the necessary steps required to answer the research question. The first sub-question will be answered in chapter 2 according to the analysis of the bodies of literature. This results in the overview of relevant categories for both the description of governmental transportation policies and the evaluation of their legitimacy. The second sub-question will also be answered in chapter 1 based on the previously identified categories. The third sub-question will be answered in Chapter 3 based on the analysis framework and newspapers articles. The fourth sub-question is answered in chapter 4 and results in an overview of each municipality's extent of adherence to the identified legitimacy evaluation criteria. Lastly, sub-question 5 is answered in Chapter 4 based on the previous evaluation and leads to an overview of key lessons from the comparison.

1.3: RESEARCH FRAMEWORK

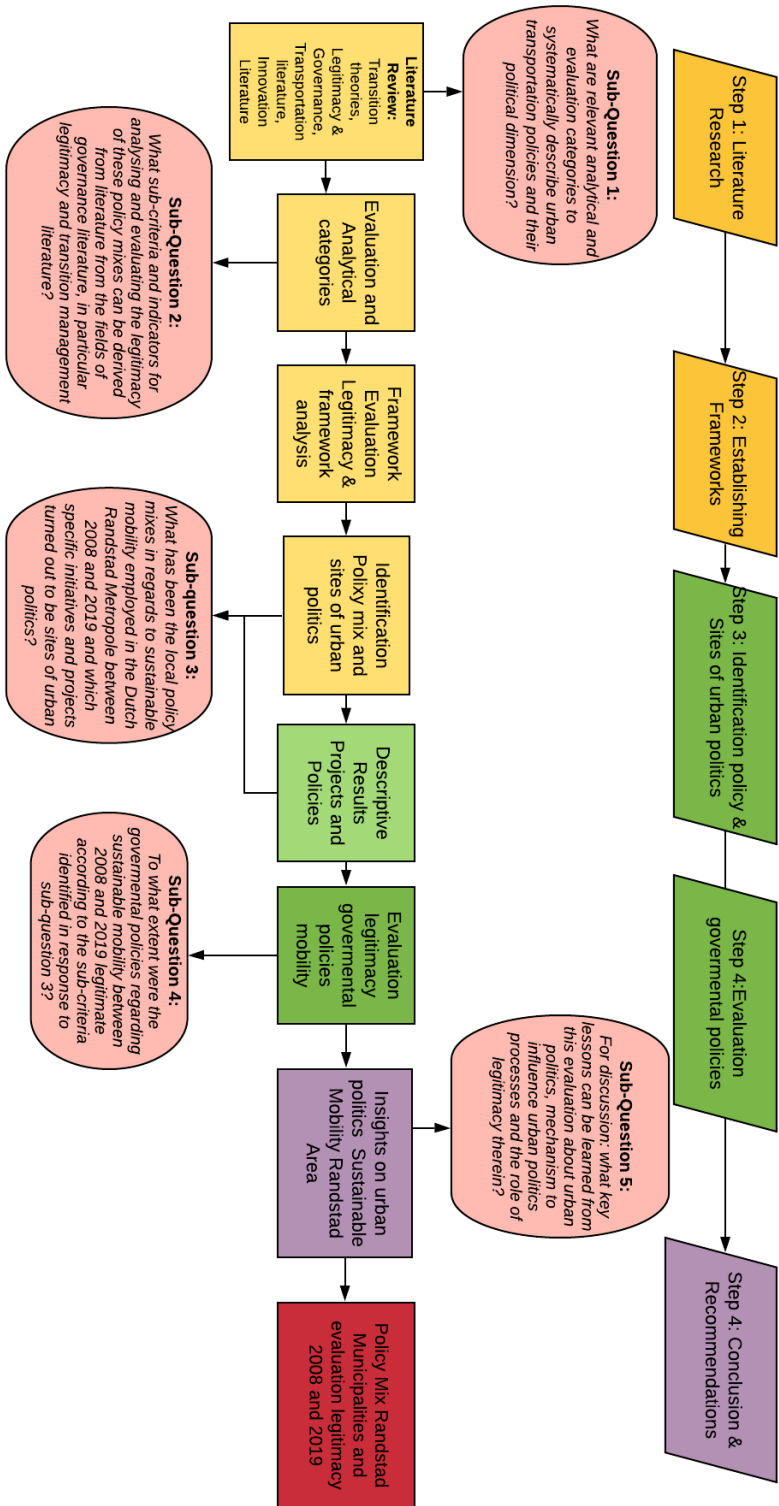


Figure 1: Research Framework

The technical design of this research focusses on the empirical context of the four largest municipalities in the Dutch Randstad and their mobility policies. The conceptual design is descriptive in terms of sites of urban politics and governmental policies while evaluative in terms of legitimacy. This research consists of five steps: A literature review, the establishment of frameworks, identification of sites of urban politics, evaluation of governmental policies and the conclusions & discussions. The first step consists of identifying relevant categories for both describing governmental policies and evaluating their legitimacy. The second step is to establish a framework for analysis and evaluation based on these categories. The third step is to use the framework of analysis to describe governmental policies and sites of urban politics. The fourth step consists of evaluating the legitimacy of governmental policies and indicating what key lessons can be learned regarding the urban politics of mobility. The final and fifth step consists of a conclusion that consists of a recap of the previous steps and the answer to the main research question. Lastly, based on the conclusion recommendations and topics of further interest are integrated into the discussion section.

2: CONCEPTUAL FRAMEWORK ANALYSIS AND EVALUATION OF LEGITIMACY

In this chapter, the theoretical framework will be established based on literature reviews for both the analysis of urban mobility and the evaluation of its legitimacy. Based on the literature reviews, relevant categories will be identified. This leads to the sub-questions:

1. *What are relevant analytical categories to systematically describe urban transportation policies and their political dimension?*

This chapter starts by explaining the core literature source and the concept of *policy mix*. It then further described the limitations of the concept and how other bodies of literature can fill in the gaps in potential analytical categories. This leads to the second sub-question of this chapter:

2. *What sub-criteria and indicators for analysing and evaluating the legitimacy of these policy mixes can be derived from literature from the fields of governance literature, in particular legitimacy and transition management literature?*

This question will be answered based on the categories identified and used to establish both the evaluation framework and analytical framework used for describing the governmental policies of transportation in the Randstad.

2.1: POLICY MIX LITERATURE

In order to analyse the politics of governmental policies regarding urban mobility, several relevant building blocks have to be identified. The basis for this analysis and the evaluation is the concept of policy mix. The term policy mix is predominantly used in policy innovation literature with a focus on different elements. Flanagan et al indicate that it is only the mix of instruments used to foster innovation while Edmondson et al further describe the policy mix as consisting of governmental strategies (2011; 2019). Rogge et al differ from Edmondson's definition by extensively defining policy strategy, instrument mixes and by adding additional components such as characteristics, dimensions and policy processes (2016). Policy mix as a concept is a good starting point to study urban politics because it provides a wide number of relevant categories that can be used as building blocks to answer the first sub-question: *What are relevant analytical categories to systematically describe urban transportation policies and their political dimension?* The concept of policy mix moves away from analysing a single instrument while simultaneously involving the role of politics responsible for real-life decision making (Edmondson 2019 et al; Flanagan et al 2011; Rogge et al 2016).

The framework by Rogge et al is chosen as the basis for identification of the policy mix and a key component for the evaluation of legitimacy because it is a comprehensive compilation of various definitions in academic literature (2016). Alternatives such as Flanagan et al's model, emphasize the role of actors through policy beneficiaries, implementation agents, target groups and policy entrepreneurs (2011). Using agency at the centre of policy mix analysis does not lend itself to the evaluation of the legitimacy of the policy mix. Edmondson et al model analyses dynamic interactions of the social technological system, such as resource effects, institutional effects, and interpretive effects. The interpretation of policy mixes and their effects is of importance to the analysis of policy mixes and evaluation of legitimacy because it explains changing visions, expectations and their influence on policy implementation. The perceived shortcomings of instruments or strategies influence stakeholder's capabilities and lead to the inconsistent appliance of instruments (2019). The perceived inconsistency can negatively impact the political will to achieve objectives and therefore influence both internal and external legitimacy. The framework emphasis on agency and focus on feedback mechanisms means that

it is unsuited for analysing and evaluating the policy mix of sustainable mobility in the Randstad. Rogge et al's framework includes consistency of elements as criteria for analysing and evaluation of the policy mix and the role of policy visions in the concept of principal plans. The concept of principal plans for example accurately encapsulates policy frameworks such as smart city with their overarching purposes (2016). The emphasis in this research is on identifying the policy mix and evaluating the legitimacy of governmental policies. The framework's building blocks are shown in the figure below:

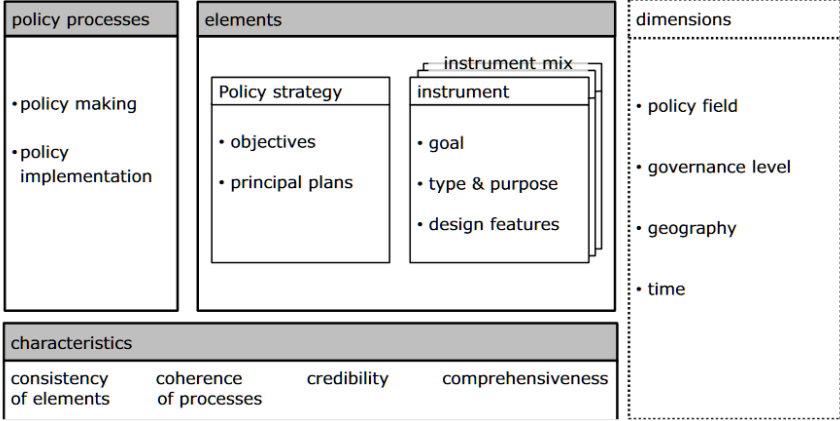


Figure 2: Building blocks of the extended policy mix concept. Figure from Rogge, Karoline S., and Kristin Reichardt. "Policy mixes for sustainability transitions: An extended concept and framework for analysis." *Research Policy* 45.8 (2016): 1629.

As indicated by figure 2, the building blocks consists of four main components: Elements, policy processes, dimensions and characteristics. *The elements* are at the core of policy mixes and indicate the use of the policy instrument mix and the policy strategy.

The policy strategy indicates the end and means of the strategic process i.e. output. This means the combination of policy objectives and the principal plans for achieving them. *The policy objectives* are long-term targets with quantified ambition levels and can be based on a vision of the future. The *principal plans* are general outlines such as roadmaps, guidelines, frameworks and action plans describing the means to achieve the policy objectives.

The second component of elements consists of the **instrument mix** divided up in *goal*, *type and purpose* and *design features*. These relate to the concept of input discussed in the model by Mees et al and are contested by the interest of the general public or particular groups (2014). The core element of instrument mixes is that instruments rarely operate in isolation. Instruments interact are modified and establish interdependency between each other influencing the realization of policy objectives. The term goal used here is specified to the purpose of an instrument. The *type and purpose* of the instrument are divided up in economic instruments, regulation and information to deal with technology push, demand-pull and systematic concerns. The *design feature* is distinguished by the length, stringency and target actors.

Rogge et al also integrate four other elements within the instrument mix such as flexibility, differentiation, depth, predictability and level of support. The depth means the extent of the innovation incentives integrated within the instrument. The differentiation means to what extent the instrument distinguishes between different technologies, sectors and geographical location (spatial elements). Rogge et al indicate that technological specificity is particularly important to analyse when looking at the innovation policy mix. The policy chosen can be neutral in its technological design (co2 tax and environmental zone) but in reality, championing electric cars due to their designation as emission-free (2016, 96). When looking at instruments and tools used in the policy mix for sustainable mobility it is therefore important to specify whether they are designed for championing one technology over the other. The flexibility covers the extent innovators are allowed to freely choose their way of compliance with the instrument. The predictability is the extent of certainty attached to the instruments direction,

rules and timing. An example of relatively predictable instruments is parking prices. By increasing the costs of parking, citizens are less likely to park within the city centre and more likely to look for alternative means of transportation or P&R's outside the city centre. The stringency of instruments is further divided up in 6 components but these are specifically related to innovation (Rogge et al 2016).

The policy process definition used in the framework indicates: "The political problem-solving process among constrained social actors in the search for solutions to societal problems – with the government as the primary agent taking conscious, deliberate, authoritative and often interrelated decisions" (Rogge et al 2016, 1625). Within this process, policymakers are part of a cycle in which they experiment and analyse problem-solving solutions resulting in policy learning. Within the framework, this building block is split up in *policymaking* and *policy implementation*. Within the policy process, they stress the importance of the complexity and uncertainty surrounding social-technological transitions. It is therefore important to identify the extent of policy learning across time by enabling participatory processes of envisioning, negotiating and experimenting. Policy implementation is defined as the arrangements made by authorities and other actors for putting policy instruments into action. Both within policymaking and implementation legitimacy is a particularly important component for realizing the full potential of instruments.

The **characteristics** consist of the consistency of elements, coherence of processes, credibility and comprehensiveness. The *consistency* is how well various elements of the mix are aligned with each other in the sense of synergy and lack of contradictions. The coherence of processes is the synergistic and systematic policymaking and implementation processes contributing – either directly or indirectly – towards the achievement of policy objectives (Rogge et al 2016, 1626). This can be achieved through communication networks, coordinating structures and extensive strategic planning. The *credibility* of the policy mix is based on the commitment of leadership, degree of use of independent organizations and operationalization of targets. This indicates the commitment to the policy mix and the extent of failed projects and (lack) of dedicated resources. The *comprehensiveness* is the extent of the degree in which policies address market failure, institutional failures and bottlenecks. As indicated by Rogge et al, a comprehensive instrument mix may address all three instrument purposes of technology-push, demand-pull and systemic concerns (2016, 1627). Lastly, *coherence* indicates synergistic and systematic policy processes achieved through strategic planning, coordinating structures and communication networks. Rogge et al further differentiate between direct and indirect coherence. Direct coherence is the influence on the behaviour of actors and the performance of the policy mix while indirect effect indicates the contribution to the creation and consistency of the policy mix.

The dimensions indicated in the framework consists of the policy field, governance level, geography and time. The policy fields mentioned here consists of the domains of energy, climate, innovation, technology, science, industrial and transition policy. Rogge et al indicate that analysing policy mixes across policy fields is important due to internal and external inconsistencies and incoherencies rendering them ineffective. This means that one mix aimed at stimulating energy innovation influences the mobility policy mix in unforeseen and incoherent ways. The governance levels consist of vertical and horizontal levels. The vertical level is between for example the EU and its member's states or the national government and the municipalities. The horizontal levels indicate various departments on the municipal level. The geography indicates the space in which the policy mix originates. Lastly, the dimension of time indicates the change, amendments and interpretations across policy stages.

While the framework proposed by Rogge et al integrates many useful elements from policy mix and transition management literature it requires adaptation to analyse and evaluate the legitimacy of sustainable mobility. Firstly, the framework was mainly intended to evaluate policy mixes of (technical) innovation policies while this research aims to identify and analyse governmental policies of urban mobility. Urban mobility is linked with innovation management through system breaking technical solutions. However, technical innovations do not necessarily lead to sustainable mobility and not the

only relevant component. Finally, the policy mix framework has the capacity but not the purpose to evaluate the legitimacy of policies.

That being said, the policy mix literature has three relevant categories for evaluation and two for the analysis of urban transportation policies and their political dimension. For the evaluation of legitimacy, the three characteristics of *consistency*, *comprehensiveness* and *coherence* will be used as building blocks for the evaluation framework. The *coherence* requires additional linkage with experimentation for both analysis and evaluation to fully encapsulate urban governmental policies. The definition of *policy process* used in Rogge et al's framework while relevant does not describe the legitimacy of governmental policies. For the analysis framework, the concepts of *instrument mix* and *principal plan* will be used to indicate the vision and policy implementation of governmental mobility policies. However, in order to fully answer the first sub-question, additional insights for criteria of legitimacy is required to include the politics of experimentation and the role of stakeholders.

2.2: GOVERNANCE & LEGITIMACY LITERATURE

As previously indicated, legitimacy as a concept has not been integrated into the framework proposed by Rogge et al. The academic debate on legitimacy as part of governance policy, has been closely related to stakeholder analysis, public participation and democratic processes (Haveri et al 2019; Mees et al 2014; Jagers et al 2016; Christiansen 2018; Bekkers & Edwards 2007). In regards to the legitimacy of policies, elements indicated by multiple scholars can be distinguished (Mees et al 2014; Bekkers & Edwards 2007; Strebel et al 2019). The first element that can be identified is that the legitimacy of a policy can be justified based on the lawfulness of the decision derived from legality. The second element is the extent of the justness of a policy and its acceptance as a "good" policy. Lastly, the third element that can be identified is procedural legitimacy; the extent of the correct application of the rules and the extent of fair representation during the interactive policymaking process. (Bekkers & Edwards 2007). The extent of acceptance of policies is a crucial element of output within procedural legitimacy. What constitutes to acceptance can be seen from different academic perspectives such as perceived effectiveness, the extent of democratic procedural input, the fairness of representation and legality (Mees et al 2014; Strebel et al 2019; Bekkers & Edwards 2007). There is, however, a relative lack of research and examples of the evaluation of legitimacy in regards to sustainable mobility. Academic literature, however, does provide important context in regards to the role of legitimacy in policies regarding policy problems such as mobility justice (Kębłowski et al 2019b; Tønnesen et al 2019; (Börjesson & Kristoffersson 2015; Mazepus 2018). Legitimacy in regards to the implementation of Smart City and MaaS is given particular attention due to the current uncertainties and issues in regards to legitimacy. Academic literature on procedural legitimacy especially only focusses on specific policies such as congestion pricing or emission zoning instead of urban mobility as a whole. Procedural legitimacy is, however, an important perspective that can be integrated into the concept of the policy mix. Four relevant categories can be identified in regards to the evaluation of legitimacy:

1. *(Stakeholder) Input*
2. *Quality of Deliberation*
3. *Quality of Participation*
4. *Output: Acceptance of responsibilities and outcome*

In table 1, Mees et al operationalize the *input*, *throughput* and *output* into four distinguishable criteria for flood protection (2014, 674):

Input	Throughput (Quality of	Throughput (Quality of	Output
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	participation)	Deliberation)	
The extent to which all interests at stake are equally represented in regards to sustainable mobility	The extent of influence of relevant stakeholders on the policy process and the ability to propose alternative solutions	The extent of open deliberation between stakeholders and based on mutual understanding	The extent of stakeholders' acceptance of outcome and division of responsibilities.

Table 1: Procedural Legitimacy framework Mees et al 2014

As shown in table 1, *the input* relates to the public hierarchical arrangements in which representation of the citizens is achieved through indirect representatives whose decisions reflect their political viewpoints (Mees et al 2014). Indirect representation is necessary because the extensive representation of "the people" in terms of numbers is unrealistic and economically impossible (Dryzek 2001). The input, however, can be influenced by Interest groups through lobbying. An example of this is the electronic car producers aiming to push their products as the primary solution for the realization of the transition towards sustainability. Likewise, indirect representation leads to concerns that only existing power relations will be represented. In terms of sustainable mobility, this is especially an important concern due to the dominance of some actors like the automobile and the IT industry framing the transition in their technological specific pathways. Interests of other stakeholders might, therefore, be underrepresented. Finally, short term interests versus long term interests might lead to ineffective policies such as the placement of low-quality re-charging stations for electronic cars to reach quota's and increase accessibility for citizens (Majone 1996). These stations, however, are unlikely to be effective in the near future when larger batteries require faster-charging stations. Furthermore, they lead to electronic cars occupying sparse parking space for longer periods and removing them is costly which leads to a waste of resources. The input of stakeholders within the policy process is an important criterion for the legitimacy of governmental policies because it indicates stakeholder involvement in the planning process and whether they were equally represented. It is therefore important to analyse the extent of their influence and position in the creation of policies during the last 11 years.

The *quality of participation* is related to the quality of rules, fairness of procedures and meaningful participation. This means the extent to which stakeholders truly can affect policies during the policy process. Issues arise when participation is used by government officials as window dressing or "tokenism" to legitimise decisions regarding mobility (Mees et al 2014). This can lead to the use of referendums that are ultimately discarded or purposely not using stakeholder input that contradicts the agenda of the municipality. The increased pressure can lead to a deficit of legitimacy causing temporary stops of a project or increased costs due to lawsuits and lack of further cooperation by opposing stakeholders.

The *quality of deliberation* indicates to what extent there're is an open exchange of arguments among participants (Mees et al 2014, 673). A key issue of deliberation is the extent to which stakeholders can understand complex information and the rationales behind decision making. This is particularly true for citizens which for complex projects might be unable to fully understand the complexity leading to increased resistance. However, this view might also be abused by dominant actors to ignore the consultation of citizens. This also makes it either difficult for some stakeholders to recognize the legitimacy of governmental policies or makes them susceptible to blindly accepting them (Wulfhorst & Klug 2016). The role of civil society through political workgroups, NGO's and citizen interest

groups is therefore important for increased representation outside dominant governance/private actors. Both the quality of participation and deliberation described by Mees et al are relevant criteria for evaluating governmental policies because they follow the policy process indicated by policy mix literature and fill the gap of outlining the role of stakeholders during governmental policies.

The output is based on the actual and perceived effectiveness of the policy in terms of goals and problem-solving. For this research, the perceived effectiveness is defined as the acceptance of stakeholders regarding the policy or project result. This also includes the acceptance of distribution of responsibilities among private and public actors regarding policies of sustainable mobility. While the model is intended to evaluate procedural legitimacy, the policy process of input, throughput and output can still be used as a basis for evaluation of projects and policies (Baumann & White 2015, 35). The evaluation of governmental urban mobility policies is based on the output of the procedural policy process.

Other academic literature indicates the role of public support and the perception of what constitutes as a "good" policy (Isakson & Richardson; Börjesson & Kristoffersson 2015; Kębłowski et al 2019a). An example is the congestion charges in Stockholm and Goteborg. In the case of the Stockholm congestion charges, the emphasis on public support led to the avoidance of confrontation and a subsequent watering down of the policy which did not positively contribute to improving urban mobility (Isakson & Richardson 2009, 256). While in the case of Goteborg the policies were implemented after those of the municipality of Stockholm based on investment grants, not public support. The policy was sold to the public as an environmental measure while in reality, it was primarily used as a way to finance future infrastructure projects. The public saw through the cloaking of the measure and turned against the governmental policy. Furthermore, the hurried process of policymaking led to a lack of effectiveness for the implemented plans for the Goteborg West Link. While the stakeholders realized the lack of effectiveness, they were unwilling to renegotiate the agreement. The procedural legitimacy was further hampered by a lack of public consultation during and after the negotiations and an unwillingness to communicate. This caused the council to lose in the next elections and led to a signed petition in 2014 which indicated that 57% of the public was against congestion charges (Börjesson & Kristoffersson 2015). Public support for the Stockholm charges was high due to the involvement of the public through a binding referendum before implementation. Furthermore, the congestion charges in Stockholm were intended to reduce emissions and traffic not finance infrastructure (Börjesson & Kristoffersson 2015, 144). This builds on the output criteria described by Mees et al on what constitutes as effective governmental policy both actual and perceived and further highlights the importance of evaluating legitimacy.

Another different example on the role of both perceived and actual effectiveness is the pedestrianization of the inner city in Brussels. This example shows how a municipality can also use sustainable mobility to move forward other goals such as gentrification. Currently, a large number of people in the inner city have low-income and do not own private vehicles or bikes. The public transportation system (most notably busses) are necessary to enable mobility from one space to another for these citizens. The proposed plans would ban busses but continue to allow private cars to use the roads and therefore only selectively reduce emissions. In terms of legitimacy, the project showcases how the sustainable mobility paradigm can be used to create support for a project which does not substantially reduce emissions but does increase the inequality of movement (Kębłowski et al 2019b). Furthermore, the project indicates that within urban politics, acceptance of stakeholders can be high but not inclusive. According to Tønnesen et al, inclusive networks and participation can lead reduced effectiveness of sustainability policies due to increased bureaucracy. Likewise, comprehensive processes

in governance networks/structures while positive for a wide number of reasons, also lead to slower decision making (2019, 134). Therefore there is a need to evaluate the legitimacy of mobility policies and the question why in terms of the real-world policy, decisions are being made and how authorization is given. Legitimacy is therefore especially important in conflict situations that might arise in mobility projects (Bond et al 2018). These examples show the positive and negative influence of (procedural) legitimacy for sustainable mobility. Because of both positive and negative role of inclusivity in terms of input and output and its difficulty to integrate it in the concept of policy mixes of urban mobility, it is not included in the criteria for the evaluation of legitimacy. Municipalities are unlikely to indicate a lack of inclusivity within policy plans and newspapers show a biased view on what constitutes as inclusive. This does not mean inclusivity is not an important element of legitimacy but that it is difficult to analyse and evaluate for this research. However, another category can be identified that is both connected but different to inclusivity, and important when looking at the proposed category of comprehensiveness:

5. *integration of communal interests*

The *analytical category of communal interests* is an alternative that still touches on inclusivity while being more easily linked to the policy mix. The commoning of mobility is a response to the problems created by framing mobility in terms of scarcity and austerity. According to Nikolaeva et al, to make the politics more inclusive for low carbon solutions, a reconceptualization of mobility as commons is required (2019). This means establishing mobility as a common pool resource through community-owned transport, communal decision making and increasing the awareness of the social production of mobility and its power relations. As stated by Nikolaeva et al: "*Commoning mobility can, therefore, be understood as a process that encompasses governance shifts to more communal and democratic forms while also seeking to move beyond small-scale, niche interventions and projects*"(2019,353). The inclusion of mobility as commons means taking into account the process in which authorization is given to private and public actors. In terms of input, this means, whether the legitimacy of policy and the principal plan has taken into account communal needs in addition to the logic of scarcity and austerity of mobility. Furthermore, within this category, the extent of governmental pushes to entice citizens to take over their responsibility in producing public value in for example transportation is taken into account (Uittenbroek et al 2019). In terms of sustainable mobility, this means moving the costs and responsibilities unto citizens to decrease the burden on the government. While the responsabilization of citizens is not used as a criterion, it is taken into account when evaluating the governmental policies based on their actual effectiveness and analysed when looking at the municipal vision of urban mobility. Another concept linked to communal needs is distributive fairness. This means the realization of achieving common interests based on society's equality, equity and need. It is connected to the outcome of policies and their extent of fair distribution and achieving the communal interests (Mazepus 2018). In the case of mobility, the "needs" are primarily the realization of reduced time spent on moving from point A to B and the affordability & accessibility of transport and public health. These needs can be synergetic with sustainability targets in the case of public health and emissions.

In conclusion, the governance & legitimacy literature offers five analytical categories that build on the policy mix framework. For the evaluation of legitimacy these consists of the procedural legitimacy indicators of (stakeholder) input, throughput and output (Mees et al 2014). For the analysis of governmental policies, the inclusion of communal interests is linked to the criteria of comprehensiveness of the policy mix. Additional categories have to be identified in regards to governmental policies towards experiments and innovation. Both the transition theory literature and innovation literature indicate

some relevant categories specifically in regards to governmental policies of experimentation and innovation.

2.3: TRANSITION THEORY LITERATURE

It is difficult to modulate let alone steer the overarching project of transition in a sustainable direction (Sengers et al 2019). The Netherlands and green energy are mentioned as an example of getting lost in the rhetoric of experiments and cloaking/greenwashing of regime actors. To analyse and evaluate experimentation, it is important to identify relevant categories that integrate various components of innovation. Within transition theory literature, a framework commonly used for both analysis and evaluation is the Transition Innovation System (TIS) (Jacobson & Bergek 2004). Within TIS one relevant category can be identified in regards to the evaluation of legitimacy:

1. *Alignment of relevant actors (Coordination)*

The alignment of relevant actors is an important process for creating legitimate policies (Jacobson & Bergek 2004). Meaning that actors responsible for experiments, are integrated into governmental policies for innovation and are part of a principal plan. An example would be integrating the experiments with share-bikes into the cycling policy plans. Likewise, setting up organizations that facilitate the process of experimentation is another important element responsible for legitimate innovation policies. In terms of analysis another category can be identified in regards to the politics of experimentation:

2. *The acknowledgement of niches*

The importance of experiments and the role of governmental actors is further described by Bergek et al as knowledge development and diffusion, entrepreneurial experimentation and influence of the direction of search (2008). The knowledge development and diffusion relate to a commonly mentioned approach by Dutch municipalities called co-creation (Neuens et al 2013). The direction of search relates to what Kern et al describe as the technological specificity of policy (2018, 221). Policies can either be technological neutral (co2 tax on all vehicles) or technology-specific (lower parking fees for electronic cars). For the analysis of the politics of experimentation, three political acts can be identified: The definition of niches, the direction of change and choices made in the mobilization of resources (Sengers et al 2019). The acknowledgement of niches by governance actors indicates their perspective on the transformative potential. These political acts are incorporated into one category for evaluation:

3. *Building network capacity through broadening, scaling up and deepening*

The direction of change is connected to the direction of search through the political process that shapes a particular niche to conform to their overarching strategies (Bergek et al 2008). An example of would be placing an innovative app for bike renting within the framework of smart city/solutions. The choices made for the mobilization of resources are thoroughly explained by Sengers et al in terms of sub-processes consisting of supporting scaling up, broadening and deepening (2019). Transition experiments analytical emphasis is on three processes: Deepening, Broadening and scaling-up. Deepening means learning about the (restricting) conditions of experiments. The role of municipalities consists of juridical, financial and mental aid and designating space for experimentation. This further includes social learning, providing support overcoming barriers, stimulating adequate monitoring and evaluation. Broadening means learning from related experiments in new contexts. Municipalities can stimulate broadening by providing resources for repeating experiments in radically different contexts, facilitating interaction between experiments, stimulating network building, sharing and linking experiences within adjacent domains. Scaling up indicates learning about regime change and broader developments. It can be stimulated by selecting and supporting frontrunners with the motivation and the ability to scale up.

Furthermore, it means balancing between providing protection from the regime and interacting with regime actors that are willing to change existing structures. *Frontrunners* are considered crucial within transition management as the drivers of societal change i.e. sustainable mobility (Sengers et al 2019, 157). Support for frontrunners is, therefore, an important analytical category in regards to the politics of experimentation.

The sub-processes of entrepreneurial experimentation can be integrated according to the co-evolution perspective that consists of five different perspectives on what defines experimentation within sustainable transitions. The five perspectives consist of transition experiments, grassroots experiments, sustainable experiments, urban experimentation and critique experimentation (Sengers et al 2019). The three perspectives of grassroots, sustainability and urban experimentation are further explained below in table 2:

Grassroots experiments:	Sustainability experiments:	Urban experimentation:
Bottom-up solutions by activists and organizations based on local needs, values and interests of communities. Leads to social innovation and green solutions.	Top-down social-technical initiatives aiming to contribute to the development of transition pathways.	Experiments revolving around living labs and urban climate change experiments.

Table 2: Overview types of experiments Sengers et al 2019

Grassroots experiments refer to bottom-up solutions for sustainable development by networks of activists and organizations. It is a response to local needs, values and interests of communities. It consists of social innovation and the use of greener solutions (Sengers et al 2019).

Sustainability experiments are highly planned social-technical initiatives originating either from governmental involvement or grassroots solutions. These experiments aim to contribute substantially to environmental, social and economic aspects of sustainable development. Often these are steered top-down either through the government or private actors (Sengers et al 2019). Analytical emphasis is on the transitional linkages indicated as important for stimulating sustainability experiments by motivating local capability formation. Therefore contributing to development pathways that differ from traditional growth models. Transitional linkages can be analysed based on a large number of involvement of (international) actors. These three types indicate what kind of experiments exists within the politics of experimentation. However, not all types indicate the legitimacy of municipal governmental policies. Therefore, to analyse the politics of experimentation and to evaluate the innovation capacity, urban experiments are chosen as the main type of experimentation leading to the category:

4. *The establishment and support of living labs*

Both sustainability experiments and urban experimentation can be brought together within Living Labs. This means that for both the analysis and evaluation of legitimacy it is important to take the existence of living labs into account and whether there is governmental support through the previously mentioned sustainability or urban experimentation. Living Labs can further be analysed by looking at a large sample of interventions based on the notion of climate change. Criteria describing living labs consist of being purposive and strategic while recognizing the open-ended nature of socio-technical processes, geared towards mitigation or adaptation to climate change and delivered in the name of an urban community

(Bulkeley et al 2013, 19). These criteria come together in urban living labs across municipalities in The Netherlands¹.

In conclusion, the transition management literature indicates two relevant categories for the analysis of governmental policies and the evaluation of legitimacy. The categories relevant for the analysis consist of the acknowledgement of niches and the existence of living labs. For the evaluation of legitimacy, the alignment of relevant actors and building of capacity are important categories in regards to the politics of experimentation.

2.4: GOVERNANCE & INNOVATION LITERATURE

Smart city as a research object has gained increasingly amount of attention between 2008 and 2018 as a solution to many governance challenges (Hollands 2008; Ruthland 2018; Anand & Navío-Marco 2018; Lyons 2018; Angelidou 2018). Conceptualization of what exactly entails creating and facilitating a smart city remains vague (Ruthland 2018). Six characteristics of policy mixes specified to smart city have been identified by Margo & Wilson, such as the analysis of directional and neutral instruments, multi-level or vertical dimension, the promotion of experimentation and the multitude of actors being both policy-makers and beneficiaries (2018, 6). Smart city in terms of principal plans, in particular, is mired with questions surrounding legitimacy. This can either be seen as a problem resolved through effective implementation (Ruhlandt 2018; Bamswesigye & Hlavackova 2018) or as a core issue not yet fully understood (Navío-Marco & Anand 2018; Kummitha et al 2018; Hollands 2008). One perspective on smart city is that it primarily serves as a strategy to assimilate niches. This means that dominant actors of the structural regime allow niches to exist within the limited framework of experimentation while severely limiting their transformative potential. The Amsterdam Smart City initiative is an example in which Innovative aspects of niches and experiments might still be used through co-optation/cooperation with dominant actors while simultaneously losing any political power (Sengers et al 2019, 842). In order to analyse smart city strategies, it is therefore important to understand the various instruments for analysis and the role of the municipality for evaluation. The first category consists of:

1. *Governance through coordination and stakeholder engagement*

The governance through stakeholder engagement is linked to three governmental roles for the implementation of smart city consisting of coordinator, funder and regulator. The role of coordinator means bringing different interests and stakeholders together to establish new platforms for collaboration. The role of the funder consists of financing infrastructure and demonstrator projects. Lastly, the role of the regulator implies making sure that common standards and regulations are in place (Bolivar 2015). The role of the coordinator is further highlighted by Ruthland who indicates that Information exchange/communication between stakeholders is a highly important governance factor (2018). Another category that is identified for the analysis is:

2. *(Internal) Frameworks used in the formulation of innovation policies*

The establishment of a framework for the formulation of innovation policies can be identified through the use of policy papers. These consists of a principal plan that integrates innovative smart solutions such as car-sharing and bike-sharing. MaaS is often indicated as being sustainable due to more efficient use and integration of various types of transport. In reality, there are several issues both in regards to sustainability and legitimacy arising from service-based models. The model is entirely built on the notion of individual mobility. While car-sharing is more efficient using multiple cars, it is still less sustainable than using the bus, walking or cycling. Furthermore, the service might increase convenience at the cost

¹ Platform Stadslabs 2018

of sustainability (Pangbourne 2018). To increase the legitimacy of smart solutions the establishment of "smart citizens" could lead to a degree of e-democracy with the potential of improving the quality of deliberation (Bohøj et al 2011). Currently, adaptations to governance models by including apps and other direct means of communication through Facebook however have remained largely superficial. In terms of experimentation, three lenses describing different type's environments can be identified: Seedbeds, battlefields and harbours (Torrens et al 2019). The seedbed is an urban environment in which niches are being protected within specific locations with selective characteristics. The role of governmental agencies is to protect the niches against pressures from the outside regime. The two oversights with this approach are that it is assumed that tactic knowledge transfer is confined within that space while codified knowledge transfers over the world. The battlefield environment is one in which political contestation, cooperation and struggle lead to moments of change. This perspective sees the urban environment for experimentation as one without long term development or stable structures. The periods of contention between various (political) coalitions of both governmental actors, NGO's, grassroots organizations and private actors can lead to 'settlements' of relative stability in which collaboration is re-established and interventions become established. Lastly, the harbour lens emphasizes connectivity and networks which are seen as the primary places that create a favourable environment for experiments. It is connected to the push for 'smart cities' which municipalities aim to leverage to improve the image and reputation of their city. Experimentations in this context are initiated top-down with chosen private actors and prescribed guidelines. The lens of the harbour is therefore in particular connected to the category of (internal) frameworks. Another category that is relevant for both the evaluation and analysis is:

3. The use, sharing, availability and transparency of (big) data

Smart solutions and business models based on MaaS (Mobility as a Service) all benefit from information sharing either through open platforms (community-led) or municipal traffic and citizen behaviour data. When smart city was first introduced in 2009, information sharing and selling by municipalities were not perceived by the public as a privacy issue. The introduction of the general data protection regulation (GDPR) directive in 2016 has made this more challenging and undermined the legitimacy of some proposals. Smart city policies, however, are not necessarily linked with sustainable mobility (Lyons 2018). The link between sustainable mobility and smart city is through using technology to generate and share data, information and knowledge that influences decisions. This further results in the use of technology for the enhancement of vehicles, infrastructure and services for the transportation system operators, users and shareholders. However, the issue of looking at mobility in this sense is that it focusses on the growth of mobility and faster movement instead of sustainability (Lyons 2018).

To conclude, the category of governance through coordination/stakeholder engagement in addition to the transparency and sharing of (big) data policies are relevant categories for the evaluation of legitimacy. For the analysis of urban politics and specifically the politics of experimentation, the category of (Internal) Frameworks used in the formulation of innovation policies is relevant. Lastly, the body of literature of governance & transportation management will be analysed for possible categories for both the evaluation of legitimacy and analysis of the politics of urban mobility.

2.5: GOVERNANCE & TRANSPORTATION MANAGEMENT

Transportation literature tends to focus on evaluating the efficiency and effectiveness of governmental transportation policies instead of looking at the policy system/mix. An example of this is the indicators that separate the mobility system into economic and environmental performance (Vlassenroot et al 2015). This leads to framing sustainability only in terms of emissions, the stimulation of walking and support for cycling. Radical changes to the system of mobility are therefore avoided and not primarily evaluated based on sustainability but economic success. Furthermore, within transportation literature mobility is emphasized in terms of individual freedom and choice. This individualization of mobility puts more emphasis on behavioural change of citizens in terms of travelling times, car-usage, car-sharing and walking/cycling and directly links it to the legitimacy of governmental transportation policies (Nikolaeva et al 2017). This leads to the category for the evaluation legitimacy of:

1. *The extent of focus on Behavioural change of citizens*

The emphasis on behavioural change can be also interpreted as stakeholder input or the extent of comprehensiveness of governmental policies. This also relates to the flexibility of the policy mix to adapt to citizen travelling behaviour and the extent to which it is taken into account for the interaction between instruments.

The general Dutch strategy as indicated by the knowledge institute for mobility for governing transitions is adaptive governance². The concepts of adaptive management and governance have been used interchangeably by scholars in the past. Hasselman indicated that either adaptive governance is a pre-condition for adaptive management or vice versa (2017, 2160). Initially, adaptive management was developed to separate the politics from policy and polity to manage delineated social-ecological systems (Voß & Bornemann 2011). It further evolved in a general management approach which is concerned with learning, experimentation and knowledge integration. Policies themselves are positioned as hypotheses that require constant improvement and real-life testing. As indicated by Hasselman, political items such as interests, opinions, and mandates are expected to be left outside of the AM forum due to their potential to provoke conflict, disturb cooperation, and thus foster irrationality. It is assumed that this can be achieved by selecting participants according to particular criteria such as competence, respect, and willingness to cooperate and by obliging them to "leave [their] gun[s] at the door" (2017, 142). This is not in line with democratic participation and deliberation and more aimed at governance through top-down functionalism. The difference with adaptive governance is that it is intrinsically involved with the domain of politics. Adaptive governance is incompatible with rigid legal systems consisting of prescriptive and technical specific laws and demarcated responsibilities that lead to "front-loading" of policies. To offset the restraints of a rigid legal system, experimentation and adaptation are required alongside mechanisms upholding accountability and legitimacy (Hasselman 2017). Based on the adaptive governance approach another relevant category for the evaluation of legitimacy can be identified:

2. *Transparency & Monitoring*

The monitoring of progress is highly relevant when analysing the extent of effectiveness of governmental policies. The transportation management literature defines monitoring as the identification of commitments made, decisions taken, strategies applied, measures adopted, and policy results achieved (Gudmondson 2003). The approach of the previously mentioned adaptive management indicates a strategy responding to emergent properties of complex transition processes (Hasselman 2017). This approach emphasizes visioning, experimentation, monitoring and evaluating and intervening at appropriate moments. For the analysis of governmental policies, adaptive management can be

² Kimnet 2017

integrated in the categories of municipal vision and the politics of experimentation. The issues that can be identified in a transition are coordination, assessment (need for real-time assessment) and intervention (risk of incumbents remaining dominant) (Turnheim et al 2015, 242). The bounded rational model combined with stakeholder input is often applied to mobility management. It emphasizes stakeholder input in various policy-making stages and further indicates a need for transparency from governmental actors (Cascetta & Pagliari 2013).

Lastly, within transportation management, literature standard procedures can be identified for the governance of mobility. One of such examples is "programming by projects". This means that the governance actors use a reference scheme for identifying the relevant connections with the project's subsequent evaluation to assess their technical feasibility, economic convenience, priority level and mode of realization (Cascetta & Pagliari 2013). While this is not a relevant category it does indicate a common approach to the evaluation of mobility based on projects. This is highly relevant when evaluating the legitimacy of transportation policies and can, therefore, be used as a reference when identifying sites of urban politics.

To summarize, the relevant categories for the evaluation of legitimacy consists of the inclusion of behavioural change and the transparency & monitoring of transportation policies. The monitoring of transportation policies can also be used as a relevant category for the analysis based on the commitments made by municipalities.

2.6. ANALYTICAL CATEGORIES BODIES OF LITERATURE

Based on both the policy mix literature and the other bodies of literature the following sub-question can be answered:

What are the relevant analytical and evaluation categories to systematically describe urban transportation policies and their political dimension?

Based on the bodies of literature a total of fifteen categories have been identified. The primary categories are those linked to the policy mix literature and consists of four categories:

1. *Consistency:*
2. *Comprehensiveness*
3. *Coherence*
4. *Policy Process*
5. *(Stakeholder) Input*
6. *Quality of Deliberation*
7. *Quality of Participation*
8. *Output: Acceptance of responsibilities and outcome*
9. *Governance through coordination and stakeholder engagement*
10. *The use, sharing, availability and transparency of (big) data*
11. *The extent of focus on Behavioural change of citizens*
12. *The establishment and support of living labs*
13. *Building network capacity through broadening, scaling up and deepening*
14. *Alignment of relevant actors (Coordination)*
15. *Integration of communal interests*

In addition, six categories relevant to the analysis of transportation policies and their political dimension have been identified:

1. *Principal Plan*
2. *Instrument Mix*

3. *Transparency & Monitoring*
4. *(Internal) Frameworks used in the formulation of innovation policies*
5. *The establishment and support of living labs*
6. *The acknowledgement of niches*

While all these categories are relevant, some are either difficult to analyse and evaluate while others cannot be integrated into the primary framework of the policy mix. Likewise, several categories can be integrated into one due the large extent of overlap. In the next section, these categories will be used to answer the second sub-question.

2.7. FRAMEWORK EVALUATION LEGITIMACY

In this section, the categories identified for the evaluation of the legitimacy of policy mixes will first be integrated and used to establish a framework. In addition, section 2.8 will explain what categories for the description of governmental policies of transportation are used to establish the analysis framework. The second sub-question answered in this section is:

What sub-criteria and indicators for analysing and evaluating the legitimacy of these policy mixes can be derived from literature from the fields of governance literature, in particular legitimacy and transition management literature?

For both the evaluation and analysis of the policy mix, Rogge et al's building blocks are used to integrate the other categories identified in the bodies of literature. The framework proposed by Rogge et al has a wide number of useful elements for analysing and evaluating the legitimacy of policy mixes within the Randstad. The framework, however, requires adaptation for it to effectively analyse and evaluate the legitimacy of urban politics. Because legitimacy is an ambiguous term, a clear definition is required for its evaluation. For this research, the definition of legitimacy is the extent of acceptance of authority and justification of political power across time (Mees et al 2014, 672). Rogge et al's characteristics are to some extent, integrated into criteria for evaluating the legitimacy of mobility policies and projects. These consist of the characteristics of consistency, coherence and comprehensiveness and are integrated into the evaluation framework.

Consistency of elements is subdivided in both criteria of *consistency of municipal vision and governmental layers*. The criteria *consistency of municipal vision* is to what extend the policy mix remains coherent, non-contradictory and aligned with other plans during 2008 and 2019. The link with legitimacy is described by Edmondson as interpretive effects in which a lack of coherent vision can lead to a deficit of political power to achieve policy objectives and projects (Edmondson 2019; Van Engen et al 2013). Likewise, consistency is indicated by White et al, as the continuation of funding, completion of projects and establishment of a clear framework and seen as an important element for the legitimacy of future policies (2013).

The *consistency between governmental layers* is linked to the category alignment of relevant actors and the concept of coordination (Boon et al 2012; Jacobson & Bergek 2004). This evaluation criterion is linked to the concept coordination of multi-level governance actors for the realization of public policy works aimed at solving problems and integration of objectives across different governmental tiers (Hogl 2012).

The criterion *transparency and monitoring* is linked to input legitimacy of expertise and throughput through the insurance monitoring of objective parties (Hogl 2012; Mees et al 2014; Gudmondson; Hasselman 2017; Cascetta & Pagliari 2013; Turnheim et al 2015). It is expected that participation directly influences the transparency of the decision-making process and therefore increase legitimacy (Hogl 2012).

The criterion *Innovation capacity* is based on the integration of the categories of *use, sharing, availability and transparency of (big) data, the establishment and support of living labs* and the *building network capacity through broadening, scaling up and deepening* (Lyons 2018; Bulkeley et al 2013; Sengers et al 2019). The criterion of innovation capacity emphasizes municipal support through organizations tasked with the realization of connectivity between innovation actors. The role of the municipality can consist of facilitation of network building, transnational linkages and use, sharing, availability and transparency of (big) data, pushing grassroots solutions, experimentation by private actors, the establishment of living labs and support through financial aid. The coordination of innovation networks and providing structure and investments leads to enhanced legitimacy of the municipality (Rijnsoever et al 2014; Rogge et al 2016).

Rogge et al's policy process and Mees et al's procedural legitimacy are integrated into the framework through the criterion *stakeholder participation* and combined with Bolivar's governance through coordination and stakeholder engagement (2016; 2014; 2015). This criterion indicates the extent to which relevant stakeholders participated before, during and after the implementation of policies and projects. Furthermore, it includes the quality of deliberation which indicates how the municipality responds to alternative solutions and whether the participation was inclusive or exclusive. Its link to legitimacy is that the needs and wants of citizens and other groups are included in the decision making process during the project and policy and not just a product of municipal technocratic objectives (Cascetta & Pagliari 2013; Ruthland et al 2018; Mees et al 2014). The act of participation in the deliberation process is indicative of consent and therefore increases the legitimacy of governmental policies.

Lastly, the criterion of *comprehensiveness* evaluates the extent of integration of various linked policy problems regarding the mobility policy mix (Rogge et al 2016). Furthermore, it to some extent integrates the category *focus on behavioural change* (Nikolaeva et al 2017; Mazepus 2018; Uittenbroek et al 2019; Dunn & Laing 2017). Behavioural change is linked to comprehensiveness because it can be one of the main links between policy problems. Communal interests as a category can be linked to complicated interlinked policy problems but are difficult to assess for the evaluation of legitimacy based on newspaper articles. Comprehensiveness is seen by Hogg et al as the consistency between policies and the recognition of consequences aggregated into the evaluation through all relevant governmental organizations (2012, 113). The legitimacy of a project or policy is enhanced through its comprehensiveness because it considers alternative solutions and consequences possibly proposed through participation in the input phase. The criteria previously described are indicated in table 3 below:

Criterion	How Understood	Operationalization	Sources:
Consistent Vision Municipality	The extent to which municipalities execute strategies, policies and projects indicated in policy papers.	<p>++: Clear logical continuation of policy plans and a high degree of execution of plans, projects and policies</p> <p>+: Continuation of policy plans but some inconsistencies with implementation.</p> <p>+/-: Lack of consistency between policy plans and low degree of execution of plans.</p>	Rogge et al 2016; Gudmondson 2003; Edmondson 2019
Consistency between Governance Layers	The extent of synergy and coordination of various government layers for the realization of projects and policies in the metropolitan context	<p>++: Close Alignment of goals, resources and strategies for solving mobility problems</p> <p>+: Some alignment of goals, resources and strategies for solving mobility problems. Limited conflict over resources.</p> <p>+/-: Lack of alignment for solving policy problems and continual conflict over resources</p>	Rogge et al 2016
Transparency and Monitoring	The extent to which projects and policies are implemented transparently for the public and their monitoring during and after implementation	<p>++: Comprehensive documentation of the progress of policies, projects and plans during the process.</p> <p>+: Large degree in reporting progress in policy papers and monitoring.</p> <p>+/-: Lack of documentation about progress and a limited degree of monitoring.</p>	Sengers et al 2019; Hogl 2012; Mees et al 2014 ;Gudmondson 2003; Hasselman 2017; Cascetta & Pagliari 2013 ;Turnheim et al 2015
Innovation Capacity	The establishment of organizations aimed at fostering innovation for mobility problems, support for living labs, long term coordination and cooperation with start-ups and front runners	<p>++: Consistent support and connectivity through governance actors or other organizations within the municipality.</p> <p>+: Creation of a limited amount of organizations and functional support for start-ups and living labs.</p> <p>+/-: No establishment of organizations tasked with fostering mobility innovation and relative lack of coordination with start-ups and front runners to tackle mobility issues.</p>	Sengers et al 2019; Bulkeley et al 2013; Hasselman 2017; Voß & Bornemann 2011; Rogge et al 2016; Lyons 2018; Bolivar 2015; Turnheim et al 2015; Rijnsoever et al 2014
Stakeholder Participation	The extent to which relevant stakeholders participated before, during and after the implementation of policies and projects	<p>++: All stakeholders included before, during and after implementation and consideration of alternative solutions.</p> <p>+: Stakeholders included during most of the policy process and inclusion of their argumentation against or in favour of project/policy</p> <p>+/-: Selected stakeholders included in the policy process and limited acceptance of alternative plans.</p>	Cascetta & Pagliari 2013; Ruthland et al 2018; Mees et al 2014; Bolivar 2015; Matti 2009
Comprehensiveness Policies	The extent to which policies and projects consider potential positive and negative effects in relation to other problems/actions	<p>++: Extensive inclusion of possible effects of policy on other areas and Integration of mobility as a whole and relative lack of illogical subdivisions</p> <p>+: Some degree of inclusion of possible negative and positive effects of implementation and limited integration with other policy problems</p> <p>+/-: Strict subdivision of policy problems and solutions. Lack of integration and view on possible consequences of policy implementation</p>	Rogge et al 2016;; Uittenbroek et al 2019; Nikolaeva et al 2017; Mazepus 2018; Dunn & Laing 2017

Table 3: Framework Evaluation Legitimacy

As shown by Table 3, the evaluation of the legitimacy framework consists of six criteria and three different levels (++/+/-). The Netherlands is considered one of the leading countries in transportation and urban planning which means that the grading of legitimacy is on a high scale and does not include a negative rating (Pojani & Stead 2015). In general, the level of ++ means that the municipality has relatively a high degree of legitimacy for that criterion and generally exceeds the norm. When a municipality scores a + for a criterion, it means they have relatively a good degree of legitimacy. Lastly, the level of +/- means that the municipality has taken relatively limited actions to fulfil the criterion.

The primary sources used for the *consistency of municipal vision* are the policy papers written in a request or by the municipality. For the other criteria, a newspaper article analysis and interviews are used for both description and evaluation.

2.8 FRAMEWORK FOR ANALYSIS SUSTAINABLE MOBILITY

In order to evaluate the legitimacy, an analysis of the sustainable mobility system is first required. In terms of analysis, the three chosen components consist of the *municipal vision*, *policy implementation* of sustainable mobility policies and the *politics of experimentation*. *The municipal vision* is based on the concept of the principal plan from Rogge et al that indicates an overarching strategy presented in roadmaps, frameworks and guidelines (2016). It is connected to the category of *transparency and monitoring* in the sense that it identifies what municipalities communicate about their plans to citizens and what stays internally within the organization. Within the domain of sustainable mobility, these consist of overarching strategies for realizing principal plans of a Smart city, car-free city, and bicycle city or emission-free mobility. *The policy implementation* is based on Rogge et al’s concept of instrument mix (2016). Meaning that the overarching strategies consist of several separate policies connected to specific instruments. These instruments will be identified and analysed according to their purpose of fulfilling the objectives stated in the municipal vision. Lastly, there is the category *politics of experimentation* which indicates the extent of policies, decisions and organizations set up to stimulate mobility innovations and experiments. This category is based on the integration of those previously identified within the bodies of literature: (Internal) *Frameworks used in the formulation of innovation policies, the establishment and support of living labs and the acknowledgement of niches*. This category has been chosen because the type of governance for experimentation differs from those of traditional infrastructure projects and to give more insights into the number of experiments and living labs within each municipality. In each municipality when applicable, the kind of environment will be analysed based on the urban experimentation lenses of battlegrounds, seedbeds and harbours (Torrens et al 2019). Table 4 below shows the framework for analysis with the three categories:

Category	How understood	Sources
Municipal Vision	Realization of overarching strategy with specific goals and objectives.	Rogge et al 2016
Policy Implementation	The instruments being used	Rogge et al 2016
Politics of Experimentation	The policies and frameworks used to stimulate experimentation of urban mobility.	Sengers et al 2019; Luque-Ayala et al 2018; Torrens et al 2019

Table 4: Framework for Analysis

As indicated in table three, the analysis of the policy mix consists of three categories *the municipal vision*, *policy implementation* and the *politics of experimentation*. The analysis of these three categories is based almost entirely on the policy plans published or made for the individual municipalities between the years 2004-2019. Some of the earlier plans before 2008 have been chosen because of their relevance to other mobility plans and their role in shaping the municipal vision.

3: METHODOLOGY

This chapter consists of the research strategy in which the motivation behind the case study and scope is explained and how the sub-questions will be answered in this study. In addition, the method for the different kinds of data collected and their contribution will be thoroughly explained.

3.1: RESEARCH STRATEGY

The embedded case study of this research consists of the Randstad area of the Netherlands. Within the embedded case study, a few sub-cases can be identified with their data units (Verschuren & Doorewaard 2010). The sub-cases are the four largest municipalities Amsterdam, Rotterdam, Utrecht and The Hague. The Randstad area and its four largest municipalities were chosen due to the economic importance of the region and the vast developments regarding urban mobility. The unit of analysis for this research is urban politics of mobility in the Randstad. In order to understand the urban politics within the Randstad, further subdivision into research and data objects is required (Verschuren & Doorewaard 2010). The scope 2008-2019 was chosen for this research because multiple developments relevant to the "new" mobility started in 2008. As indicated by Bulkeley & Betsill, the period between 1990 and early 2000s was marked by municipal voluntarism and little to no concrete action on climate change (2013, 10). In terms of mobility, the establishment of overarching principal plans such as smart city, only started being mentioned in The Netherlands in 2009. Furthermore, the onset of electronic cars has only really taken off since 2014. Likewise, the process surrounding policies such as emissions-free zones were started around this year. The year 2019 has seen a wide number of developments within municipalities leading to new action-plans and policy papers being written for the coming next 5-10 years and has therefore been chosen as the end-date. The main research object consists of governmental transportation policies during this time.

The first step of this research has been the literature review which answers the first sub-question: *What are relevant analytical categories to systematically describe urban transportation policies and their political dimension?* The types of literature chosen for answering this question consists of the literature analysed in chapter 2: Policy mix literature, governance & transportation, governance and legitimacy and innovation literature. The policy mix literature was chosen as the start of the literature review because it provides the main components for the analysis and evaluation frameworks. Transportation & governance literature have been reviewed because of their role in Dutch municipal management of mobility policies. The governance and legitimacy literature have been analysed for linked evaluation criteria. The innovation literature describes the role and types of experimentation within the domain of urban mobility for both analytical and evaluation criteria.

The second step has been combining the possible criteria identified in step 1 into both a framework for evaluation and analysis. This leads to the second sub-question: *What are relevant analytical categories to systematically describe urban transportation policies and their political dimension?*

The third step is to use the analytical framework to analyse the individual municipal policy mixes and to describe initiatives and projects that have been either or both internally and externally politically contentious to answer third sub-question: *What has been the local policy mixes in regards to sustainable mobility employed in the Dutch Randstad Metropole between 2008 and 2019 and which specific initiatives and projects turned out to be sites of urban politics?* This is done by using the framework of analysis and researching policy papers of each municipality during the past 11 years. The policy mix is emphasized here because it allows for the integration of multiple elements of governmental policies of sustainable mobility.

The fourth step uses the evaluation framework established in step 2 to evaluate the legitimacy of 'politicized' projects and policies. The sampling of which project or policy is politicized is done based on interviews with policymakers and a newspaper article analysis. A high amount of coverage by newspaper articles means a relative politicized policy or project. This is in order to answer the 4th sub-question: *To what extent were the policies regarding sustainable mobility between 2008 and 2019 legitimate according to the sub-criteria identified in response to sub-question 3?*

Lastly, based on both the analysis and evaluation of each municipality, multiple key lessons will be described to provide further insights into the politics of urban mobility. This leads to sub-question 5: *For discussion: what key lessons can be learned from this evaluation about urban politics, the mechanism to influence urban politics processes and the role of legitimacy therein?*

All of these sub-questions combined will then answer the main research question: *What policy mix can be identified in regard to urban mobility in the Randstad area of the Netherlands between 2008 and 2019 and to what extent are they established on a legitimate basis?*

3.2: DATA COLLECTION & ANALYSIS

The data has been collected according to an inductive approach, meaning that the phenomenon urban politics has been observed within the data units without a clear framework in mind (Verschuren & Doorewaard 2010; Ritchie et al 2013). For this research, the unit of analysis urban politics of mobility has been observed within both primary and secondary sources consisting of interviews, focus group meetings, policy papers, consultancy reports and newspaper articles.

The interviews have been conducted through a semi-structured method in which a limited number of questions were prepared. These questions were aimed at understanding urban politics and its implications for legitimacy from the viewpoint of entrepreneurs, citizen participation groups and policy advisors. The initial list consisted of LinkedIn profiles and emails of 52 candidates that could provide this study with valuable insights. Only two policymakers that were identified through LinkedIn profiles responded by email which meant that other approaches had to be taken. The second strategy was to use the political workgroups in each city related to mobility to both use their input as a citizen participation group and to get contact information on policymakers willing to be interviewed. Most of the workgroups regarding mobility have been absolved within the past 2 years due to a lack of interest or input apart from those in Rotterdam by the Christian Democrats and that of GroenLinks in Amsterdam. The latter was the only one to be willing to have me accompany a meeting and present my thesis. No additional policymakers could be identified this way which meant alternative methods were taken. Direct contacts with each municipality did not lead to any potential candidates but intermediary organizations such as the mobility lab in Rotterdam provided a policymaker willing to have an in-depth interview in person. This meant that the interview list now consisted of policymakers in each municipality that was able to affirm or reject assumptions made on the mobility policies and projects during the past 11 years. Further information was asked on for other potential participants, but all were reluctant to provide additional contacts except in the case of Rotterdam's policymaker.

Two start-ups were also interviewed with their perspective on their relationship with the municipality about facilitating innovation consisting of Ring Ring and Lomboxnet. In the case of Lomboxnet it was a short interview in which they indicated that they were unwilling to divulge details on their ongoing project before the year 2020. Lastly, two citizen participation groups (Kracht van Utrecht and the previously mentioned Environmental workgroup from the Green party in Amsterdam) have been contacted on their view regarding issues of legitimacy. The workgroup of GroenLinks in Amsterdam was interviewed for their view on several (on) going policies and projects in the city. This means that for this research, The Hague and Rotterdam are missing interviews about citizen participation groups. The conducted interviews resulted in data pointing towards political mobility projects, policies and aspects of governance. Several meetings were attended within the municipality of Utrecht and Amsterdam. The

citizen participation groups contacted consisted of protests groups, citizen advisory organizations and political workgroups. Due to the closure of a wide number of these organizations, observations made were limited to the municipality of Amsterdam and Utrecht. The citizen advisory group Kracht van Utrecht led to insights regarding the present proposal for a mobility vision for the municipality in 2020 and the newly drafted vision for the Province of Utrecht. Other provinces were contacted including those outside the Randstad for their vision regarding sustainable mobility but were unwilling to provide a candidate for interviews.

During the time that the interviews were being taken, the overall vision and general policy implementation of sustainable mobility were being analysed. This was done based on policy papers both from the municipality and the knowledge institute CROW. Relevant policy papers were identified according to the overarching strategies of principal plans indicated in the general mobility vision. These consist of air pollution monitoring and evaluation, cycling plans, smart city plans and those of specific policies such as emission zones, electronic car strategies or evaluation of experiments.

Furthermore, the combined insights of the focus groups and interviews led to a newspaper analysis aimed at understanding politically sensitive projects and policies in each municipality. The projects and policies were being analysed through criteria established in the evaluation of legitimacy framework. The newspaper article analysis consisted of using relevant keywords in Lexus Nexus with additional information on projects done through google searches. The definition of politically active projects was based on newspaper article frequency, the extent of the controversy of some projects or data from interviews. The projects and policies were further categorized into three subdivisions of regional infrastructure projects, local infrastructure projects and politics of experimentation. The division of infrastructure into regional and local has been chosen due to the difference in politics and the extent of involvement of other government agencies and the nature of the place-based conflict (Cochrane 2018). The politics of experimentation subdivision was chosen due to the different nature of experiments compared to infrastructure problems and its effect on urban politics (Bulkeley et al 2013). The evaluation of the four municipalities is of relatively equal length except for The Hague. This is due to the inertia of mobility policies within the municipality, leading to relative few notable politicized projects and policies with the notable exceptions of Randstad rail and parking. The Hague also does not have an agenda on innovation and experimentation leading to notable fewer research objects.

Lastly, the results, conclusion and reflection are analysed by the project leader of Kracht van Utrecht to further enhance the discussion.

3.2: RESEARCH ETHICS

All of the interviewees have given permission to have the conversation recorded and their name directly mentioned in this research. At the start of each interview, they also were clarified on the use of the data for research purposes only and in what manner the data will be kept secure. The transcripts have not been shared with any third party. The interviewees were also given the option to have the transcript send to them for further checks on the content. Aside from Jan Korff de Gidts, all interviewee's have indicated that this was unnecessary. At the request of several interviewee's, certain content has been removed and will not be used in the evaluation of the legitimacy related projects and policies. Likewise, meeting with a representative of the municipality in coordination with Kracht van Utrecht and the province of Utrecht have been used as observations, not as interviews. There are also no recordings of these meetings as there was no permission given before the meeting.

4: DESCRIPTIVE RESULTS

In this chapter, the general developments, municipal vision, policy implementation and politics of experimentation in the Randstad area are described. Secondly, the urban mobility governmental policies and sites of urban politics will be analysed in each of the four cities based on policy papers and interviews and to some extent websites. Based on the analysis the following sub-question will be answered:

1. *What has been the local policy mixes in regards to sustainable mobility employed in the Dutch Randstad Metropole between 2008 and 2019 and which specific initiatives and projects turned out to be sites of urban politics?*

The analysis is based on the criteria established for analysis in chapter 2 consisting of municipal vision, policy implementation and politics of experimentation. Furthermore, sites of urban politics will be described in terms of policies, mobility problems or projects.

4.1: GENERAL DEVELOPMENTS RANDSTAD

Within the Randstad, there have been several relevant developments regarding sustainable mobility, that in some cases pre-date the 2008-2019 period. In figure 3 below the travelling behaviour of each of the four municipalities is described for the year 2013:

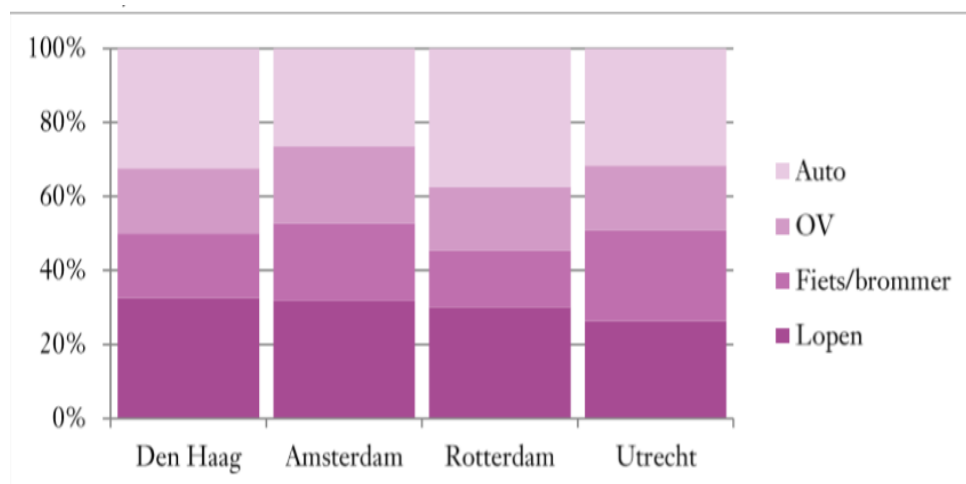


Figure 3: Traveling Behaviour G4 2013 (Den Haag 2015d)

As is indicated in figure 3, in terms of cycling use, the city of Utrecht has the highest degree of cycling followed by Amsterdam. The municipalities of Rotterdam and The Hague are quite similar in terms of cycling and public transport use (OV) but differ in their rate of walking and car usage. Out of all four municipalities, Rotterdam is the city that has the highest car usage. Additional research on the change in travelling behaviour between 2005 and 2015 has been conducted by the Kennisinstituut voor Mobiliteitsbeleid (KiM). In terms of the number of kilometres per citizen, there has been a reduction of the bus, tram, metro (BTM) and general car use between the years of 2005 and 2015 in all (sub) urban areas of the municipalities. Furthermore, there has been a vast increase in train usage and a small increase in cycling and walking kilometres between 2005 and 2015 (KiM 2019, 17). These developments have been the result of a change in citizen behaviour and municipal policies aimed at increasing cycling and reducing car use (KiM 2019). The reduction of BTM is relevant because this is partly the result of the

introduced budget cuts between 2005 and 2015. (Volkskrant 11; OVRP 2019). Successive national government coalitions aimed to streamline and increase the cost-efficiency of public transport and to establish one system (Reiswijzer 2014). The result has been the removal of mainly low-usage regional bus lines and those located near tram-stops (OVRP 2019). Tram stops have also been removed in the urban areas of Rotterdam, The Hague and Amsterdam. These budget cuts, however, were pushed by the national government after the credit crisis to reduce the costs of public transportation (Volkskrant 2011). In figure 5 and 6, it is indicated that the number of funds spent by each government layer primarily spend on infrastructure and secondly on the maintenance of public transportation services.

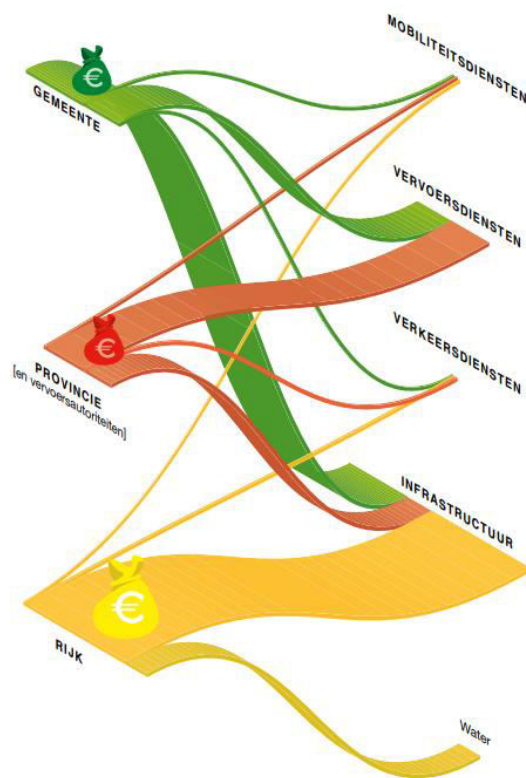


Figure 4: Source: RLI Budget 2018

Vastgestelde begrotingsstaat van het Infrastructuurfonds voor het jaar 2020 (bedragen x € 1.000)

Art.	Omschrijving	Ontwerpbegroting		
		Verplichtingen	Uitgaven	Ontvangsten
12	Hoofdwegennet	3.037.025	2.762.695	116.173
13	Spoorwegen	1.880.706	2.078.808	181.758
14	Regionaal, lokale infrastructuur	48.264	181.250	
15	Hoofdvaarwegennet	973.825	994.399	154.888
17	Megaprojecten Verkeer en Vervoer	921.616	451.893	46.141
18	Overige uitgaven en ontvangsten	2.422	2.287	
19	Bijdragen andere begrotingen Rijk			6.046.994
20	Verkenningen, reserveringen en investeringsruimte	75.215	74.622	
Totaal		6.939.073	6.545.954	6.545.954

Figure5³ : Overview Budget Infrastructure Fund

The definition of the mobility services are apps and websites indicated in figure 4, is investments made to improve the accuracy of travel data for citizens and marketing campaigns to change travelling

³ Source: Verkeersnet 2019

behaviour to reduce congestion at key areas. The lack of government investments to facilitate innovation means that their strategies are mainly aimed at small pilots and bottom-up solutions financed by private partners. The realization of urban mobility projects and policies is based on the vision and instrument mix used by the municipalities. The emphasis during the past 11 years has been on maintaining and investing in tram/train rails and car roads. The column megaprojects are primarily regarding the construction of highways and to a lesser extent tram-lines. The relative lack of funding for regional and local infrastructure is partly the result of the division of responsibilities among governmental layers. The province, together with the municipalities are responsible for regional investments. Each municipality is connected to a regional organization tasked with coordinating and mediating regional agenda's. For the municipalities of Rotterdam and The Hague, this organization is the MRDR (Metropolitische Regio Den Haag en Rotterdam). In the case of Amsterdam, the regional organization is the MRA (Metropolitische Regio Amsterdam). The municipality of Utrecht is connected to the regional body of U16. In practice, the regional organization's influence on mobility projects relies on the municipalities and province willingness to jointly both finance and coordinate projects and policies. In the case of Rotterdam and The Hague, the MRDR since 2014, has a positive influence on effectively sharing the costs of projects and establishing a unified lobby towards the national government for additional resources (Polhuijs 2019). The local infrastructure such as bicycle roads and experimentation are mainly the responsibility of the municipalities. Due to this division, the politics for regional projects differs from that of local projects. Likewise, due to the nature of experimentation, politics also differ from both local and regional infrastructure in the sense that it is more closely linked to bottom-up processes.

Therefore, in order to analyse urban politics comprehensively various kind of politics of mobility have to be included. These are subdivided in the politics of experimentation, local infrastructure and regional infrastructure. These differ on both their territorial boundaries but also on the role of various stakeholders most notably the role of the province and national government. That being said, some experiments might be indirectly led by the national government such as the 8 MaaS projects across various cities in the Netherlands including Utrecht, Rotterdam and Amsterdam⁴. The difference between local and regional infrastructure is often the scale, resources and different stakeholders included. The Randstad rail tramline project has, for example, different stakeholders stretching over multiple cities and involving various coalitions. In the case of local infrastructure the areas where conflict arises specifically bound to a certain space in the city. While in the case of regional infrastructure politics manifest itself more based on the differences in perceived benefits and legitimacy across territories. The previously mentioned logic of mobility and the view of what constitutes as urban also comes into consideration here. Emphasizing urban needs and wants can lead to tension between the municipality and the region (Kracht van Utrecht 2019b). Certain projects such as tramlines might be built on the idea that there is a demand for improved access to the coastline for leisure activities while simultaneously improving access to the urban centre itself. On paper, such projects cater to both the suburban and urban by creating multiple stops across villages instead of only a direct tram towards the coastline.

The politics of experimentation differs from traditional infrastructure projects due to several reasons. The benefit of experiments is their ability to be tested in an either closed or open environment with radical ambitions while being rooted in the mobility system itself (Luque-Ayala et al 2018). Experiments can originate from subsidies, private-public collaborations, municipality led efforts and knowledge institutions. The definition of experiments used for this thesis is based on the one proposed by Torrens et al (2019, 212). This definition includes initiatives, projects or interventions which are embodied practice/learning-based approaches to addressing mobility issues. The learning as doing approach by using "living labs" allows for real-life testing through collaboration with citizens, scientists, companies and local governments (Luque-Ayala et al 2018, 416). There are three kinds of living labs that

⁴ Source: Emerce 2018

can be identified: Strategic, Civic and Grassroots. The Aventura Mobility lab is an example of a strategic living lab created by a large private investment company in cooperation with the municipality of Rotterdam. An example of a civic living lab is Green office Living Lab Utrecht aimed at realizing sustainability research proposed by students⁵. An example of a grassroots UBLL (Urban Living Lab), is the StapIn Open Space in Malmo aimed at offering a space in which citizens can experiment with living sustainably (Luque-Ayala 2018 et al, 422). The UBLL's in the Randstad area generally either strategic or civic. An overview of living labs in The Netherlands is shown by the Rathenau institute which indicates that 55% of UBLL's are partnered with a university (Rarthenau Institute 2017). The majority of mobility living labs are focused on electronic vehicles (Such as the Nissan Factory in Amsterdam or Lomboxnet). As described by Torrens et al, within transition theories there is a tendency to describe the role of cities as a protector of innovation. This, however, leads to reductive thinking and does not take other political dynamics into account that are equally important for the success of experiments (2019, 212). Their categorization of cities into seedbeds, harbour and battlegrounds moves away from the singular description of protectors and touches on some relevant elements regarding tensions within urban politics (Torrens et al 2019).

The difference between local and regional infrastructure lies mainly in the place-based specification of projects and policies (Kracht van Utrecht 2019a; Cochrane 2018). While projects and policies influence the whole city, their initial starting point is based on a specific place and therefore possible tensions are likely with stakeholders in the direct surroundings. Likewise, political tension between citizens and the municipality is often the result of their decision to build for example a bridge in a specific place meaning little to no involvement of the provincial and national government. That is not to say that for example, that the problem of bicycle parking conditions for legitimacy could not be a city-wide issue, but peaks of tension might arise at certain locations where the problem is at its worst or where local stakeholders are at their most vocal. Large local infrastructure projects that require a high number of resources are more likely to involve other layers of government.

Projects related to regional infrastructure are often larger in size than their local counterparts, involve multiple coalitions and directly involves the provincial and national governmental layers. This means that while the municipality has some influence, it has to establish extensive internal legitimacy for a project before it can successfully start to lobby with the other governmental layers for the implementation of a project. Fragmented messages might lead to projects being shelved indefinitely due to the refusal of the province or national government to commit resources that span beyond the cycle 4-year cycle of the municipal council. The national government interest representation mainly relates to trans-provincial movements, the Province safeguards the interest of the sub-urban population while the municipality is concerned with the urban population. It was argued that the different interests create a functioning democratic playing field in which all interests are represented and resulting policies are borne out of satisfactory compromises (Kracht van Utrecht 2019c). In practice, this might lead to satisfactory compromises and the implementation or lead to tension and subsequent inertia regarding mobility projects and policies.

In the next sections, each city is analysed according to the framework of municipal vision, policy implementation and the politics of experimentation. Subsequently, politicized mobility projects and policies are described in each municipality.

⁵ Source: UU.nl 2020

4.2: AMSTERDAM POLICY VISION, IMPLEMENTATION AND POLITICS OF EXPERIMENTATION

4.2.1 VISION

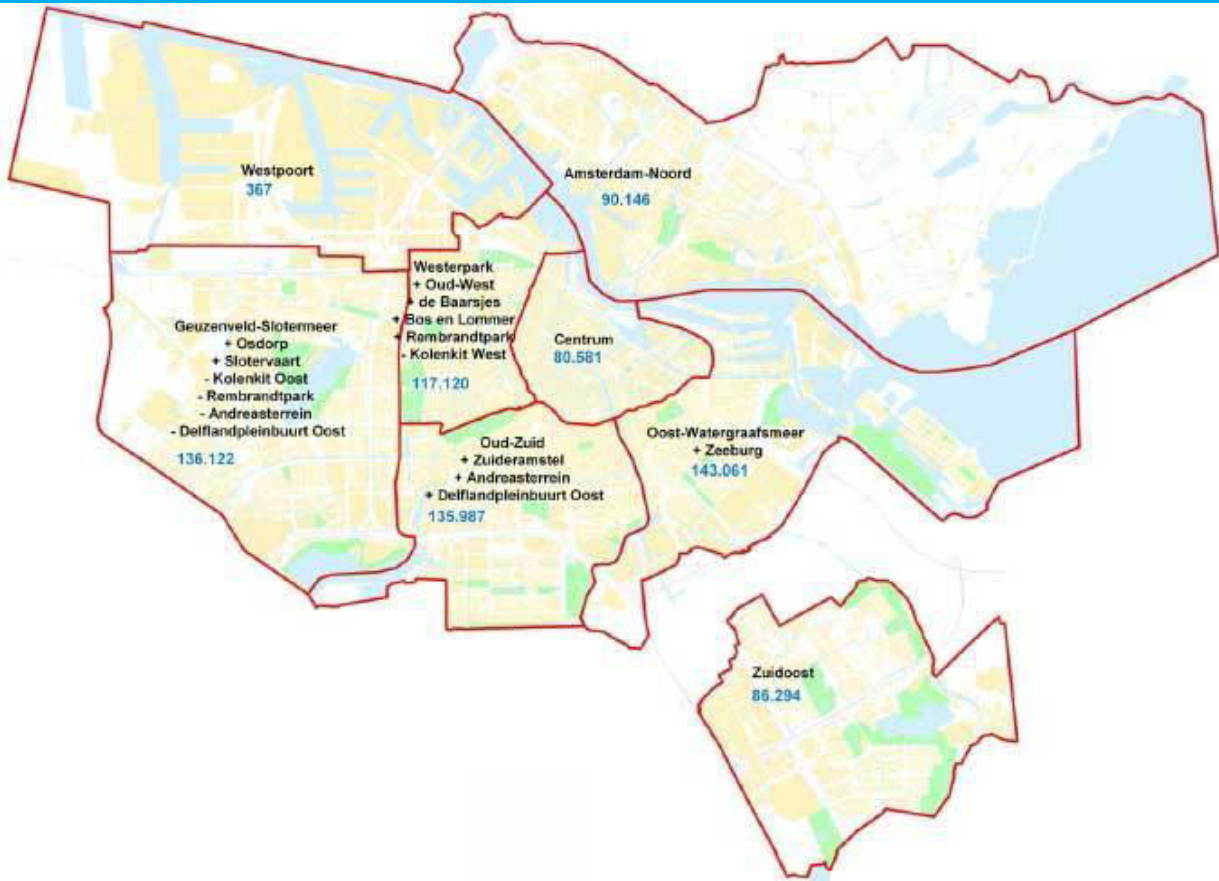


Figure 6⁶: Municipality of Amsterdam

Amsterdam is the largest municipality in the Netherlands located in the province of North Holland with a population of 862.965 thousand⁷. Based on policy papers between 2008 and 2019, overarching strategies for sustainable mobility in Amsterdam focus on reducing traffic congestion and increasing accessibility of the city (Stadsdeel Amsterdam Centrum 2004; Amsterdam 2019c). In the initial policy plans CO₂ emissions are mentioned but their impact is not thoroughly explained (Amsterdam 2006; 2007; 2011; 2012). The municipality overarching strategies consist of 4 elements: Maintaining and enhancing public transportation of tram and metro, maintaining cycling as a method of transport and establishing the inner city as pedestrian-friendly. Starting with the policy plan of 2013, environmental issues and direct linkages between the previously mentioned elements are explained (Amsterdam 2013). An example of this is the approach for the city centre where the municipality aims to increase parking spaces for bikes, reduce tram and busses and give more priority to cyclers and pedestrians. Within the ring area of the city, the focus is on the optimization of public transport. Lastly, the strategy for the sub-urban areas¹ is the increase in capacity and use of Parking and Ride (P+R) facilities to maintain a cycling and pedestrian-friendly city centre. The mobility vision for the years 2013—2030 only briefly mentioned

⁶ Source: Amsterdamforfree 2010

⁷ Source: Statista 2020

innovation policies as the stimulation of "clean vehicles" (Amsterdam 2013). This is a start of a general pattern later shown in policy papers in which electronic cars and to a lesser extent cycling, are seen as a primary solution to emission problems (Amsterdam 2017b; 2018a; 2019b). In general, quantifiable goals are only contained in the policy action plan "Sustainable Amsterdam" published in 2015 (Amsterdam 2015). Policy documents, before and after, maintain a certain ambiguity and do not mention quantifiable goals for reaching emission reductions. The exceptions consist of the 2013-2030 policy plan and the ZES Green Deal in 2015 which have quantifiable goals for both car and bike parking space and emission reductions (Amsterdam 2013; 2015). In table 5 below there is an overview of the type of policy plans and overarching strategies:

Type of policy papers	Overview Policy Plans	Sources
<ul style="list-style-type: none"> ● Action plans ● Roadmaps ● Guidelines ● Council Nota's ● Parking Nota 	<ul style="list-style-type: none"> ● 1 Green deal ZES (Zero Emission 2030) ● 4 overarching strategies: (Smart City, Clean-Air plan, Cycling plan, Parking-plan and Amsterdam Climate-neutral) ● Post-2015 all principal plans indicate extensively the aim of the climate-neutral inner city in 2025 and fully by 2030. 	<ul style="list-style-type: none"> Amsterdam 2006 Amsterdam 2007 Amsterdam 2012 Amsterdam 2013 Amsterdam 2015 Amsterdam 2017a Amsterdam 2017b Amsterdam 2018a Amsterdam 2018b Amsterdam 2018c Amsterdam 2019a Amsterdam 2019a Amsterdam 2019b

Table 5: Overview of Policy Papers

The overall vision of sustainable mobility established in the guidelines, roadmaps and action plans as previously mentioned, consists of policies aimed at the realization of clean air, increasing and maintaining cycling, reducing emissions and solving parking problems in the city centre. Due to the publication date of the overall mobility strategy 2013-2030, later plans most notably smart city, are not connected to the municipal vision. This vision laid out in 2013 focusses on spatial issues and the possibility of future emission zones. The municipality has continued this strategy and implemented specifically targeted emission zones to reduce pollution in the city centre. The introduction of emission zones, however, does not apply to normal private cars to avoid negative public debates. The inconsistencies within the plans mainly relate to the competition between cycling and electronic cars in terms of parking space. Reducing both car use parking space occupancy while simultaneously maintaining increased demand for space for charging electronic cars has led to no reduction of parking space and increased waiting time for permits (Amsterdam 2019a). The municipality solution to the car

parking problem is based on the optimization of occupancy through smart solutions such as optimization apps. Other indications of smart city outside of parking, are car-sharing apps, entrepreneurial innovation and projects aimed at facilitation of behavioural change (Amsterdam 2015). The action plans between 2008 and 2013 mainly centred on solving road congestion, increasing public transportation and increasing bike lane connections (Amsterdam 2006; 2007). In order to realize the municipal vision, a wide number of policy instruments are used. These consist of parking fees and licenses, emission zones, subsidies, stimulation measures, prohibition zones and logistic support. This results in an approach in which multiple policy problems are being tackled based on instruments. Within the policy papers, these consist of car/bike parking, public transportation, smart solutions, electronic vehicles and innovation. In the next section, the further explains how instruments have been applied to various policy problems in the municipality of Amsterdam.

4.2.2: POLICY IMPLEMENTATION

The implementation of four key policies can be identified: Car parking, bike parking, and emission zones, local and regional infrastructure.

In terms of car parking, instruments are being used to reduce and optimize parking space. The municipality aims to reduce parking lots in the city centre, increase the occupancy rate of large (underground) parking lots and influence behavioural change to reduce car use (Amsterdam 2012). The parking policy plan was updated in 2017 to include more effective measures such as the reduction of the minimal parking norm to 0 for new locations and the increase of the maximum amount of allocated space in locations with abundant space (Amsterdam 2017a). Other measures taken were the expansion and increased number of P+R locations around the ring of Amsterdam to increase chain transportation between cars, trams, metro, cycling and train.

In terms of bike parking, the municipality has invested in new parking locations between 2008 and 2019 based on projected demand. In 2012, the municipality responded by outlining its new goals and investments for bike parking in two policy papers for the next 8 year (Amsterdam 2012;2017b). During the period 2012-2020, the municipality invests 120 million to realize an additional 38.000 parking spaces. Furthermore, the municipality indicated the shift to a Smart City approach in 2015 in which technological solutions and bike-sharing are viewed as possible methods to reduce the amount of (abandoned) bikes (Nederlands Dagblad 2016; Parool 2015).

In terms of emission zones, the municipality has banned environmentally unfriendly cars, vans, and touring cars in 2017, 2018 and 2014 from the city centre. In 2020 more stringent zones will be implemented for trucks to both reduce emissions and nitrogen in the city centre (Amsterdam 2018b). The instruments used to facilitate electronic vehicles consists of increasing the amount of charging stations by 3000 between the years 2014-2018, subsidies for lease cars, (small) trucks for small and medium-sized business (e-flux 2019).

Local and regional infrastructure projects have for the majority been implemented. In terms of sustainable mobility, these consists of increasing and improving cycling infrastructure both within the centre and towards the sub-urban areas through the construction of highways (Amsterdam 2012; 2017b). The intended increase of use and extension of public transport, however, has not been fully realized. The general strategy has changed from increasing public transportation city-wide to reducing usage in the inner centre while seeking an increase in the outer ring. The North-South metro-line is the exception to this strategy due to the complications and length of the project. However, recently after the completion of the metro, bus-lines in the northern part of Amsterdam are being removed to further support the legitimacy of the North-South line (Het Parool 2019). Bus use, in general, has declined and a lot of bus-stops have been removed in the city centre. The removal of bus-stops is not mentioned outside of increased efficiency and creating public transport based on demand in municipal policy papers

(2013;2017b). In the past decade, however, this strategy has led to the removal of bus stops which is inconsistent with the vision of increasing public transport use⁸.

In conclusion, the vision and implementation of the municipality's policy plans are relatively consistent with the main exception being public transportation and the electronic car strategy. The municipality of Amsterdam has a wide number of overarching strategies aimed at solving mobility problems. In terms of objectives, it has focussed on improving cycling roads, implementation of emission zones and facilitation of specified smart pilots. The goals for electronic cars, however, contradicts its ambition to solve the cycling and car parking problem. In the next section, the politics of experimentation are described in terms organizations set up to stimulate innovation, internal frameworks and possible methods of absorbing niche experiments.

4.2.3: POLITICS OF EXPERIMENTATION

In this section, the politics of experimentation of the municipality of Amsterdam are described based on innovation capacity. The internal guideline for the stimulation of mobility innovations is 'Smart City Amsterdam'(Amsterdam 2015;2019b). In table 6 below, the number of organizations set up or tasked with innovation is described:

Platform	Founded	Purpose and goals of the platform	Number of projects /Partners	Sources
Amsterdam Smart City	2008	1: Purpose is to push sustainable technologies 2: Connect users, business and government 3: Role of the platform is determining the relationship of the smart project with municipality goals and analysing the playing field (of projects). 4: Transnational linkage with multinational companies	90+ smart projects	Amsterdam 2015; Amsterdam 2016; Amsterdam 2019b;
Amsterdam Institute for Advanced Metropolitan Solutions	2013	1: Solving complicated mobility problems through valorisation, education and research 2: Establishing Living Labs in the city of Amsterdam to facilitate co-creation 3: Citizen Engagement with metropolitan problems 4: Designing, studying and developing (big) data processing	1 present Mobility project (Robo-boat)	AMS 2017
Start-Up Amsterdam	2015	1: Establishing a corporate network including mobility-oriented start-ups 2: Supports start-ups with generating capital for scaling up. 3: Aims at supporting the establishment of international companies in Amsterdam and facilitating transnational linkages.	Corporate Partnering programme with 25 Multinationals 2015-2018	Amsterdam 2020

Table 6: Governmental Network Organizations

The municipality of Amsterdam started its smart city strategy relatively early in 2008 with the intention of realizing a future proof city (Amsterdam 2015). The Amsterdam Institute for Advanced Metropolitan

⁸ Source: NRC 2018

Solutions (AMS) was set up specifically as a think-thanks to solve complex mobility issues and cooperate with the Smart City initiative to realize the establishment and facilitation of living labs (AMS 2017). Start-up Amsterdam was created in particular to improve the network of start-ups and to help them cooperate with multinationals (Amsterdam 2020).

When looking at the politics of experimentation, the municipality of Amsterdam functions through its organizations as a "harbour". This means financing experiments to a limited extent, the increased network linkage between innovative companies, facilitation of encounters and increasing exposure (Torrens et al 2019). In terms of grassroots support, the alignment of Living labs with the culture of the community is indicated as crucial for the success of services and processes (AMS 2017). However, in terms of projects, it is limited to a pilot of bike-sharing in the Zuid-As. This pilot is a community-led approach in which citizens can join through the use of an app to share bike ownership. The municipality gives financial aid to realize the project and aims to entice citizens to join up with the programme. Other grassroots initiatives such as Ring Ring are not actively supported for longer periods (Ring Ring 2019). An example of a smart-grid initiative is the Amsterdam Arena vehicle to grid project which aims to use electronic vehicle batteries in innovative ways to power the football stadium Johan Cruyff Arena (AMS 2017). The smart city project between 2012 and 2018 mainly consisted of small bottom-up pilot projects in terms of sustainable mobility (Kruze 2020). The Amsterdam Smart City organization's strength has been its ability to spur and stimulate the start of (bottom-up) initiatives through conventions and networking capacity (Ring Ring). The linkage with the mobility framework was non-existent in the past but recently has seen more coherence in terms of smart parking solutions and support for MaaS projects (Amsterdam 2019a). The relationship between smart city and mobility is highly centred on electronic vehicle solutions as is indicated by the newly adopted Mobility lab project (Kruze 2020).

Other innovations such as share-bikes or electronic bikes were not included in smart city initiatives and were initially ignored until their troubled introduction in 2017 forced the municipality to implement restrictions. Their reintroduction has come with limited regulation in order to not repeat previously unwanted circumstances. Furthermore, the municipality has started its initiatives outside of the Amsterdam Smart City organization with the eBuurthubs pilot⁹. In this project, the municipality aims to collaborate with neighbourhoods and only introduce (e) share mobility solutions when there's enough demand from local citizens. It aims to evaluate and monitor the demand during the period of 2019-2022 (Amsterdam 2019b). The municipality's approach to innovations has changed over time from liberal non-regulation to increased regulation and steering of projects and setting up frameworks (Sengers et al 2019). Behavioural change strategies have also changed from advertisement campaigns to analysing citizen behaviour through voluntary apps such as MobileValue¹⁰. Both of these new projects are financed and part of the European wide subsidy programme Interreg and shared between other European cities.

In the next section, the most politicized projects and elements of legitimacy are described consisting of the North-South metro, Bike-sharing, Bike-parking, and the implementation of a smart city. The implementation of Smart city is described based on interviews with Marek Kruze and the owner of Ring Ring Janine Hoogendoorn.

4.2.4: PROJECT ANALYSIS

⁹ Source: Amsterdam 2020a

¹⁰ Source: Amsterdam 2020b

In table 7 there is an overview of all the described projects and their relevance to the criteria of the evaluation framework and which type of mobility is referred to.

Project:/Policy	Timeline Analysis	Type of Mobility	Important Criteria
North-South Metro-line	1988-2018	Local/Regional Infrastructure	<ul style="list-style-type: none"> ● Stakeholder Participation ● Consistency Between Government Layers ● Consistency Municipal Vision ● Transparency/Monitoring
Bike Sharing	2014-2019	Cycling	<ul style="list-style-type: none"> ● Consistency Municipal Vision ● Network Capacity ● Stakeholder Participation
Bike Parking	2008-2019	Cycling	<ul style="list-style-type: none"> ● Comprehensiveness
Smart City Implementation	2014-2019	Car/Pedestrian/Boat/Cycling	<ul style="list-style-type: none"> ● Comprehensiveness ● Monitoring and Transparency ● Network Capacity

Table 7: Overview described Projects and relevant criteria

4.2.4.1: NORTH-SOUTH METRO LINE



Figure 7: North South-line and previously used bus-lines

Date:	Relevance	Source:
1988	Plan proposition for a metro connecting the South and the North of Amsterdam/	ANP 1996
1996	Governmental agreement on the construction of a metro connecting the South and the North.	Het Parool 1994;1999
1996	Subsidence analysis conducted by the municipality indicating the low possibility of risk.	NRC 1996
1997	Due to pressure and negative experiences with the implementation of another metro in 1975 a referendum was conducted that required a minimum participation rate of 35%. The results of the referendum were announced and 65% were against the project but the required participation rate was not reached and therefore it was called void.	NOS 2018
1998	Independent subsidence report organized by citizens, criticising the low estimate of risk communicated the municipality.	NOS 2018
2000	Compensation measures indicated by the municipality due to subsidence caused in the neighbour 'de Pijp'.	Het Parool 1998
2008	Competition over resources between national government and municipality. Additional resources are not given due to the already high costs associated with the project.	Trouw 2008
2009	Resignation responsible councillor Resigned.	Metro 2009
2009	Commission Veerman installed to analyse whether the project should be abandoned or completed.	Metro 2009; NOS 2020
2009	Commission sees no viable alternative but to complete the project	Metro 2019; NOS 2018
2018	Completion North-South Metro	NOS 2018
2019	Citizens generally satisfied with the metro except for those in the Northern part of the city due to removal of bus-stops.	Telegraaf 2019;Trouw 2019

Table 8: Timeline North-South Project

The North-South metro-line was proposed in 1988 as a way to directly connect the Southern and Northern part of the city. During the planning process, the municipality put itself under pressure by advertising the metro to large companies as a method of instant travel for their employees while being close to the creative centre of Amsterdam (ANP 1996). From the start, the project was reliant on funds

from the national government. To convince them, the municipality allowed the generous restructuring of payments for a 3 billion outstanding loan. The funds were directly deducted from this debt but still led to a dependency which slowed down the project during multiple pivotal moments (Het Parool 1994; 1999; 2006). During the planning process, citizens were concerned for subsidence of their houses, especially in the old neighbourhood De Pijp. The tests conducted by the construction company indicated little to no damage to the surrounding houses which justified the municipality to move ahead with the project (NRC 1996). Due to the dissatisfaction within the city and to prevent a repeat of the riots that took place in 1975 for a different metro line, the council agreed to a binding referendum with a minimum participation rate of 35% (NRC Handelsblad 1997). The votes showed that more than 64% of the citizens voted against the project but due to the low participation rate of 100 000 citizens the results were made void (Het Parool 1997; NOS 2018). Fears for subsidence remained in the old neighbourhood de Pijp and got further reinforced by an independent report in 1998 stating that all houses would require reinforcement. The municipality in their report provided by the construction company stated that only 5-10% required reinforcement municipality (NOS 2018). The municipality had only reserved compensation based on the projected 5-10% (Het Parool 2000). However, during the course of the project, multiple houses were affected by subsidence and the project initial deadline got delayed in 2013. The knock-on effect was that the municipality lost resources quickly and required additional financing (Trouw 2008; Volkskrant 2004). The additional resources were initially not given by the central government due to the already high costs of the project. Furthermore, the municipality set up unfavourable compensation for contractual construction fees which led to additional costs (Het Parool 2006).

The problems of the project eventually lead to the resignation of the responsible councillor in 2009 and the start of the commission Veerman. This commission's purpose was to evaluate whether continuation of the project was still viable (NOS 2018; Het Parool 2009). The commission indicated that continuing was cheaper than stopping the project which led to the resumption construction. The commission, however, seemed intent from the start to continue the project and did not look at alternatives and estimated higher costs for the cancellation (Metro 2009). After the resumption, there were fewer issues with subsidence and finances were relatively under control. In the period 2014-2018, there was limited reporting on the state of the project aside from an excursion into the tunnels (IJmuider Courant 2018a; 2018b). After it finished a majority of the citizens were satisfied with the metro and 61% saw it as an improvement. However, in the Northern part of the city, 41% was dissatisfied because the project promised improved mobility from and to the city centre (Motivaction 2019). To increase the use of the metro, the municipality has removed bus-lines that previously moving towards the central station. This has led to reduced mobility for elderly people and those living far away from the metro stations (Telegraaf 2019).

The legitimacy of the project from the start was based on an optimistic view that the proximity of a metro line would lead attract large multinational companies in addition to the need to emulate other "world cities" (ANP 1996). Despite the low participation of the referendum, it was clear that the citizens of Amsterdam did not see why the metro was crucial for the development of the city. During the planning phase, the municipality allowed citizens to participate to a certain extent and voice their concerns but did not take any of them into account for the actual construction of the project. This led to additional pressure on the project when any subsidence problem did occur. Furthermore, the difficulties surrounding the funding from the central government made it more difficult to account for the additional risks and compensation. After its finalization, the metro line is party legitimized without taking into account the opportunity costs (Trouw 2019; Motivaction 2019).

4.2.4.2: BIKE PARKING

Bike parking has been on the municipal political agenda since the 1990s (AD 2000). The increase in citizens and the popularity of cycling in the city only led to a small increase in space allocated to bike parking (Telegraaf 2011). The municipality did spend a lot of effort on researching possible solutions without any commitment to solving the actual problem (Parool 2013a). The lack of space and the resulting chaos of bike parking has led to strong enforcement on illegal placements of bikes. This has led to a high amount of 250 daily removals. These bikes after their removal are transported to a holding depot with a capacity of 12000 bikes. After a couple of days, these will be sold for scrap, sold to second-hand shops or exported to other countries (Parool 2013b). This rigorous enforcement combined with a lack of space for parking has led to a negative public perception of municipal legitimacy. They indicate, however, that the removal costs the municipality a lot of money and that its main purpose is to change citizen behaviour (Volkskrant 2014). The majority of news articles are published during the period 2012-2015 and focus on the municipalities' failure to address the problem (Telegraaf 2013; De Groene Amsterdammer 2013; NRC Handelsblad 2013; Spits 2014; Metro 2015a; 2015b). The economic crisis of 2008 meant that bike parking policies were no longer a priority for years. Furthermore, the pressure applied by news articles is a direct response to the announcement of a cycling plan by the municipality. In 2012, the municipality responded by outlining its new goals and investments for bike parking (Amsterdam 2011; 2017b). During the time period of 2012-2020, it commits to a 120 million investment in order to realize an additional 38.000 additional parking spaces. The articles after 2015 indicate a shift to a Smart City approach in which technological solutions and bike-sharing as seen as possible methods to reduce the amount of (abandoned) bikes (Nederlands Dagblad 2016; Parool 2015). However, the increase of 12 000 citizens a year, additional tourists combined with the increasing popularity of the bike means that the problem is unlikely to be solved soon and will remain on the political agenda.

4.2.4.3: BIKE SHARING

Bike-sharing was seen by the municipality of Amsterdam as a way to both reduce pressure on bike parking space and reduce forced removals of abandoned bikes (ANP 2016; Parool 2014). The experiments conducted with the cooperation of the municipality were an extension of the smart city programme that started in 2015. However, to further increase the number of share-bikes in the city regulations were not introduced and private companies were given full freedom in the number and placement of their bikes (Nederlands Dagblad 2017). This led to a vast increase of share bikes being placed on public parking space leading to frustrations of local citizens (Telegraaf 2017; NRC NEXT 2017; de Volkskrant 2017). This put pressure on the municipality to regulate the flows of share-bikes in the city. Due to the increasing pressure, share-bikes were being removed from public space entirely to put a stop to the "chaos"(BNR 2017). Generally, the share-bikes use rate was very low which meant an almost complete removal in 2017 (Nederlands Dagblad 2017; Trouw 2017a). The public perception of share-bikes turned negative and influenced policies in other cities such as The Hague which took a more regulated and cautious approach with their placement (Trouw 2017b). Despite these perceptions, the municipality allowed share-bikes back in the city through a regulated tender process in which their usage should be minimally 4 times a day and the total amount should be capped at 3000 (BNR 2018). This is in stark contrast with the OV bike which is indirectly supported through the national government. This type of share-bike both have a relatively high usage rate and positive public perception (Trouw 2019). The difference is that these operate in a fixed location near stations which means that they do not compete with public parking space.

The politics in the case of shared bikes is centred on the competition for public space between citizens and private operators and the misalignment of public needs with municipality goals and investments. The municipality aimed to find a different solution for bike parking space without direct

investments and saw share-bikes as a smart solution (Amsterdam 2017b). This can also be seen as placing responsibilities on the citizens by reducing the pressure on the government to find solutions to the problem.

4.2.4.4: SMART CITY

The municipality of Amsterdam as previously mentioned fulfils the role of facilitator regarding experimentation through networking and linking different parties together by using its three platforms. The municipality has aimed to vastly increase its network capacity through organizations such as Smart City Amsterdam, Start-Up Amsterdam and Amsterdam Institute of Advanced Metropolitan Solutions. Through these organizations, it can support innovative solutions in various ways. In terms of grassroots support, however, Amsterdam remains limited as in indicated by the example of Ring Ring.

As previously mentioned, Ring-Ring is a platform that aims to stimulate cycling by combining employees as users, companies and charities in one platform. By cycling a set target given by employers or charities, users can gain discounts, health prevention bonuses which they can spend or give to a chosen charity. By doing this mobility is transformed into a common good instead of a question of economic gain and loss (Amsterdam 2019b). The role of the municipality for this project, however, is limited to joining the “FietsCoalitie” a platform in which both Amsterdam Smart City and Ring Ring are part of to stimulate cycling in the city (Smart city Embassy 2020). Their main role is sharing traffic information on cycling to find low cycling rate areas with the potential of transformation. In the policy papers themselves however, there is very limited information or policies on grassroots support outside of entrepreneurial innovation. The owner of Ring Ring indicated that collaboration with the municipality of Amsterdam was complicated and murky due to there not being a direct connection and a constant rotation between employees responsible for fostering innovation. Furthermore, there was a lack of insight on how platforms like Ring Ring require a functioning business case without government subsidies through a data and subscription model. Due to the large number of start-ups launching apps, data management has become relatively expensive in the city leading to increased competition and costs. The municipality thought that Ring Ring could easily absorb new users without any additional costs and suggested a city-wide campaign. When told of the subscription model the municipality retreated and indicated that the company would then have to go through the usual tendering process in order to become part of a behavioural change campaign. During this time Ring Ring indicated that Smart City Amsterdam had no role in mediating between the municipality and them or was offering any continued support (Ring Ring 2020). This is not surprising seeing that the high turnover rate of employees meant that few at Smart City Amsterdam were employed for longer than a year and were often done so externally (Kruze 2020). Another example in regards to the internal politics of the municipality of Amsterdam is their general approach to innovation. According to Marek Kruze of Amsterdam Smart City, the new city council is enthusiastic about innovation and gave him the go-ahead to facilitate market parties to start a mobility lab south of the Amsterdam Arena (Kruze 2020). However, he ran into internal difficulties concerning communicating the need for flexibility within a rigid rule and procedure-based environment. The division responsible for the rules and procedures of urban planning indicated that he needed to offer them a framework showing what kind of innovations he wanted at the location. He indicated that he could not do that because he did not know what the private companies would come up with in their collaborations and did not want to restrict their imagination and stifle possible innovation. Without a framework, however, the division would only allow him to proceed if he opted for the exception procedure. And while he had already started it in anticipation of resistance, he indicated that such procedures are an exception for a reason and that the municipality needed to change their approach to innovation. This could either be through allowing a fast-track exception procedure for innovation regularly or by establishing a flexible framework in which living labs can function without interference.

Within the recent new smart city plan, this is indicated on the agenda as an important goal of the organization to build frameworks for future innovation (Amsterdam 2019b). The municipality, therefore, plans to change their approach and become less hands-off and more involved in framing innovations allowing them to directly support innovation.

4.3.1: UTRECHT POLICY VISION AND IMPLEMENTATION



Figure 8¹¹: City of Utrecht

The city of Utrecht is located in the province with the same name in the centre of The Netherlands. It has a population of 355.799 thousand of which a large portion (99.000) are students (Utrecht 2019). In table 9 below, the various policy plans and overarching strategies are described:

Type of policy papers	Overarching Strategies	Sources
<ul style="list-style-type: none"> Action plans Roadmaps Guidelines 	<ul style="list-style-type: none"> 1 Green deal ZES (Zero Emission 2030) 5 Cycling plans between 2008-2019 (including 	Utrecht 2002 Utrecht 2010 Utrecht 2013a; Utrecht 2013b

¹¹ Source: Blokplan Plattegronden 2020

<ul style="list-style-type: none"> ● Council Nota's ● Parking Nota 	restructuring plan) <ul style="list-style-type: none"> ● 6 Clean air plans ● 3 Overarching mobility plans ● 1 Car parking plan 	Utrecht 2015a; Utrecht 2015b Utrecht 2016 Utrecht 2017a; Utrecht 2017b; Utrecht 2017c; Utrecht 2017d Utrecht 2019a;Utrecht 2019b Utrecht 2020
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Table 9: Overview Mobility Policy Papers Utrecht

Based on these policy plans and in some cases additional articles, the municipal vision, policy implementation will be outlined.

4.3.1.1: MUNICIPAL VISION

The principal plans laid out by the municipality of Utrecht indicate an emphasis on cycling, chain mobility and reduction of car use within the city's boundaries. Chain mobility is mentioned as a way of reducing car use and increase bike and train traffic in and around the city. The emphasis on cycling as a mode of transport in Utrecht was first mentioned in the 2002 policy document which stated that improved connections between city area's and roads for cycling were a priority of the municipality (Utrecht 2002). The realization of the policy plan occurred at a slow pace until 2010. This is evident by the negative description of the 2002 plan in the new policy plan that aimed to overhaul the municipalities cycling vision (Utrecht 2010). This document stated that the ambition of the previous plan was both relatively low and not fully realized over the course of 8 years. To correct this, a higher budget was allocated to stimulate the use of cycling by aiming to upgrade the 5 most important cycling routes within the city. Bike-sharing is briefly mentioned as well but without any clear programme or plan involved (Utrecht 2010). The policy plans starting from 2015 indicate the realization of the bike parking space below the central station and the construction of the Mooreelsebrug to connect the western part of the city with the centre (Utrecht 2015a; 2015b; 2016). The bridge had been discussed internally for 15 years but its construction was fraught with delays (Volkskrant 2016). Similarly, the tram from the central station to the Science Park had been discussed for more than 10 years but was finally indicated as being realized in the 2013 clean air policy plan (Utrecht 2013b). Within the same principal plan, budget is allocated for the implementation of emissions zones within the city.

The vision of sustainable mobility in Utrecht has been relatively consistent in its emphasis on cycling during the past 11 years by investing in cycling infrastructure and recently parking. Additionally, the ambition to be climate neutral in 2030 combined with previous clean air strategies has led to policies and use of multiple instruments. These consist of emission zones, demolition of old vehicles, replacement compensation for turning in gasoline scooters into electronic versions, and the stimulation of car sharing, P+R facilities and changing parking norms. The emission zones introduced first banned trucks before 2001 in 2007 and cars from the same year in 2015 (Utrecht 2013b). The stimulation of free parking for electronic vehicles between 2016 and 2019 however, is inconsistent with the municipality's aim to reduce car use. It is part of a wider strategy of stimulating electronic vehicles which further includes the stimulation of charging stations through citizen requests in their neighbourhood (Utrecht 2013b;2016). The compensation for the demolition of old motorbikes was a temporary measure during the period 2012-2016 that reduced polluting motorbikes by 800 in the city centre¹². Policies implemented for stimulation of car sharing include 50% reduced parking fee, increasing awareness

¹² Source: AD 2018

through marketing campaigns and logo's and finally restructuring of parking space (Utrecht 2015a; 2017b). The restructuring of parking space into playgrounds or green space is based on the use of shared cars in the neighbourhood and is initially temporary for 6 months and with consent made permanent. The construction of multiple P+R facilities including one at the Uithof has vastly increased the use of chain mobility by doubling the use of combi cards for both parking and bus/tram (Utrecht 2019a, 14). Lastly, the municipality has reduced the maximum parking norm in Utrecht¹³.

4.3.1.2: POLICY IMPLEMENTATION

In general, the policies outlined in the previous section were implemented but additional large infrastructure projects were often excluded or simplified in the policy plans. During the past 11 years, several long-standing projects have been completed such as the Moreelsebrug, Uithof tramline and bike parking space below the central station. The increase in cycling congestion around the central station is mentioned in 2016 policy plan but linked to the increase in activity of students and employees. However, the majority of increases in cycling traffic are linked to the construction of the bike parking space below the central station (Utrecht 2016). The positioning of the central station and the completion of the bike parking space has recently changed the situation, but the 2015 policy paper had not attempted to describe the possible effect on future traffic. The action plan does state awareness campaigns to divert traffic away from the congested area of Vredenburg through the Herenroute. This plan, however, has been limited in scope. Other policy plans attempting to deal with cycling congestion are similarly limited in scope and emphasize changing citizen behaviour over infrastructure (Kracht van Utrecht 2019a). The construction of the Moreelsebrug has been an important and long-standing aim of the municipality. The project successfully increased the cycling rate between the West and the central area of the city (Utrecht 2016). The finalized version, however, differs from the one indicated in the plan due to the missing connection to Moreelsepark leading to reduced connectivity with the central station. Other infrastructure projects such as the extension of the highway A24 have been cancelled for a wide number of reasons including sustainability concerns.

In conclusion, in general, the municipality has a consistent vision since 2010 that emphasizes cycling, car-sharing and electronic cars. However, its parking subsidies for electronic vehicles are inconsistent with the municipalities' aims to reduce parking space for cars in general. Lastly, there is a lack of evaluation and omission of local infrastructure projects in the new cycling plan of 2019 regarding both the Moreelsebrug, Uithof tramline or cycling congestion surrounding the central station.

4.3.1.3: POLITICS OF EXPERIMENTATION

In this section, the politics of experimentation for the municipality of Utrecht are described based on its innovation capacity. This consists of internal guidelines aimed at facilitating experiments and innovation and organizations aiming to realize pilots and experiments. In table 10 below the organizations tasked with experimentation are described:

¹³ Source: Volkskrant 2019

Network Linkage Organization/ Project	Length	Purpose and goals of the platform	Number of projects /Partners	Sources
Horizon 2020 (Smart City lighthouse project)	2017-2022	Creating mobility and energy solutions for the city of Utrecht	7 Projects: Utrecht as European coordinator together with: (Vaasa; Nice; Alexandroupolis; Fopscani; Santa Cruz de Tenerife; Gothenburg) Local partners -Lomboxnet (citizen collective for internet and smart charging); University Utrecht; Utrecht Sustainability institute (knowledge platform); University Utrecht; Eneco; Hoge School Kunst Utrecht; Stedin; Qbuzz; Civity; KPN; Bo Ex	USI 2020; IRIS 2020

Table 10: Governmental Network Organizations/project

Within the municipality of Utrecht, there's no dedicated smart city/experimentation or start-up policy paper and experiments are only briefly mentioned in the Mobiliteitsplan 2025 as important elements to stimulate early-adopters of new technology. Within the policy papers, there is no attempt to establish platforms or pushes for innovation and experimental solutions outside of car-sharing (Utrecht 2016; 2017a; 2019a). Transnational and local linkage occurs through the IRIS Smart Cities horizon 2020 project under the European Union (IRIS 2020). In this project, the municipality of Utrecht combined with Lomboxnet aims to establish a vehicle-to-grid system using solar energy. Collaboration between knowledge institutes such as the Utrecht Sustainability Institute and Economic Board Utrecht is part of the municipal strategy but outside of the IRIS project not linked to mobility solutions (Utrecht 2019a). The Utrecht Sustainability Institute mentions mobility as being part of their strategy but do not have any ongoing projects and only indicate past frontrunner support through the Smart Mobility Challenge. The municipality of Utrecht supports grassroots initiatives such as the Lomboxnet Solar Vehicle to grid project and the MaaS project sponsored by the national government (USI 2020). Furthermore, the existence of knowledge institutes such as HU and UU means that less emphasis can be placed on directly supporting experiments. That being said, the appointment of an innovation officer is mentioned as crucial in creating a more start-up friendly climate in the city and to foster mobility solutions (Utrecht 2016).

In conclusion, the innovation capacity of the municipality of Utrecht is limited due to a lack of dedicated resources and organizations tasked with its facilitation. The European led IRIS project is extensive however and is aimed at facilitating sustainable mobility through its multiple integrated pilots.

In the next section, the most politicized projects of the municipality of Utrecht are described according to a newspaper article an interview and multiple observations. The projects of both the Moreelsebrug and Uithof tramline are large local infrastructure project which analysis is based on newspaper articles. The policy problem of cycling congestion is included based on observations made during a discussion with a policymaker and an interview with the chairman of Kracht van Utrecht Jan Korff de Gidts.

4.3.2 UTRECHT PROJECT AND POLICY ANALYSIS

In table 11 below the two infrastructure projects and policy (problems) are described in addition to their relevance to the legitimacy criteria:

	Timeline Analysis	Type of Mobility	Important Elements
Uithof Tramline	1990-2019	Local/Regional Infrastructure	<ul style="list-style-type: none"> ● Stakeholder Participation ● Consistency Between Government Layers ● Consistency Municipal Vision ● Transparency/Monitoring ● Comprehensiveness
Moreelsebrug	2001-2017	Cycling/Walking	<ul style="list-style-type: none"> ● Consistency Municipal Vision ● Stakeholder Participation
Cycling Congestion	2008-2019	Cycling	<ul style="list-style-type: none"> ● Comprehensiveness

Table 11: Overview projects, policy and policy problems

4.3.2.1: UITHOF TRAMLINE

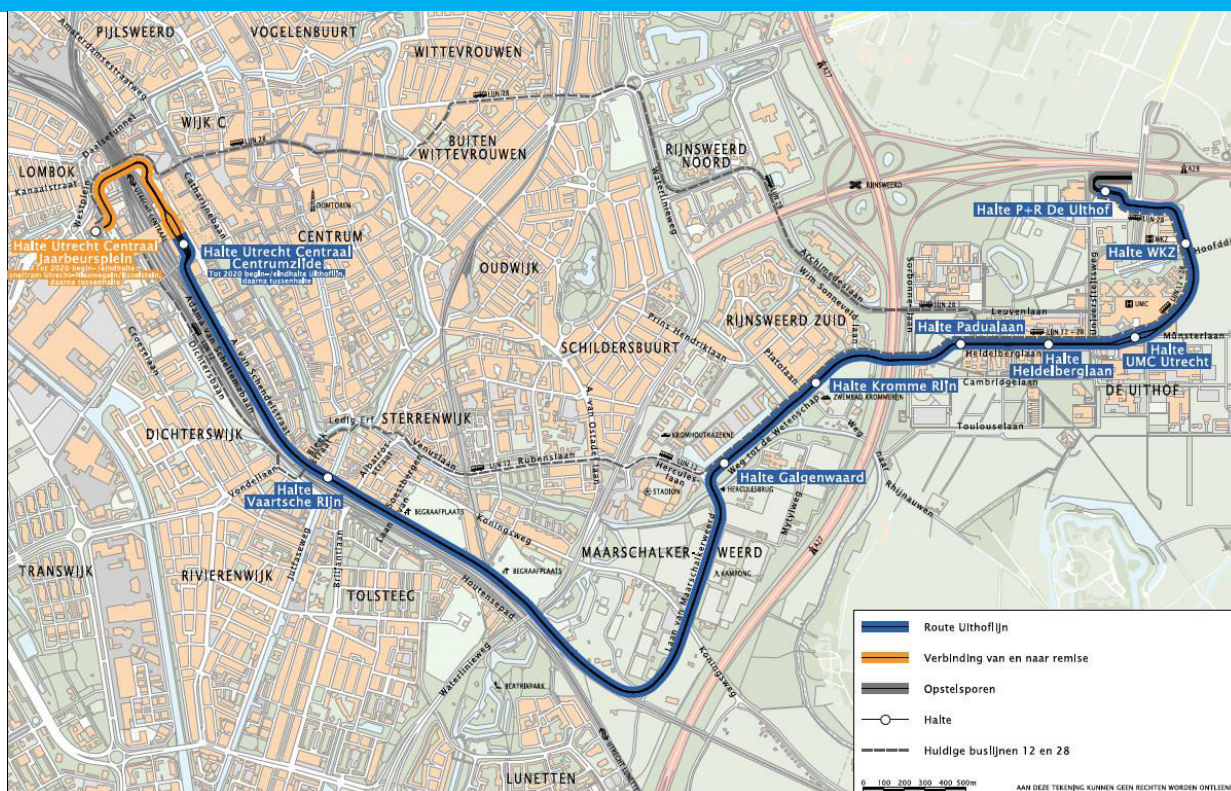


Figure 9: Uithof tramline route¹⁴

In table 12 below the timeline of events for the project is indicated:

¹⁴ Source: Duic 2017

Date:	Relevance	Source:
1993-1998	Council agreed to the completion of the tramline and started work on the concrete road that would cross through the centre of the city.	NRC 1993
1999	Completion concrete road through the city centre to convert it into a tramline in the 'near future.	Volkskrant 1999
2005	Plan for tramline abandoned in favour of intensive-bus line 12	ANP 2006
2009	Agreement among six municipalities to build a regional wide tram network. The Uithof tramline was indicated to the first of multiple individually build tramlines.	AD 2010
2010	Province of Utrecht pressures municipality and links the completion of tramline with the extension of two highways. Municipality agrees to the extension based on a 100 million contribution to the construction of the tramline.	ANP2012
2012	Due to austerity, the highway extension is cancelled. The 100 million for the construction of the Uithof tramline is withdrawn as well.	Volkskrant 2012
2014	Resumption construction tramline with an estimated budget of 440 million euro	De Stentor 2013
2014-2019	Multiple technical deficiencies during the construction of project causing multiple delays and budget deficits and resignation province representative Jacqueline Verbeek-Nijhof in 2018.	ANP 2014; De Gelderlander 2019a; AD 2018a; 2018b
2018	Evaluation construction tramline initiated resulting in the report indicating negligence of province and municipality of Utrecht.	AD2016;2017
2019	Representative municipality Utrecht refuses to be transparent about the project's issues including its inability to ride 12 times per hour.	Volkskrant 2018
2019	Opening tramline and finalization of the project	Utrechts Nieuwsblad 2018; AD 2019
2019	Issues surrounding cycling safety due to construction of tramline near the Uithof. Additional costs associated with cycling bridges to be expected in the future	AD 2019

Table 12: Timeline Uithof-tramline

The concept for the tramline was created in 1990 with the intention to link the city centre and the Science Park through Vredenburg (NRC 1990). After three years the resources necessary for the tramline was realized and the city council agreed for its completion in 1998(ANP 1993; Het Parool 1993). However, due to internal disagreements, the tramline was not completed and never entered its planning phase. Instead, the new coalition under D66 aimed to build a concrete road through the city centre that could be converted to include a tram-line (Volkskrant 1999). This plan was realized but the road would not be used for a tramline which instead would be built outside of the city centre (Utrechts Nieuwsblad

2003). While the plan was not entirely abandoned its implementation was moved to a later date and instead a new high-speed bus line was favoured to the Uithof and implemented (AD 2005; AD2006). After the implementation of the bus-line, there was still the aim to realize the tramline, but surrounding municipalities wanted a network to De Bilt, Zeist, Amersfoort and Eemnes (AD 2009). This proposition led to a coalition of 9 municipalities that aimed to realize a large tram network constructed individually and completed by 2040 (AD 2009). The tram towards the Uithof was intended to be the first tramline to be realized but the Province of Utrecht indicated that its completion would now be linked to the extension of two highways the A27 and A12 (AD 2010). According to Jan Korff de Gidts, the province of Utrecht held the tramline as leverage to force the opposition within the municipality of Utrecht to agree with the highway extension (Jan Korff de Gidts 2019). The pressure on the municipality was further increased when the national government indicated that it wanted to invest 1.25 billion euro into the ring and highway A12 (ANP 2010). A citizen participation group Laat Lunetten Niet Stikken aimed to slow down the process of the highway construction by using indicating violations of European norms for air quality. The coalition however intended to uphold its agreement with the province and national government to gain financial benefits for public transportation (AD 2010a; ANP 2010). The councillor from the Green Party Frits Lintmeijer indicated that rejecting the funding from the national government would lead to a highway completed without consent and benefits for the public transport (Volkskrant 2010). The extension of the A27 was delayed due to environmental concerns and additional cost for a required concrete mould (AD 2010b). If the tramline had proceeded according to the agreed plan with compensation from the national government, it would have started before the highway extension. The minister of infrastructure wanted to delay the tramline to finalize the highway first and indicated that both projects are linked and would not be realized without one another (ANP 2012; Volkskrant 2012). The promised 110 million from the national government was axed due to budget cuts related to national austerity measures (De Stentor 2013; ANP 2011). The initial building process of strengthening the underground layers had started in 2011 but the tramline's construction was being delayed because of complexities such as a required detour around a medical facility due to possible electrical interference with its medical equipment (Amersfoortse Courant 2013). The construction for the tramline finally started in 2014 with a proposed completion date of 2018 and a budget of 440 million (ANP 2014). In addition, a second tramline was intended to be built to the Uithof but abandoned because of the cost, predicted drop in travellers and due to the removal of free public transport for students (ANP2012; Persgroep Nederland 2015; AD 2012a). The second Uithof tramline was controversial due to its construction through the city centre and the possible consequences of the construction process. However, there exists a possible synergy between cycling and trams that the current bus line cannot realize due to the space required (AD 2012b).

Many complications arose during the construction of the tramline including non-fitting rails, the wrong size of tram stations, issues surrounding tremors and damage to the foundation and foreign software not being completed (AD 2016; 2017; Amersfoortse Courant 2018). The resulting budget deficits led to the resignation of the representative of the province of Utrecht Jacqueline Verbeek-Nijhof (Volkskrant 2018). Based on the evaluation of the project and its complications, researchers concluded that the province representative had not actively participated in the governance processes and failed to communicate its plans with the municipality. The province had furthermore ignored calls for regional mobility investments and plans (Utrechts Nieuwsblad 2018). However, the full publication of the report indicated that not only the province acted ineffectively but that the municipality had performed inadequately. The province and municipality had both requested 400 changes to the construction of the tramline and did not cooperate or communicate with the private construction company BAM. This was evident in the fact that meetings lasted only an hour and half and reports were completed with long delays leading to incomplete information transfer between the representatives of the municipality, province and the city council. Likewise, the project was purposely planned with a budget below the

estimated costs due to fears of further delays (NRC 2018). The cooperation between the province and municipality remained fractured due to the lack of transparency in both of their reports about the tramline. These reports also include unnecessary costs made by the construction company BAM during the project. This resulted in the national government withholding any funds for the province until it was willing to be transparent (FD 2019). The last problems before the completion of the project centred around the municipal representative of the project, Lotte van Hooijdonk, and her refusal to be transparent about the additional costs and delays for the project and the trams inability to ride 12 times an hour (De Gelderlander 2019b; AD 2018).

In reflection, an urban planner Wolfgang Spieris indicated that the tramline should have never been built and that the legitimacy of the project was always uncertain due to the projected costs, possible alternatives and negative synergy between the other tramline, central station and cycling (NRC NEXT 2018). Finally, the tramline has been constructed without any concern for the safety of cyclers at a congested crossroads in Utrecht-East (RTV Utrecht 2019). This has led to potentially unsafe situations caused by unprotected crossings. The costs of the project most likely led to the absence of protected crossings with the intention of moving measures such a cycling bridge outside of the project timeline and budget (RTV Utrecht 2019). Currently, there are ongoing discussions to extend the tramline towards other municipalities for the realization of a regional tram network (AD 2019). Due to complexities of the construction of the Uithof tramline, the municipality is working on a framework for high-risk large infrastructure projects (Utrecht 2020).

4.3.2.2: MOREELSEBRUG

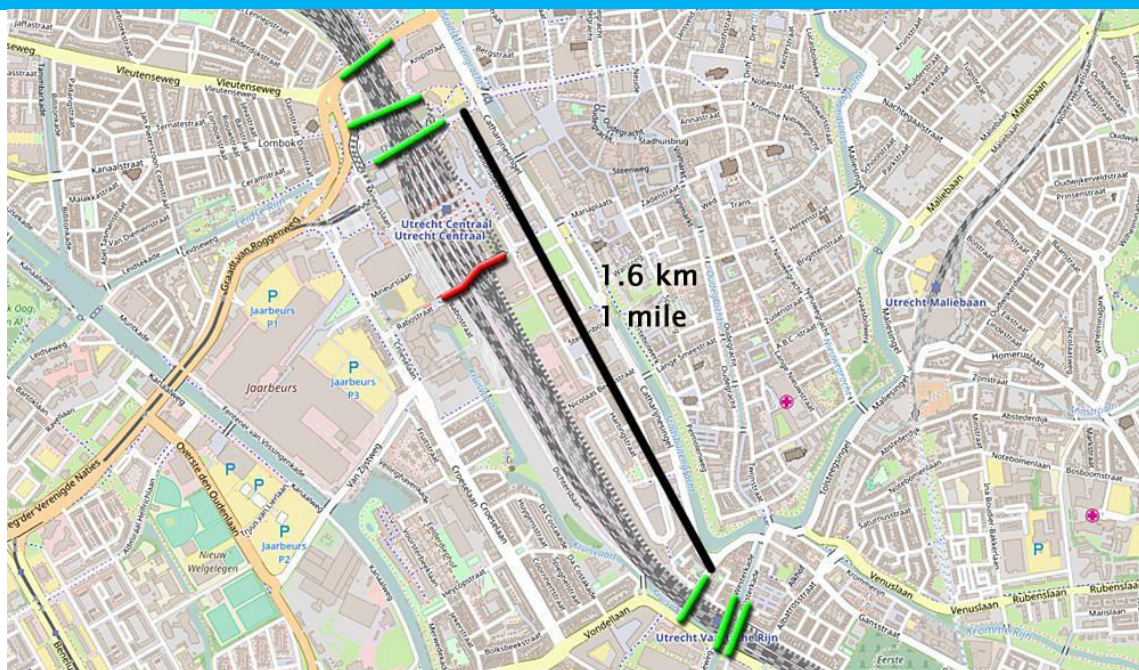


Figure 10: Map Location Moreelsebrug¹⁵

The Moreelsebrug was formerly known as the Rabobrug and was supposed to be built in 2001 when 11 million euros were reserved for its construction (Volkskrant 2016). However, already in its initial planning, the owner of Hoog Catherijne Corvio (later known as Klépierre) agreed with the coalition that any passage around the central station must be restricted and led towards the shopping mall to maximize the number of consumers. Due to the chaos surrounding multiple coalitions, the owner succeeded in establishing such an agreement with the municipality which led to future complications

¹⁵ Source: Bicycle Dutch 2017

during the renovation of the central station. To improve the mobility of both pedestrians and cyclists, a new connection was necessary between the East and West side of the city near the central station. Eventually, the municipality managed to start construction in 2016 and finalize the project in 2017 (AD 2016; Utrechts Dagblad 2018). However, the initial plans for the bridge indicated a strong connection to the new platform near Utrecht Centraal. The stairs to this platform and the station below were removed in the final version due to interference from the owner of the shopping mall. Klépierre threatened to file a lawsuit if the municipality did not agree to the removal of the stairs in the new design for the bridge (Cobouw 2015). The owner referred to the previous clause that there will be no direct alternative means of accessing the train station outside of the shopping mall entrance. The municipality asked the court to make a verdict on the contract who agreed with Klépierre on the condition that the safety of pedestrians should not be threatened. If that were the case, the stairs should be able to be built by 2023 (Duic 2019). There is currently an ongoing petition with more than 12 000 signatures that intends to force the construction of the stairs for pedestrians to the central station¹⁶. However, the situation is unlikely to change before 2023 when it can be re-evaluated based on safety concerns for passengers.

4.3.2.3: CYCLING CONGESTION

The problem of cycling congestion in Utrecht is relevant to the analyse of urban politics due to its relative absence in policy papers. While safety concerns are mentioned about cycling, measures are not taken to reduce congestion on its most busy areas. The three most congested cycling paths in The Netherlands are near Utrecht's central station and two are an extension of one another - Smakkelaarsveld and Vredenburg (Utrechts Dagblad 2016a). Cyclers experience safety concerns on these cycling roads which possibly negatively influences cycling rates in the future (AD 2019a; Utrecht Dagblad 2016b). A common statement is that the bike threatens to become consumed by its success. The only measure proposed by the municipality is a meandering path called the Herenroute (Utrechts Dagblad 2016b). This route has been highlighted through metal pins on the road to point cyclists towards the central station. This project aimed to reduce the congestion on Vredenburg and Smakkelaarsveld (AD 2015). Other measures include the removal of other types of transportation from cycling roads such as motorbikes (AD 2019c). Behavioural change is also indicated as a positive influence to manage the wide variety of target groups on cycling roads outside students (Utrechts Nieuwsblad 2016b). The motorbikes are now prohibited from the cycling roads, but safety concerns remain (Utrechts Nieuwsblad 2019; FD 2018; AD 2016). The problem can only be solved through the increased allocation of resources in these areas (AD 2019d). The municipality intends to invest 46 million in new bridges and tunnels throughout the city but none are close to the most problematic three cycling paths (AD 2019a). A proposed Neude tunnel is unlikely to be realized soon because of the allocation of funds for other locations (AD 2019c). Furthermore, in the current proposed mobility plan, cycling congestion around the central station is not indicated as an important problem and instead seen as something that can be solved by the previously mentioned general investments in infrastructure (Kracht van Utrecht 2019b; AD2019a).

4.4: ROTTERDAM

¹⁶ Source: Fossil Free 2017



Figure 11¹⁷: Municipality of Rotterdam

The city of Rotterdam has a population of 644.618 thousand and is most known for having the largest harbour within Europe¹⁸. The city is divided up in a Northern and Southern half by the river Nieuwe Maas. The connectivity between these two parts is seen as crucial for the mobility of the metropolitan area which has led to multiple tunnels and bridges being build and planned (Rotterdam 2015). In table 13 below the overview of policy plans, are described in addition to the municipalities overarching strategies.

Type of policy papers	Operationalization	Sources
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¹⁷ Source: Blokplan Plattegronden 2020

¹⁸ Source: Allecijfers.nl 2020

<ul style="list-style-type: none"> ● Action plans ● Roadmaps ● Guidelines ● Council Nota's ● Parking Nota 	<ul style="list-style-type: none"> ● 1 Green deal ZES (Zero Emission 2030) ● 3 overarching strategies: (Clean-Air plan, Cycling plan, Parking-plan) 	<ul style="list-style-type: none"> Rotterdam 'Parkeren in Beweging 2016-2018' Rotterdam 'Schone lucht 2015-2018' Rotterdam 'Mobiliteitsagenda 2015-2018' Rotterdam 'Fietskoers 2025' Rotterdam 'Fietsplan 2016-2018' Rotterdam 'Smart City' Rotterdam 'Stedelijk Verkeersplan 2016-2030' Rotterdam 'Zero Emission Stappenplan' Rotterdam 'Fiets 2007-2010'
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Table 13 : Overview Policy Plans

Based on these policy plans and in some cases additional articles, the municipal vision, policy implementation will be outlined.

4.4.1.1: MUNICIPAL VISION

Starting from 2015, the policy plans regarding mobility have been outlined according to five pillars: Ideal Cycling city, Central city-lounge, the car as a guest, healthy and accessible city, Rotterdam mobility innovation and cooperation and Accessible and Economic strong Rotterdam. These pillars are integrated in the cycling plan, mobility agenda, urban infrastructure plan and parking plan.

Cycling has been one of the key municipal strategies to transition towards a more sustainable city (Rotterdam 2019a). Rotterdam as a city was designed to be car intensive with wide roads and an emphasis on accessibility which has led to Rotterdam having the least amount of cycling usage of the four largest cities. The construction of the metro starting in the '70s combined with the tramlines strengthened public transportation as a crucial element of mobility. The relative lack of investment into cycling roads in the inner city and safety issues due to the presence of large volumes of cars meant that infrastructure lacked behind. Starting in the '80s, Rotterdam has invested a lot in its cycling infrastructure which in 2007 increased the transportation up to 5km being done by bikes to 38% (Rotterdam 2007). However, the 2016 policy plan for cycling indicates that these numbers were a very optimistic estimation of cycling use and that only 20% dropping to 14% of all the citizens' cycle up to 5km (Rotterdam 2018). To further stimulate cycling parking safety is seen as one of the main obstacles. Due to the frequently stolen parked bikes, the municipality is constructing protected parking zones. The plan further states that the new parking locations will be designated for new expensive/novel (electric) bikes to further stimulate cycling. The strategy for sustainable mobility tenders is integrated into the cycling policy plans by challenging private companies to come up with other solutions to stimulate cycling (Rotterdam 2018).

In terms of electronic car strategy, the municipality has a unique approach for electronic charging stations in which they aim to place them mainly at P+ R locations. The goal is to increase the number of charging stations by 1000-1250 charging at these locations between the years 2019-2022 (AD 2019).

Lastly, the emission zones implemented around the city have not been described clearly in any of the policy plans outside those related to city logistics and the harbour. Its implementation has also further not been described and therefore won't be discussed in the next section (Rotterdam 2017).

4.4.1.2: POLICY IMPLEMENTATION

The main policies implemented in during the past 11 years consists of cycling and road infrastructure, parking licenses changes, construction of P+R facilities, emission zones for trucks on the Maasvlakte, stimulation of placement of charging stations mainly at P+R locations and sustainable mobility tenders. The construction of bike lanes within the city is part of the municipalities' goal to increase citizen satisfaction and cycling rate by 10% (Rotterdam 2018). Likewise, between 2016 and 2018, a large amount of parking space was realized for bikes in locations both near train stations and in other congested residential area's (Rotterdam 2019a). The municipality aims to implement additional parking space by transforming 1200 car parking spots and to build additional space near train stations between 2019 and 2021 (Rotterdam 2019a). In terms of parking, the municipality has aimed to reduce street occupation and move cars towards underground municipality-owned garages. It has reduced the price for these underground parking lots while simultaneously increasing those on the street. Likewise, it has constructed three large P+R to stimulate chain mobility (Rotterdam 2016).

The implementation of local and regional infrastructure consists of multiple large projects such as the two light rail lines (Hoekse-Lijn and RandstadRail network), the tunnel Blankenburgverbinding finalized in 2022 and the Nieuwe Maasverbinding realized in 2024. All these projects are resource-intensive with estimated costs above 500 million euro's and focus on public transportation or car traffic. The Blankenburgverbinding was highly controversial due to environmental concerns and the absence of a cycling connection (Rijksoverheid 2020¹⁹). Both the Nieuwe Maasverbinding and Blankenburgverbinding had pre-existing policy plans since the '60s and '70s but were never realized because of a lack of funding and the realization of alternative projects such as the Erasmusbrug.

In conclusion, the municipality of Rotterdam has adopted a consistent integrated vision that aims to reduce the negative impacts of cars and increase the rate of cycling and walking. The implementation has been successful apart from the emission zone.

4.4.1.3: POLITICS OF EXPERIMENTATION

To describe the politics of experimentation, the organizations within the municipality tasked with the facilitation and acknowledgement of niches need to be described. In table 14 below the three organizations set up or working in cooperation with the municipality of Rotterdam are described:

Platform	Founde d/Ende d	Purpose and goals of the platform	Number of projects /Partners	Sources
Mobiliteitsarena	2015-2016	Purpose to collect bottom-up ideas to improve mobility within the city of Rotterdam	7	Drift 2016

¹⁹ Source: Rijksoverheid 2020

Citylab010	2016-present	The purpose is to allow citizens to admit ideas to realize their vision of the city. This includes mobility projects aimed at improving cycling and walking.	3	City lab010 2019
Verkeersonderne ming	2008-present	Optimization of infrastructure, innovative solutions and contributing to sustainable behavioural change	Overseeing Beter Benutten Programma/ Mobiliteit Arena.	Verkeersonderneming 2019 ²⁰

Table 14: Governmental Network Linkage Organizations/projects

In terms of experimentation and grassroots, Rotterdam's approach during the period of 2012-2019 has been to promote market solutions, use feedback loops from citizens to establish new policies about public space and to finance and steer multiple innovative pilots (Drift 2016; Rotterdam 2019). Rotterdam was the first city for example, to set-up an inclusive MaaS experiment in which they analysed the effects for both high- and low-income households to see whether such mobility offerings could be made inclusive in the future. Multiple other pilots were set up according to the ZES climate agreement which focuses on reducing emissions for transportation of freight. As part of the mobility arena citizen initiative, the newly constructed international mobility campus will be placed in Rotterdam starting from 2021. The Finnish Avanto Ventures indicated that more than 51 ongoing mobility pilots are taking place in Rotterdam. These projects are both set up through the living factories Citylab010 and Mobility Lab. The emphasis, however, is on logistics for the harbour not the mobility of citizens themselves (Frantzeskaki et al 2014). These experiments and innovations are outlined in the Zero Emissions 2030 paper (Rotterdam 2019b). Early experiments with electronic vehicles in Rotterdam were set up by the national government using a living lab approach between the years 2010-2013. This resulted in the placement of 75 Hybrid and electronic vehicles during this period²¹. Other notable experiments include the pilot of auto-rickshaws supported by municipal subsidies. This pilot, however, stopped receiving subsidies after 1 year due to a relative lack of interest. However, the location was not shown on popular mobility apps and could only be paid for by card or cash. Urban planner Bendiks indicated that the pilot could have been a success if administrative support existed at a higher level (Verkeersonderneming 2020). The municipality has shown consistent support for the introduction of bottom-up vanpooling for employers by allowing them to use the bus-lanes starting from 2017 (Verkeersonderneming 2020).

The municipality of Rotterdam currently has no clear framework, commitment for the implementation of a smart city (PBQL 2015). While the municipality does not have a clear framework or plan for the implementation of a smart city, it does emphasize the importance of experiments. The mobility arena created temporarily between 2015-2016 led to several long term mobility experiments focussed on "reclaiming" public space by temporarily closing car roads, placement of bike parking spots and stimulating the uptake of electronic vans (CityLab010 2019; Drift 2017). While the results of the project have often been temporary, their effect is mainly seen in terms reinforcing the aims of city planners to make the inner city less reliant on cars and to recapture more public space from both car parking lots and roads. These bottom-up inputs led to the idea to transform the city's iconic car symbol

²⁰ Source: Verkeersonderneming 2020

²¹ Source: Stedin Netbeheer 2013

the Coolsingel into a more pedestrian-friendly zone by removing one side of the car road and replacing it with a cycling and pedestrian path (Coolsingel 2020).

In conclusion, Rotterdam has both through its organizations and internal framework for experiments relatively high innovation capacity. The cooperation between the university and its logistic hub is also mentioned within policy papers for reaching its co2 neutral objectives (Rotterdam 2016). Its approach towards experimentation also emphasizes bottom-up initiatives through the mobility arena and is further integrated into its MaaS projects.

In the next section, the most politicized projects and policies within the municipality of Rotterdam will be described. The emission zone of 2015 and the HoekseLijn have been chosen because of the frequent news reports. The large infrastructure projects of the Nieuwe Maasverbinding and Blankenburgverbinding were chosen based on an interview with a policymaker from the municipality of Rotterdam.

4.4.2 ROTTERDAM PROJECT ANALYSIS

The projects analysed based on newspaper articles and interviews and their relevant connection to the criteria of chapter 2, are described in table 15 below:

Rotterdam Projects/Policies	Timeline Analysis	Type of Mobility	Important Elements
HoekseLijn	1990-2019	Local/Regional Infrastructure	<ul style="list-style-type: none"> ● Stakeholder Participation ● Consistency Between Government Layers ● Consistency Municipal Vision ● Transparency/Monitoring ● Comprehensiveness
Nieuwe Maasverbinding/ Blankenburg Tunnel	2001-2017	Cycling/Walking	<ul style="list-style-type: none"> ● Consistency Municipal Vision ● Stakeholder Participation ● Comprehensiveness
Diesel and Gasoline car Emission Zone	2014-2019	(Gasoline/Diesel) Car	<ul style="list-style-type: none"> ● Comprehensiveness ● Consistency Between Governmental Layers ● Stakeholder Participation

Table 15: Overview projects, policy and policy problems

4.4.2.1: HOEKSELIJN



Figure 12²²: HoeksLijn Route

Date:	Relevance	Source:
2012	Agreement to extend old train rail into a metro line with additional capacity and an extension to Hoek van Holland. Construction started in 2017.	Cobouw 2012; Rotterdams Dagblad 2014
2016-2018	Disagreement with citizens of Hoek van Holland about the construction of a tunnel. Alternative taken under consideration but ultimately rejected which led to a lawsuit and the first delay.	Rotterdams Dagblad; 2016; 2017
2017-2018	Technical difficulties consisting of asbestos found near the construction site, embankment being too small, old construction and old cables below the ground.	FD2017; 2018
2017-2018	Independent review of both the responsible councillor Pex Langenberg and the construction of the metro line. A wide number of governance issues identified including lack of preparation time, underestimation of the complexity of the project and lack of transparency of the construction company,	Rotterdams Dagblad 2018; Telegraaf 2017
2018	Resignation of councillor Pex Langenberg	NRC 2018
2019	Additional technical difficulties led to multiple delays and an additional budget deficit of 100 million euro's which was shared among the province, MRDR, Rotterdam, The Hague and province of South Holland.	Telegraaf 2019
2019	Completion extension railroad into metro line. Construction of metro station near the sea still pending and planned for 2022.	Haagsche Courant 2019

Table 16: Timeline HoeksLijn project

In 2012 the region of Rotterdam including 4 municipalities agreed on the conversion of an old train rail to a metro line. The total costs are estimated to be 318 million and the tram-line was supposed to end close to the beach near Hoek van Holland (Cobouw 2012; Rotterdams Dagblad 2014). The construction of the

²² Source: MRRD 2020

tramline, however, experienced a wide number of both technical and governance-related issues. The first problem arose because the municipalities refused to build a tunnel below the Strandweg near Hoek van Holland and instead choose an above-ground solution with frequent stops for cars (Rotterdams Dagblad 2016). Citizens from the small municipality wrote a letter to Rotterdam asking them to reconsider a tunnel below ground. After a year, the issue was still being discussed by the council of Rotterdam which remained opposed towards the required additional funding of 15 million (Rotterdams Dagblad 2016). This led to the first delay due to the citizen group filing a lawsuit about the possible negative consequences of the tramline construction (Rotterdams Dagblad 2017). The project also had a wide number of technical issues such as the discovery of asbestos near the construction site, old cables below the ground that needed to be removed and the embankment was too small for a metro line (FD 2017;2018). The council then forced an independent review of the performance of the councillor responsible for the project Pex Langenberg. This review indicated that he was unable to both lead the project impartially and did not fulfil the requirements to deal with its complexities. The extension of the tram towards the beach was also being reviewed due to its additional 50 million cost (Telegraaf 2017). However, the cancellation of this part of the tramline undermined the legitimacy of the project and was therefore agreed to be finished at a later date (AD 2017; FD 2018).

Based on the independent report, a wide number of issues were identified. The first one was the lack of preparation and underestimation of the complexity of the project. Secondly, the councillor of mobility Langenberg was not told of the complexities of the project by the urban planners of city development (Rotterdams Dagblad 2018). He was told that the inspection was not satisfied with the progress made on the project and that they would evaluate his performance (Telegraaf 2018). The issues surrounding the project led to his resignation in 2018 (NRC 2018). The technical difficulties continued to hamper the project including the continued absence of working software, faulty bridges and the decision to delay the construction of the beach station to 2021. This led to the compensation of multiple businesses close to the beach based on lost profits (Telegraaf 2019a). The metro eventually was completed with limited frequency due to continued problems with the software (FD 2019). The additional costs for the project caused by all the delays and difficulties were estimated at around 100 million. These costs were shared by the municipality of The Hague, Rotterdam and the province of South Holland in collaboration with the MRRD (Haagsche Courant 2018; Telegraaf 2019). The project's extension of the railroad was completed in 2019 but the last component and construction of the beach tram station are still planned for completion in 2022 (FD 2019; Haagsche Courant 2019b).

Most of the costs of the Hoekse Lijn are paid for by the province, municipality Rotterdam and Public Transportation South Holland while the operator RET does not directly invest a lot of money. The municipality of Rotterdam is the sole shareholder of RET but gives the company full independence for its operations which has led with success to a vast reduction in costs for the municipality (NRC Next 2017). However, part of its future projected profits was based on the exploitation of the HoekseLijn which has repeatedly been delayed and is still partly unfinished. Therefore, the municipality indirectly subsidizes future profits of a publicly owned company while remaining unwilling to build the tunnel near Hoek van Holland.

4.4.2.2: BLANKENBURGTUNNEL & NIEUWE MAASVERBINDING



Figure 13²³: Blankenburg Tunnel



Figure 14²⁴: Nieuwe Maasverbinding

The two large infrastructure projects related to improving the connectivity between the Southern and Northern part of the Rotterdam Metropolitan area are the Blankenburg Tunnel and the Nieuwe Maasverbinding. The Blankenburg tunnel has had many complaints during its planning phase because of possible damage to the ecosystem and recreational lake in the surrounding area (Rotterdams Dagblad 2013; De Persgroep Nederland 2016). Another reason for the complaints is the notion that the tunnel will only move congestion to other areas of the city instead of solving them (AD2012; 2013). Due to the high resistance from both surrounding citizens and nature organizations, the municipality changed the proposed plan by both capping the speed in the tunnel and compensating the loss of nature in other area's surrounding the municipality (de Persgroep 2015). Likewise, the removal of the cycling path due to the additional 10 million costs undermined the legitimacy of the project and further strengthened the

²³ Source: Vogelwacht Delft en Omstreken 2011

²⁴ Source: AD 2019

image of a car-friendly city council (NT 2014). The additional changes to the plan and removal of the cycling lane were analysed by the national government and approved in 2018 (FD 2018).

The Nieuwe Maasverbinding Bridge has a much more positive exposure in newspapers (PZC 2019a; 2019b; FD 2019; Rotterdams Dagblad 2019). This is likely due to the possible inclusion of a cycling path and the connection with the neighbourhood of Feyenoord in which the city's popular football club of the same name is located. The concerns were more linked to the approval of the project by the national government (AD 2019; FD 2019). Furthermore, the council has agreed to additional cycling and walking bridge from a different area to further stimulate the use of cycling and walking between the Northern and Southern part of the city (NRC 2020). However, the inclusion of the bridge does not solve the traffic issues bogging down Rotterdam due to the enormity of the problem and newly introduced bottlenecks in the system (PZC 2019). The alternative location was more attractive for the sub-urban area of Rotterdam and their surrounding municipalities while the Feyenoord version is more closely aligned with the demands of the urban centre (Polhuijs 2019). The decision to pick the more urban location was based on the needs of citizens of the South and the Feyenoord regeneration project. While the construction of the tunnel is generally met in positive regard, concerns regarding congestion remain and whether expensive infrastructure projects are effective instruments (PZC 2019c).

4.4.2.3: EMISSION ZONE 2015

The first introduction of an emission zone in Rotterdam was the 2008 ban on old diesel trucks. The introduction was not met with much opposition and public discussion and remains in effect (TTM 2008). The 2015 emission zone for 1992 gasoline and 2001 diesel cars for the northern and central part of the city, however, was met with a lot of criticism publicly and internally (Telegraaf 2015; 2015b; AD). Due to the criticism, the labour party started to doubt the fast implementation of the policy and indicated that more time might be necessary for citizens and business to remove their old gasoline and diesel cars (Rotterdams Dagblad 2015). The council, however, still agreed with its fast-tracked implementation and subsidies for the demolition of the old cars despite opposition from the national government that aimed to ban nationwide implementations of emission zones (Telegraaf 2015b). Due to the fast-tracked implementation and short 3-month preparation time, a large group of car owners successfully won a class file lawsuit. The verdict was in favour of the car owners and indicated that the fast implementation led to confusion and not enough preparation time for citizens to change their cars and the policy was therefore overturned (Verkeersnet 2018). The municipality reintroduced the policy with improved argumentation and successfully overturned the verdict of the previous judge and reinstalled the policy in 2018. (Verkeersnet 2018).

However, during both the year of its implementation and one-year absence the legitimacy of the project had eroded. One of the reasons that public perception of the measure changed negatively were the vague enforcement and high fines associated with the measure. The combined fines of 3000 cars meant that there was a public perception that the municipality highly benefited financially from the measure (Rotterdams Dagblad 2016). The ease at which citizens were unknowingly entering the zones meant a further increase in fines. This eventually led to many citizens ignoring the fines and (successfully) refusing payments further complicating its enforcement (Metro 2016). The combined measures of demolition subsidy and emission zone cost the municipality vast sums of money. These consisted of 5,86 million for training and camera's, 2,5 million for traffic signs and an awareness campaign and lastly 13,4 million for the demolition of old cars (VNG 2019). The total height of the 34 000 fines was 3 million but these were not given to the municipality but the national treasury. Another factor negatively impacting public perception was the fact that the emission zone started at a harbour area at which large cruise ships docked. These ships were responsible for the equivalent of 83 000 car emissions leading to the perception that the emission zone was not contributing to a reduction of emissions (NRC Next 2018)

Internally, three large political parties in the opposition (PVV, PVDA, DENK) started to campaign against the implemented measure during the 2018 elections. (NRC 2017; De Groene Amsterdammer 2018). While the PVDA initially supported the measure, they indicated that the heavy-handed approach of the councillor Langeveld undermined the legitimacy for the measure and similar future policies (NRC 2017). The effect of the measure was also called into question further eroding its legitimacy. The councillor Langeveld indicated that the measure led to a 35% reduction of old cars and directly linked this to improved air quality (VNG 2016). However, further research supported the courts' previous judgement that a direct correlation could not be made between the two and the statement by the councillor had to be amended.

4.5.1: DEN HAAG

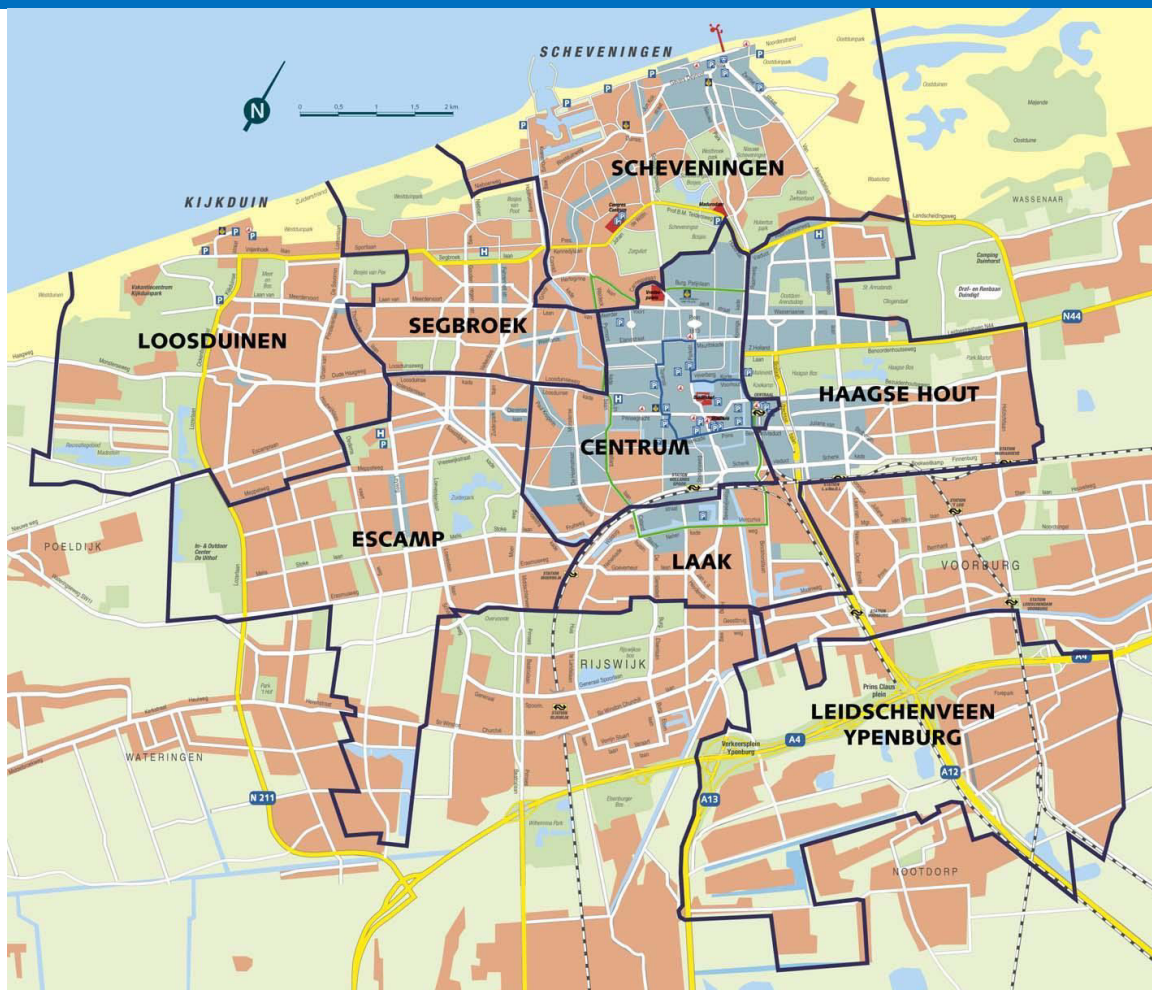


Figure 15²⁵: Municipal boundary and city area's

The city of The Hague has a population of 537.833 in 2019 and is known for the international court of justice and is the location for the central government of The Netherlands²⁶. In table 18 below is an overview of the policy plans of the municipality between 2008 and 2019.

²⁵ Woninghuur.nl 2020

²⁶ Allecijfers.nl 2020b

Type of policy papers	Overarching Strategies	Sources
<ul style="list-style-type: none"> ● Action plans ● Roadmaps ● Guidelines ● Council Nota's ● Parking Nota 	<ul style="list-style-type: none"> ● 1 Green deal ZES (Zero Emission 2030) ● 3 overarching strategies: (Clean-Air plan, Cycling plan, Parking-plan) ● Mobility Vision 2011-2020 	Den Haag 2009 Den Haag 2010 Den Haag 2011 Den Haag 2014 Den Haag 2015a Den Haag 2015b Den Haag 2015c Den Haag 2015d Den Haag 2015e Den Haag 2017a Den Haag 2017b Den Haag 2019a Den Haag 2019b

Table 17: Overview Policy Plans The Hague

Based on these policy plans indicated in table 17 and some additional articles, the municipal vision, policy implementation will be outlined. Besides, a short section on the politics of experiments will describe The Hague's innovation capacity based on organizations and internal frameworks.

4.5.1.1: MUNICIPAL VISION

Based on the car parking strategy, cycling plan and general mobility vision, it becomes clear that the municipality embraces a long-term approach with relatively few changes to policy papers (Den Haag 2009; 2010; 2011; 2015b; 2015c; 2017b). The policies can broadly be summed up as improving the quality of the tram network, improving the cycling network around the city facilitating the use of electronic cars and implementing emission zones. The clean-air documents, on the other hand, are often updated after 2013 to monitor the extent of air pollution in the city (Den Haag 2015a; 2015a; 2015e). Their updates, however, function only as a monitor and do not adopt new policies to reduce air pollution (Den Haag 2019b). The separate documents on car-sharing and electronic charging stations state-specific strategies for dealing with new technological innovations (Den Haag 2015d; 2017a). Based on these strategies, the municipality adopted several measures such as emission zones, car-sharing subsidies, stimulation of charging stations, high-speed cycling roads and improving the tram system by increasing the quality and comfort (Den Haag 2011). In terms of electronic cars, the municipality started implementing policies such as increasing charging stations within public owned space areas and placement on demand from 2014 onwards (Den Haag 2014). The emission zones are mainly in response to European standards banning old diesel trucks in city centres (Den Haag 2019b).

4.5.1.2: POLICY IMPLEMENTATION

In terms of local and regional infrastructure, cycling policies during the past 10 years have mainly been about improving the quality and quantity of the cycling roads and the construction of high-speed cycling roads in sub-urban areas (Den Haag 2011). The improvement of the tram system was done to increase the quality and comfort of passengers. This was achieved by purchasing new trams and improving the capacity and access to stations. These investments led to an increase in passenger satisfaction but only minimally increased the capacity and did not lead to an increase of overall tram use (de Leeuw 2019). The most important regional project during the past 11 years is the Randstad rail towards Rotterdam. This tram projects consisted of a new light rail connection vastly improving the connectivity between both Rotterdam and The Hague’s peripheral municipalities. The project, however, was complicated and led to multiple delays before its completion in 2011. The municipality has further focussed on road infrastructure after the credit crisis of 2008 due to the pressure of the province of South Holland (de Leeuw 2019²⁷). The car-sharing policies aimed to increase cars shared by 5000 at the end of 2018 through a 500-euro subsidy on car parking (Den Haag 2017a; Statenkwartier 2017²⁸). The Hague has experienced difficulties implementing paid parking throughout the city and still has numerous zones that are free of payment (Den Haag 2009). It implements paid parking using small sub-divisions within neighbourhoods. This policy is partly the result of implementing paid parking based on citizen requests. However, this approach has reached its limits and the municipality is now aiming to implement paid parking without the direct consent of its citizens (Den Haag 2009).

In conclusion, the municipal vision in terms of mobility policies has been consistent due to long term strategy according to a small number of policy documents. The policies within the papers have all been implemented except for its car and bike parking strategy.

4.5.1.3: POLITICS OF EXPERIMENTATION

In table 18 below, the two organizations tasked with stimulation of innovation within the municipality of The Hague are described:

Platform	Founded	Purpose and goals of the platform	Number of projects /Partners	Sources
Mobility Lab	2016	Stimulating Mobility Innovation through pilots	12	²⁹ Mobility Lab 2019
Platform STAD (Platform 31)	2014	Independent policy advice and discussions surrounding urban developments	3 Partners and multiple events	³⁰ Platform STAD 2020

Table 18: The Hague Mobility Innovation organizations

²⁷, The general implemented policies for mobility were relatively low risk politically. Multiple successive councillors were uninterested in working on additional projects or solutions for mobility problems. This has led to the relative inertia of The Hague mobility policies and lack of flexibility regarding the municipal vision

²⁸ Source: Statenkwartier 2017

²⁹ Source: Mobility lab 2020

³⁰ Platformstad 2020

The Hague has in terms of experimentation limited policies and lacks an extensive network aimed at the facilitation of innovations. Their financing of the Rotterdam placed Mobility lab, however, has recently led to several mobility pilots in The Hague. Examples of this are pilots such as the DEEL toolbox in which neighbourhoods can set up their car-sharing cooperation to share the burdens of cost and to improve user connectivity (Mobility Lab 2019). In terms of bottom-up feedback, the city has in 2014 set up the Platform 31 to receive independent policy advice on urban developments. This organization functions as a way to link start-ups, knowledge institutes and citizens to solve difficult urban developments. In terms of mobility it, however, remains limited to increasing cycling use and enhancing the perception of electronic cars (Platform STAD 2020³¹). In conclusion, the innovation capacity of The Hague is relatively limited despite some positive signs such as the contributions made by the Rotterdam located Mobility Lab.

In the next section, sites of urban politics are described. These consists of the Randstad rail and car parking based on the frequency and intensity of newspaper articles in addition to the Konings-Leyenburg Corridor emphasized by policymaker Kees de Leeuw.

4.5.2: DEN HAAG PROJECT ANALYSIS

In table 19 below the sites of urban politics are described together with their type of mobility and relevant criteria of legitimacy.

Rotterdam Projects/Policies	Timeline Analysis	Type of Mobility	Important Elements
Randstad rail	1990-2019	Local/Regional Infrastructure	<ul style="list-style-type: none"> ● Stakeholder Participation ● Consistency Between Government Layers ● Consistency Municipal Vision ● Transparency/Monitoring ● Comprehensiveness
Koningsgracht & Leyenburg Corridor	2001-2017	Cycling/Walking	<ul style="list-style-type: none"> ● Consistency Municipal Vision ● Stakeholder Participation ● Comprehensiveness
Car Parking	2014-2019	(Gasoline/Diesel) Car	<ul style="list-style-type: none"> ● Comprehensiveness ● Consistency Between Governmental Layers ● Stakeholder Participation

Table 19: Overview projects, policy and policy problems

4.5.2.1: RANDSTADRAIL

There are a lot of similarities between Randstad rail and the North-South metro line. Both projects went way over their budget and secondly, risks were unaccounted for during the construction project leading a negative perception and resignation of a councillor (Volkskrant 2007). Additionally, like the North-South metro line, the trajectory was changed due to budget cuts in the planning phase. The project initially was supposed to not only connect The Hague and Rotterdam but also Scheveningen and Zoetermeer directly (Haagsche Courant 2005). Lastly, the project faced numerous technical difficulties during its implementation and rejected public feedback (Haagsche courant 2003). During the planning

³¹ Platformstad 2020

phase of the project, there were concerns regarding both the safety of surrounding traffic at crossings and passengers (Haagsche Courant 2013).

The safety problems with the project led to public concerns when two accidents caused 15 people to become injured (ANP 2006). The accidents happened despite the approval of safety inspectors and led to a negative perception of the project (Reformatoisch Dagblad 2008; Volkskrant 2007b). Furthermore, technical issues caused further delays to the whole completion of the project. The premise of the project was increased tram speed and faster travelling times (Volkskrant 2007a). By having slower travelling times and more delays it undermined the legitimacy of the project. The moment trams reached their promised speed and time schedules satisfaction went up and the troubled construction of the project was quickly forgotten (Eindhovens Dagblad 2020). The current issues facing Randstad rail is under capacity and lacking means to divert traffic through alternative paths. Due to the cancellation of bus-lines, the use rate of the Randstad rail was artificially raised and forced people to use the tram instead of the bus. The problem of under-capacity is, therefore, to some extent the result of budget cuts towards public transportation.

4.5.2.2: KONINGSCORRIDOR & LEYENBURG CORRIDOR

The Koning corridor is an extension of the Randstad Rail network to the beach town Scheveningen and the neighbourhood in the South-East of the city Binckhorst. The cities of Zoetermeer, Delft and Rotterdam are intended to be attached to this new extension to establish a regional light rail network. There is a relative lack of reporting on this project by newspapers, but internally in the municipality, it has been debated for years as indicated by policymaker Kees de Leeuw (2009). The idea was to expand the Randstad Rail metro from Rotterdam towards the city of Delft. This idea was abandoned due to the financial difficulties caused by the tramline and because of a lack of interest by citizens. During the planning phase, citizens were consulted about how it would affect them by reducing the number of parking space, reduction of cycling lane or pedestrian road. Their response to these possible effects of the projects was very negative which led to a cautious approach by the municipality and the subsequent removal of the project (de Leeuw 2019). Due to the immediate issues of mobility, the project has now slowly drifted to the forefront as a possible solution (AD 2018; 2019). The lack of resources, however, makes this project highly reliant on support from the provincial and national government. Another extension of a tram-line the Leyenburg corridor improves travelling time by more than 10 min and increases capacity between South-West and central station (Den Haag 2019; AD2019) Both projects also compete with a regional infrastructure project called the Randstad rail extension towards Zoetermeer making their completion unlikely in the short term.

4.5.2.3: CAR PARKING

The municipality of The Hague has struggled with the issue of car parking for the past two decades. This is evident based on the municipality's difficulties with implementing paid car parking in most areas of The Hague. Its approach has mainly revolved around introducing paid parking street by street leading to unequal situations and resentment towards citizens in free areas. Initially, within the council, the Christen Democrats (CDA) disagreed with the measure (Haagsche Courant 2007; 2008). However, successful implementation of the policy in the centre reduced unintended occupation of parking lots and reduced car use (NRC Handelsblad 2008; AD2008). The dissatisfaction on the new policy remained and did not subside due to the street by street approach. Some neighbourhoods had paid car parking while others did not which led to the placement of cars in these free areas (Haagsche Courant 2009a; 2009b). While parking permits were relatively cheap, citizens were still unwilling to buy them on a large scale and preferred to look for free places around the city (Haagsche Courant 2010a; 2010b). The difficulties and issues caused by this approach led to the labour party suggesting a city-wide approach and to vastly increase the permit costs for the owners' second car. The Hague has relatively a lot of households with two cars which leads to more occupied parking space (Telegraaf 2013; Haagsche Courant 2013). This plan, however, was never implemented due to public and political opposition to the plans. Furthermore, while initially paid parking contributed to a reduction of occupied space, it eventually led to a similar rate of occupation in the streets (Haagsche Courant 2010; 2014a; 2014b). The issues surrounding car parking spread to the municipality of Voorburg due to the completion of Randstad rail and increased popularity of chain mobility (Haagsche Courant 2017). The small municipality remained free of paid parking which led to cars being parked in the streets by commuters who would then use the tram to reach their destination around the city (Haagsche Courant 2015). Additional construction of large parking spaces in combination with making parking more expensive became a topic again when the political parties reduced the cost permits leading to 5000 additional second cars (Haagsche Courant 2017; Telegraaf 2017). The municipality also indicated falsely according to local citizens, that there was a lot of support for the introduction of paid parking around The Hague Market based on enquiries. Citizens refused to pay and launched a wave of complaints to force a reversal of the policy. Initially, the councillor would not budge and uphold the paid system but eventually relented under increasing pressure both internally and externally (Omroepwest 2017; Groep de Mos 2018). According to the Leeuw, the introduction of paid parking was made increasingly difficult when one political party Group de Mos, started using the outrage to promote his political party by offering citywide free parking (de Leeuw 2019; AD 2019). The political effort spent on introducing paid parking in multiple areas would have gone wasted and reverted to the chaotic situation of a city centre full of cars (de Leeuw 2019). Presently, car parking remains a complicated mobility problem that remains unsolved (BN 2020).

4.6: IDENTIFICATION POLICY MIXES AND SITES OF URBAN POLITICS

Based on the analysis of the municipal vision, policy implementation and politics of experimentation and newspapers we can answer the sub-question 3:

What has been the local policy mixes in regards to sustainable mobility employed in the Dutch Randstad Metropole between 2008 and 2019 and which specific initiatives and projects turned out to be sites of urban politics?

The policy mix within the Randstad metropole is based on several overarching strategies: Car Parking strategy, cycling strategy, clean air strategy and for the municipality of Amsterdam Smart City. These strategies are connected to a range of implemented policies in each municipality. In terms of car parking, these consist of parking restrictions paid parking and car-sharing stimulation measures. In terms of cycling, the policies adopted include investments into cycling roads and cycling parking lots both in

residential areas and near central stations. The clean-air measures are often based on emission zones that ban old diesel and gasoline cars within a certain radius. Increase in charging stations and other measures stimulating electronic vehicles are often connected to clean air policies within municipalities. Within the policy mixes of municipalities, two main issues can be identified: Public transportation support and the car parking strategy. The stimulation of public transport is often mentioned throughout all policy plans as crucial for the city. In practice, however, municipalities have introduced budget cuts which have negatively influenced the usage of public transportation. While trams and metros are being stimulated and constructed, bus-lines are often removed negatively impacting public transportation.

Even though the municipalities have relatively similar policy mixes, they do differ on their implementation. In terms of car parking, for example, Utrecht has chosen to focus on new housing projects and the stimulation of car-sharing through a 50 % reduction of parking license costs. The Hague offers similar solutions to Utrecht but instead of a discount on parking, it offers a direct subsidy. Amsterdam lacks these mechanisms but has the highest waiting lists and higher costs for parking which have led to a natural adaptation of car-sharing in the city (Amsterdam 2017a; Utrecht 2015a). Lastly, Rotterdam has emphasized the P+R's for the location of electronic charging stations to not contradict car parking policies on the street (Rotterdam 2016). These are followed by increasing costs of street-level parking and reducing those of large municipal-owned garages. Another example is the specific local policies in terms of innovation, consists of Amsterdam's smart city approach to facilitate experimentation and Rotterdam's bottom-up framework while Utrecht has a European innovation project IRIS (Verkeersonderneming 2019; Amsterdam 2019b).

Likewise, there are both common themes for sites of urban politics and elements specific to a municipality. The common element is that (large) infrastructure projects are often faced with both technical but also governance challenges and implications for legitimacy. Specific sites of urban politics consist of smart city in Amsterdam, cycling congestion in Utrecht, car parking in The Hague and the emission zone in Rotterdam. The implementation of the smart city framework in Amsterdam means that expectations towards the municipality in terms of facilitation increase and experiments become more political (Ring Ring 2019). While Amsterdam also has issues with cycling congestion, they are not to the extent of Utrecht. Lastly, the political issues surrounding car parking in The Hague is due to their method of implementing paid parking and their style of communication. The municipality has misleading methods of using citizen support. This is evident in their parking policy plan that indicates that citizens reporting parking problems in their neighbourhood will receive a recommended plan that involves paid parking (Den Haag 2007). Demanding a solution to a lack of parking space, however, is not directly equate acceptance of paid parking. Lastly, the implementation of emission zones while facing some resistance, have not had a high extent of politicization in any municipality except for Rotterdam. This is due to the fast-tracked implementation that was deemed illegal by a court, misleading use of statistics and lack of support of both citizens and opposing political parties. This led to the eventual abandonment of the emission zone in 2019.

In conclusion, there are both common themes and policies of the municipalities in the Randstad and specific characteristics. Projects, policies and policy problems are sites of urban politics due to the intensity of the problem and the lack of legitimacy regarding policy implementation.

5: EVALUATION LEGITIMACY GOVERNMENTAL POLICIES

Based on analysis of the local policy mixes and the identification of sites of urban politics in the previous chapter, the legitimacy of mobility policies in the Randstad can be evaluated to answer the sub-question: *To what extent were the policies regarding sustainable mobility between 2008 and 2019 legitimate according to the sub-criteria identified in response to sub-question 3?*

5.1: EVALUATION OF LEGITIMACY RESULTS RANDSTAD

The table below shows the evaluation of legitimacy based on the criteria established in Chapter 2. These consist of consistency of municipal vision, consistency between governmental layers, transparency & monitoring, innovation capacity, stakeholder participation and comprehensiveness of policies. The description of the municipal vision and policy implementation is linked to the criteria consistency of municipal vision, comprehensiveness and in a lesser extent stakeholder participation and transparency & monitoring. Furthermore, the criterion for innovation capacity is based on chapter 4's analysis of the politics of experimentation. Lastly, the analysis of sites of urban politics is linked to their respective relevant criterion described in chapter 3.

As previously explained in Chapter 2, the rating system consists of ++, + and +/- due to the relatively high degree of legitimacy of Dutch mobility policies (Pojani & Stead 2015). For each criterion, the ++ rating indicates almost full adherence. The + rating means that the municipal governmental adheres to a large extent to the criterion but could be improved to a minor extent. The score of +/- means that the municipality's underlying legitimacy regarding this criterion is limited and could be further improved upon. The final legitimacy score consists of the same rating system. The rating of ++ would mean that the municipality legitimacy is unsurpassed and extensive in terms of urban mobility. The score of + means that the municipality generally has legitimate governmental policies. Finally, the final score of +/- means that the municipality legitimacy of governmental policies is under pressure and should be improved.

Table 20: Evaluation Legitimacy Randstad

Evaluation Criteria	Amsterdam	Utrecht	Rotterdam	The Hague
Consistency Vision	+ : Inconsistent in terms of public transportation and cycling, consistent in terms of smart city policies, air pollution plans and emission zoning	+ : Policy plans before 2014 relatively inconsistent combined with a lack of implementation. Subsequent plans show improved consistency and implementation of projects.	++ : Cohesive vision on the realization and role of multiple types of mobility. Implementation of various projects and policies has also been effective apart from emission zoning.	+ : In terms of general mobility policy consistent due to long term strategy and use of one policy document. Parking strategy and specific policies inconsistently implemented.
Consistency Between Governance Layers	+/- : Coordination between governance layers functional in terms of infrastructure and limited in terms of innovation.	+/- : Frequent conflicts with the province and national government about the allocation of resources and projects. All three governance layers support different strategies leading to misalignment.	++ : Cooperation between different layers has been extensive since 2014 through the MRDR.	+ : There is sufficient Cooperation between province and municipality on regional infrastructure. Coordination with the national government is lacking leading to insufficient resources.
Transparency and Monitoring	+ : Decision making is transparently based on policy plans for infrastructure but could be improved for innovation. Monitoring is done sufficiently.	+ : Decision making is transparent within the policy papers but monitoring and transparency of decision-making during projects can be improved.	+/- : Reliability of data undermined both in terms of cycling rate and car pollution. Monitoring of projects and transparency of decision making below average.	+/- : Decision-making process lacking regarding notable policies and projects.
Innovation Capacity	++ : The extensive network of organizations tasked with innovation allowing for a great environment for novel ideas. Continuation of support and communication could be improved.	+/- : While Utrecht has a cluster of knowledge institutes, the municipality has no clear plan to stimulate or support mobility innovation.	+ : Innovation capacity through multiple organizations is present. Discontinuation of mobility arena and innovation monitoring could be improved.	+/- : Cooperation agreement with Rotterdam Mobility lab but no clear policy plan in place to foster mobility experimentation.
Stakeholder Participation	+/- : Stakeholders taken into account, but the quality of deliberation is insufficient and does not take alternative options into account. There is also a lack of input from non-private and governmental actors into decision making.	+/- : Input from stakeholders limited to the decision making of projects. Public consultation for tackling mobility problems also lacking.	++ : Policy input through temporary Mobility Arena. Influence from grassroots happy streets initiative also seen in Rotterdam's City Lounge approach. Support, however, was discontinued.	+/- : Input by citizens is used but the quality of deliberation is lacking during the decision-making process.
Comprehensiveness Policies	+ : There is a lack of connectivity between various policy plans and different kinds of mobility.	+/- : Misalignment between pedestrian and cycling objectives. Connectivity and consequences of policies also not clearly outlined.	+ : Connection between cycling, car use and public transport outlined in policy plans leading to a more coherent vision and connectivity between various modes of mobility. Lack of consistent support for cycling in some projects and	+/- : Connectivity between policy plans is lacking and little to no consequences are outlined
Legitimacy Score:	+	+/-	+	+/-

In the following subsections, the evaluation of the legitimacy of governmental policies of each municipality shown in table 20 is further elaborated upon.

5.1.1: EVALUATION LEGITIMACY GOVERNMENTAL POLICIES AMSTERDAM

The municipality of Amsterdam has several strengths and weaknesses regarding the legitimacy of governmental policies based on the evaluation criteria:

Firstly, the municipality of Amsterdam's *consistency of the municipal vision* is largely addressed based on its implementation of smart city, emission zoning, general cycling policies and electronic car strategy. However, it contradicts itself on public transportation. The aim stated within the policy papers is to increase the use and expand public transportation. The amount of (ongoing) budget cuts and removal of bus and tramlines mean that in effect public transportation is being constrained not expanded. The policy plans regarding cycling do not take new developments into account such as bike-sharing and despite increased demand have not further increased available parking space. Lastly, in terms of car parking, the municipality contradicts itself on its car parking strategy. It offers electronic cars free parking between 2016-2019 which could lead to increased occupancy and further demand for parking space instead of a reduction.

Secondly, *the consistency between governmental layers* could be improved upon. There is no clear framework for cooperation between the province of North Holland and the MRA. This means that specifically regarding complex regional projects coordination is average and could be improved. This has resulted in conflicts during complex projects such as the North-South metro line. While there was initial support behind the project among all governmental layers, difficulties experienced during the project and competition for resources meant that it suffered unnecessary delays in its planning phase. The coordination of the innovation agenda is also severely limited joint projects or funding.

Thirdly, *in terms of transparency and monitoring*, decision making is clearly communicated within policy plans for infrastructure but could be further communicated in the municipality's innovation strategy. Monitoring could be improved during the planning phase as is shown by the lack of adjustment of bike parking spots and negative consequences regarding the drilling for the North-South Metro line. Reports on the metro-line and the instalment of the commission meant that there are evaluations after projects that contribute to increased transparency. Monitoring of innovation while present, could also be improved upon within policy papers.

Fourthly, *the innovation capacity* within the municipality of Amsterdam is relatively extensive and consists of a clear overarching strategy through its smart city framework. In addition, there is a vast network of organizations tasked with innovation allowing for a great environment for novel ideas. The continuation of support and communication towards start-ups are a minor element that could be improved in order to realize up-scaling.

Fifthly, the municipality could improve its *stakeholder's participation*. The municipality integrates participation to some extent, but the quality of deliberation is insufficient and does not take alternative options into account. The North-South metro-line is evidence of the municipality using public polls and alternative committee's but ultimately rejecting them. While the poll reached an insufficient amount of voting support the results were predominantly negative towards the metro-line. Similarly, the subsidence report organized by civilians was rejected and not taken into full consideration. Besides, there is also a lack of input from non-private and governmental actors into decision making for governmental policies.

Finally, *the comprehensiveness* of the municipal policies is below average and could be further improved upon. The lack of cycling alternatives for the northern part in the city despite the construction of the North-South Metro leads to missed opportunities. Likewise, the consequences of the removal of tramlines and bus lines are unclear and not indicated in the policy plans. However, there are

some limited and diverse plans on the possible extensions for the metro and the consequences for mobility.

In conclusion, the legitimacy of governmental policies of Amsterdam is relatively high but could be improved upon especially in terms of stakeholder participation.

5.1.2: EVALUATION LEGITIMACY GOVERNMENTAL POLICIES UTRECHT

The municipality of Utrecht has several strengths and weaknesses regarding the legitimacy of governmental policies based on the evaluation criteria:

The consistency of the municipal vision clearly outlines plans for parking, cycling and reduction of car use. However, lack of continuity with previous councils has led to inconsistent decision making on the Uithof tramline and Moreelsebrug leading to their subsequent delays and problematic constructions. Outside of the two projects, the municipality generally implemented all its projects and policies during the past 11 years.

In terms of *consistency between governmental layers* there are a wide number of issues, as indicated by the Uithof tramline and extensions of highways. The national government, province and municipality generally compete and do not coordinate or cooperate on projects such as the Uithof tramline. Communication is also generally weak, leading to a relative lack of resources from the national government.

The monitoring and transparency of the municipal policies and projects is average based on its policy plans and multiple projects and policies. The planning and issues surrounding the Moreelsebrug are partly caused by a lack of transparency regarding the renewal project for the central station. The Uithof tramline project suffered from a lack of transparency due to the inadequate performance of the responsible municipal and provincial deputy specifically regarding the technical issues. However, the reporting afterwards on the issues surrounding the project was extensive. The municipality now also aims to include a framework for complex projects and policies to improve monitoring and transparency of their decision making.

In terms of innovation capacity, the municipality does not mention any kind of start-up support or cooperation with knowledge institutes to realize mobility projects. There is only some limited support for innovation through the European IRIS project. There is also no monitoring of progress on the cooperation between the knowledge institutes, living labs and municipality.

Regarding *stakeholder participation*, the municipality has a relatively low rating due to the lack of integration in both their policy plans and execution of projects.

Lastly, *the comprehensiveness* can be improved based on the municipalities' lack of foresight regarding the Uithof tramline's negative influence on cycling safety and the central station parking lot congestion. The connectivity between various policy plans and different kinds of mobility can also be further improved. For example, the Moreelsebrug in Utrecht and the agreement with the owner of the shopping mall meant that while the city intended to improve connectivity between the East and West it had simultaneously anchored the separation by forcing pedestrians to walk through the shopping mall. The reason for this was a funding deficit for improving the shopping mall area and the demands of the new owner to only invest if the municipality agreed to a clause that reduced alternative routes near the station. However, this agreement was inconsistent with proposed plans for mobility and further aggravated the present problem of pedestrian congestion surrounding the central station.

In conclusion, the legitimacy of the governmental policies of Utrecht rates high for some criteria such as transparency and monitoring and consistency of municipal vision but could be improved for the innovation capacity, stakeholder participation, comprehensiveness and the consistency between governmental layers.

5.1.3: EVALUATION LEGITIMACY GOVERNMENTAL POLICIES ROTTERDAM

The municipality of Rotterdam's has a relatively high adherence to the evaluation criteria. Based on the evaluation of the legitimacy of the governmental policies several strengths and some weaknesses can be identified:

The *consistency of the municipal vision* is great based on its relative integration of various policy plans and a coherent overarching strategy. The main inconsistencies in the past 11 years are regarding emission zoning and its failed implementation.

The *consistency between various governmental layers* had been negative in the past leading to a lack of investments within the region. This changed since 2014 as evident by the handling of setbacks on the Hoekse-Lijn light rail project. The deficit in resources caused by several set-backs was shared among the MRDR, province and municipality without much conflict. There is also more attention given to the integration of the region as a whole instead of solely focusing on the urban areas of Rotterdam. The extent of successful coordination is further seen in the now planned Maas connection and its support from the province, region and national government.

Regarding *monitoring and transparency*, the legitimacy is below average due to several issues. The use of inconsistent data for the emission zone decreased the credibility of the municipality and was part of the reason for its eventual abandonment. While not seen as a legitimacy issue, the data used for the cycling rate was also vastly overestimated and led to a readjustment in recent policy plans. This could be seen as both positive in terms of monitoring and negative in terms of transparency due to the lack of communication regarding the earlier data.

The *Innovation capacity* within the municipality is stimulated through multiple organizations but suffers from the discontinuation of the mobility arena and a lack of innovation monitoring. While a large number of pilots and projects indicate a great climate for innovation, the pilots revolve mainly around solving mobility problems such as transportation of freight and logistics.

In terms of *stakeholder participation*, the municipality of Rotterdam has used feedback from citizens through their initiative the mobility arena. This has led to the formulation of a vision for the city that emphasizes additional public space for pedestrians and cycling. An example of the integration of citizen feedback is the renewal of the cool single in a cycling and pedestrian-friendly boulevard. The issues surrounding the tunnel under the road near Hoek van Holland, however, show a lack of flexibility in acceptance of alternative solutions.

Finally, the *comprehensiveness* of the policy mix shows clear connectivity between the plans for various modes of mobility. The connection between cycling, car use and public transport outlined in policy plans leads to a more coherent vision and connectivity between various modes of mobility. Lack of consistent support and for cycling in some projects such as the Blankenburgverbinding however, means the legitimacy falls a little short of being great.

In conclusion, the legitimacy of the municipality of Rotterdam's policies is very high for the criteria of stakeholder participation, consistency of municipal vision and consistency between governmental layers. The criterion of transparency and monitoring could be improved as is evident by the implementation of the 2015 emission zone.

5.1.4: EVALUATION LEGITIMACY GOVERNMENTAL POLICIES THE HAGUE

The legitimacy of the municipal policy mix of The Hague falls slightly behind the other municipalities based on the evaluation of its governmental policies. Based on this evaluation several weaknesses and some strengths can be identified:

The *consistency of the municipal vision* of The Hague scores relatively high due to the close adherence to its 2010-2020 mobility strategy. However, the use of one single policy plan for a long period of 10 years means that the municipality has barely adopted changes to tackle new mobility problems within the city. The exception to this is the additional policy plan for car-sharing and its integration as a solution for the car parking problem. The ineffective implementation and rationale behind the introduction of paid parking, however, indicates a lack of consistency in the municipality vision for this particular issue. Furthermore, the vision of the municipality has been unable to successfully manage the mobility flows during the past 10 years leading to the current congestion problems and lack of new tramlines, policies for cycling and effective support for pedestrians. This means that while there is a municipal vision and it is being adhered to, its external legitimacy is limited and should be improved.

In terms of *consistency between governmental layers*, there is sufficient cooperation between province and municipality on regional infrastructure projects such as Randstad rail. Coordination with the national government is lacking leading to insufficient resources and the subsequent lack of mobility projects.

In terms of *transparency and monitoring*, the decision-making process is lacking regarding some notable policies and projects. The rationale behind the introduction of paid parking is inconsistent and implemented on an unclear street by street approach. However, there is some monitoring on the development of car-sharing and the effect of policies such as the permit subsidy.

In terms of *innovation capacity*, the municipality could further improve upon its policy mix. The monitoring of innovation could be improved and integrated into its strategies and outside of the agreement with Rotterdam Mobility lab, there is no organization in place to support mobility experimentation.

For the criteria *stakeholder participation* the municipality uses stakeholder input for new tramlines and the parking space for The Hague market. The communication and the use of this public input, however, are selective and lead to miscommunication between the municipality and its citizens. Furthermore, the quality of deliberation could be improved to include alternative solutions for the policies of paid parking.

Lastly, in terms of *comprehensiveness*, connectivity between policy plans is lacking and limited possible consequences are outlined outside of car-sharing and construction of P+R facilities. Possible consequences of projects and policies outside Randstad rail are also not outlined in the municipalities' strategies.

In conclusion, the legitimacy of The Hague's governmental policies is relatively high in terms of consistency of municipal vision, coordination between governmental layers and transparency & monitoring. It could be further improved upon for the criteria of stakeholder participation, innovation capacity and comprehensiveness.

5.1.5: LEGITIMACY GOVERNMENTAL POLICIES RANDSTAD

Based on the evaluation of the legitimacy of governmental mobility policies in the Randstad the 4th sub-question can be answered: *To what extent were the policies regarding sustainable mobility between 2008 and 2019 legitimate according to the sub-criteria identified in response to sub-question 3?*

The municipalities of Rotterdam and Amsterdam have the most legitimate governmental policies compared to Utrecht and The Hague. The legitimacy of the Randstad area has a number of strengths and weaknesses based on the evaluation of the criteria established in chapter 2. Some of these strengths are specific to certain municipalities while others are common among all four cities. The general strengths of the governmental policies in the Randstad consist of their vision and general policy implementation. All four cities have four interlinked strategies for the realization of sustainable mobility. However, some cities like Rotterdam score higher in terms of legitimacy due to a higher degree of integration of various objectives in a more coherent vision. The consistency between governmental layers is a criterion that both indicates the strength of the municipality of Rotterdam and The Hague while simultaneously indicating a weakness for Amsterdam and Utrecht. Coordination and cooperation between the national government, province and municipality can, in general, be improved and other municipalities should use Rotterdam as a positive example.

A common weakness among the four municipalities is the comprehensiveness of their policies and their stakeholder participation with the exception of Rotterdam. Within policy papers and the implementation of projects, municipalities tend to perceive them in isolation of each other. The possible consequences of one policy are not linked to those of another as is evident by the objective to reduce car parking but simultaneously offering subsidies for electronic cars in the municipality of Amsterdam.

Lastly, in terms of innovation capacity both the municipality of Amsterdam and Rotterdam have a relatively extensive network of living labs and integrate experiments in their governance approach. The municipalities of Utrecht and The Hague, however, lack the internal frameworks and facilitation of innovation and should adopt measures more in line with Amsterdam and Rotterdam to improve the legitimacy of their policies and projects.

Based on the evaluation of the legitimacy criteria, several key lessons can be identified for comparison in the next section.

5.2: LESSONS FROM COMPARISON MUNICIPALITIES

Based on the previous chapters the 5th sub-question can be answered: *What lessons can be derived from this evaluation about urban politics, mechanisms to influence urban politics processes and the role of legitimacy therein?*

These findings consist of six key lessons concerning the urban politics of mobility:

- **Place-based bottom-up involvement in the urban planning process:** The policy of car parking in the Hague and bike parking in Amsterdam indicate that citizens should be part of the planning process and offered an alternative such as a P+R or underground cycling parking lot. In the case of car parking in the Hague, this meant that reducing the allocated parking spaces should have simultaneously be done with increasing them at an alternative location relatively close by to the place of removal. This way legitimacy for projects faced with NIMBY sentiments can be enhanced.
- **Maintain consistency between policy plans while enabling flexibility for developments:** Consistency between policy-plans can contribute to enhanced internal legitimacy. It can, however, also lead to stagnation of potential policies and lead to risk-free solutions such as the

construction of cycling roads investments into the quality of trams. Some degree of flexibility is necessary however, to devise policy plans for innovations.

- **Consistent communication and support for innovation:** Based on the interview with the owner of Ring Ring and the lack of consistent support for innovation platforms in for example Utrecht, it is clear that consistent communication between start-ups and the municipality enhances possibilities for innovation and experiments. Maintaining consistent support for high potential start-ups also puts municipalities in a better position to improve their innovation capacity. Even though the municipalities do offer themselves as launching customers for start-ups, scaling up of innovations remains difficult due to the required increase in funding. Likewise, the existence of multiple organizations tasked with entrepreneurs and innovation in Amsterdam and their continued support leads to improved networking capacity for start-ups and further increases the exposure of their pilots/experiments. Therefore the platforms stimulate “seeds” and contribute to new innovative ideas that could solve complex mobility problems.
- **Monitor Innovations and establish internal guidelines:** While flexibility in the setting of a living lab is desired, monitoring of possible negative effects of innovations is required. The example of bike-sharing in Amsterdam shows that complete lack of regulation can lead to an aggravation of the problem. Due to a lack of rules, it became a free for all causing bike-sharing companies to negatively affect the amount of bike parking spaces. By monitoring innovations and their effects, municipalities are better equipped to devise effective strategies for both negative and positive effects of innovations. Currently, too much reporting is limited and does not include what experiments are already occurring in the city and what it means for innovative solutions. If the municipality wants to actively steer the process of planning a location or experiment it requires guidelines to deal with the rules and procedures. If not, the conflict will ensue internally between departments with an over-reliance on making exceptions. The need for internal guidelines is also described in the recent Smart City plan for the municipality of Amsterdam and would enhance internal legitimacy (Amsterdam 2019).
- **Cooperate between governmental layers and coordinate policy agendas:** Multiple projects such as the Uithof tramline and North-South metro show that misalignment and distrust between the province and municipality lead to reduced legitimacy for the project. This can further result in additional communication and coordination difficulties during the course of the project. Establishing a combined agenda and overarching strategy within each region in cooperation with the province and national government can be facilitated through regional organizations such as the U16, MRA and MRDR. While this would not remove contention for resources, it would establish a common strategy according to which the region can move towards sustainable mobility.
- **Account for risks within infrastructure projects:** Risks are often not properly accounted for large infrastructure projects especially in the regional context. The Uithof tramline while local is an example in which the municipality purposely misrepresented the risks associated with the project to reduce the budget. This was done to make the proposal more attractive for the province of Utrecht but eventually caused additional costs and further negatively impacted the relationship between both governmental layers. There are several ways for municipalities to account for risks for large scale infrastructure such as the inclusion of a peer panel, integration of public opinion, offering block grants and penalizing responsible governmental and private agents (Flyvbjerg 2009).

6: DISCUSSION AND CONCLUSION

6.1: CONCLUSION

This research is part of a wider scientific debate on the role of legitimacy for the implementation of governmental policies. This discussion has become more relevant over the past 10 years due to the integration of sustainability and the increasingly political nature of mobility policies. The scientific debate surrounding legitimacy and sustainable mobility has emphasized the role of governments in facilitating the transition. Because implementations of mobility policies have become more invasive and affect individual freedoms, it is important to establish legitimate governmental policies. Governmental policies that are illegitimate reduce the rate of transition and in the worst circumstance can revert positive change (Edmondson et al 2019; Rogge et al 2016; Flanagan et al 2011). In addition, the academic debate focusses on the effectiveness of governmental policies, interventions or the contribution to reducing emissions (Boogaard 2012; Börjesson & Kristofferson 2015). This approach, however, misses the political aspect of real-life decision making and what constitutes a legitimate policy (Christiansen 2018). Governmental policies are not simply the result of the identified needs and wants by expert urban planners (Jensen 2011; Westley et al 2011). Additional Important aspects need to be considered such as legitimacy, the role of citizens and urban experimentation. The creation of governmental policies is therefore not just the result of objectives but the manifestation of urban politics (Bulkeley et al 2013; Isakson & Richardson 2009). Within the academic debate surrounding mobility, there is a lack of evaluation of legitimacy and description of governmental policies which this research aims to address. This has led to the main question:

What the municipal vision and policy implementation can be identified regarding urban mobility in the Randstad area of the Netherlands between 2008 and 2019 and to what extent are they established on a legitimate basis?

In order to answer this question, five steps are required. The first step within this research consists of identifying criteria that enable both the systematic description and the evaluation of the legitimacy of governmental policies. This was done by analysing the policy mix, innovation & governance, transition theory, smart city and transportation management literature.

The second step uses this analysis to establish both a framework for the evaluation and systematic description of governmental policies. Based on the previous analysis, the policy mix literature and specifically Rogge et al's building blocks have been identified as crucial elements for both the systematic description and evaluation framework. The criteria for the systematic description consist of the *municipal vision*, *policy implementation* and *politics of experiments*. The systematic description of the *municipal vision* is based on Rogge et al's concept of the principal plan and leads to an overview of the overarching strategies and their extent of integration over the past 11 years. The *implementation of policies* is based on the concept of the instrument mix and indicates which policy instruments were used and how they were implemented to achieve policy objectives. The *politics of experimentation* criteria consist of the organizations that each municipality support or set up, the internal frameworks and general role in facilitating innovation. The framework for evaluation of legitimacy consists of six criteria: *The consistency of the municipal vision*, *consistency between governmental layers*, *transparency & monitoring*, *innovation capacity*, *stakeholder participation* and *comprehensiveness*. The first criterion *consistency of municipal vision* indicates the extent of continuation between policy plans and whether they are integrated cohesively. The second criterion *consistency between governmental layers* consists of the concept of coordination and identifies the extent of cooperation between governmental agencies. The third criterion *transparency & monitoring* indicates the extent of reporting on progress and

complexities during and after the implementation of policies. The fourth criterion *innovation capacity* is based on the description of politics of experimentation and evaluates the extent of support for experimentation within the municipality. The fifth criterion *stakeholder participation* is about the quality of deliberation and participation and communication between the municipality and its citizens. The sixth criterion is *comprehensiveness* and evaluates the extent of integration of policy problems and connectivity within the implementation of governmental policies.

The third step consists of describing the governmental policies on both the basis of the analysis framework and the identification of sites of urban politics. The systematic description of sites of urban politics is based on the frequency and intensity of reporting and indicates the importance or difficulties with projects according to interviewees.

The fourth step consists of an evaluation of the systematically described governmental policies according to the evaluation framework. This leads to a rating for each criterion and the combined governmental policies.

The fifth and final step consists of key lessons from the comparison of the municipal governmental policies. Based on these research steps five key findings can be identified.

The **first key finding** is that the established frameworks in chapter 2 contribute to the evaluation and systematic description of mobility policies. They, however, do not include all relevant elements and some issues of legitimacy are difficult to integrate such as inclusivity.

The **second key finding** is that based on chapter 3's systematic description, municipalities within the Randstad use similar overarching strategies to realize sustainable mobility objectives except for innovation policies. All four cities aim to move towards carbon neutrality by implementing a mix of policies aimed at stimulation of cycling, increase in electronic car use and implementation of emission zones. In addition, the period 2008-2019 is marked by various large contentious infrastructure projects consisting of tram/metro-lines connecting the surrounding region or various parts of the city. The issues arising from the implementation of these projects all have a complex governance structure and high costs making them primary sites of urban politics. In terms of facilitating innovation, the municipality of Amsterdam and Rotterdam have set up a wide number of organizations and have an internal strategy for experimentation. The municipalities of Utrecht and The Hague, however, lack such frameworks and policies aimed at innovation. Their support relies in the case of Utrecht, on the coordination of the European IRIS project while The Hague relies on financing the mobility lab stationed in Rotterdam.

The **third key finding** is that conclusions can be made about the importance of chapter 2's evaluation criteria. Legitimacy plays an important role in urban politics both during and after the implementation of mobility policies and projects. The criteria that have been identified play an important role in the overall legitimacy depending on the project and policy. The consistency of a municipal vision plays a role mainly in the internal legitimacy of the municipality. This means that a coherent long-term strategy leads to two things: Increased likelihood of effective implementation of policies and projects and more support from other governmental agencies most notably, the national government. When strategies and agendas are aligned, there is less chance of contention over resources or competition for alternative plans during the implementation of projects and policies. Additionally, another conclusion can be drawn based on the criterion of stakeholder participation. The legitimacy of a project or policy can be increased through citizen input during the planning phase of a project. Moreover, comprehensiveness contributes to the legitimacy of mobility policies and projects by increasing the effectiveness and preventing unintended consequences. By increasing the integration of mobility problems there are less likely to unintended consequences affecting other policies and projects. Lastly, the systematic description of innovation capacity shows that mobility is developing rapidly based on new possible innovations often seen within the framework of a "smart city". Enhancing the innovation capacity, therefore, increases the likelihood of finding new solutions and the effective absorption in their local context.

A **fourth key finding** is that based on chapter's 4 evaluation the strengths and weaknesses of the Randstad area's governmental policies can be identified. In the case of Amsterdam, its strengths lie in its capacity to innovate and having relatively few weaknesses compared to the other municipalities. The municipality of Utrecht strengths lies in monitoring of issues after the implementation of policies. Rotterdam's strength's lies in its inclusive community-based approach to innovations. Its stakeholder participation is therefore also relatively high due to its integration into mobility projects and policies. Furthermore, the city has an integrated vision for mobility with intertwined objectives and a high degree of coordination with other governmental agencies. The city of The Hague has a relatively high degree of coordination with the metropole region and municipality of Rotterdam to realize infrastructure projects.

In terms of weaknesses, the municipality of Amsterdam could improve its coordination with other governmental agencies and stakeholder participation. The implementation of governmental policies in the municipality of Utrecht could also be improved through increased coordination with the province and national government most especially in regards to regional infrastructure. In the case of Rotterdam, based on the implementation of the emission zone, the city could improve its transparency and communication with citizens. Lastly, The Hague has a higher number of weaknesses compared to the other municipalities. These consist of a lack of effective stakeholder participation, transparency & monitoring and comprehensiveness of policies.

The **fifth key finding** is based on both chapter 4's evaluation and its key lessons from the comparison. In terms of consistency of municipal vision, presenting a strategy that is either incoherent or short-term it is less likely to be supported by the national government leading to subsequent delays of projects and policies. This is especially the case for large infrastructure projects that require vast resources.

In terms of consistency between governmental layers, municipalities often have conflicts on the necessity of plans, projects and policies regarding mobility. The coordination between municipality, province and national government is average at best for local infrastructure. The coordination between various layers has improved greatly between 2008 and 2019 regarding regional infrastructure plans. Conflicts over resources did arise but were solved with the agreement of all three layers. Large local infrastructure, on the other hand, has led to conflicts with the national and provincial governments due to their different agenda's and strategies. This contention is built on the provincial and national interests favouring car roads instead of tram, train or metro lines. The difference in interests of each layer is made worse through a lack of regional solutions for this type of infrastructure. Depending on the project local infrastructure within cities has a limited positive influence on the sub-urban areas but does divert away precious resources. The example of Rotterdam showcases that when the municipality and province work together within a regional context, both local and regional infrastructure is more likely to be approved by the national government. Furthermore, there is only limited coordination between the national government and municipalities through MaaS projects and electronic car and charging station subsidies. There is a lack of coordination for other subsidies, plans and strategies for fostering innovation leading to a lack of effective support. By aligning the different governmental layers through for example the sharing of burdens, the internal legitimacy for policies and projects would be enhanced.

In terms of transparency and monitoring, the decision-making process behind the policies and clear rationale for a project should be communicated clearly towards citizens. This increases legitimacy because it reduces the complexity behind certain projects to a more manageable level for citizens. Furthermore, clear evidence for the success of policy or project should be communicated during and after implementation for a higher rate of acceptance. Changing the narrative as the project develops leads to confusion among the public and the suspicion that the initial positive forecast was a deception. Furthermore, the monitoring during and after a project only increases the legitimacy if the communication was consistent and transparent. The problem is that when a project or policy has been implemented on wrong grounds its subsequent monitoring will prove that it was built on a mistaken

projection. However, with any project or policy, issues will usually eventually be identified by the public under different circumstances and maintaining monitoring allows municipalities to adjust their policies and projects in a way that does not hurt their credibility.

Regarding the innovation capacity, the municipality must have a framework to foster their activities or create a beneficial environment. Without such an environment, municipalities are less likely to be able to communicate the benefits of innovations to the public and unlikely to effectively put them to use for the right problems.

In terms of stakeholder participation, legitimacy can be increased by allowing for citizen input during the planning phase of a project. The implementation of complicated projects often leads to concerns being raised by citizens especially if there is a lack of trust. These concerns will be more likely dispelled if they can participate and provide their input through some method such as a poll, committee or alternative methods. During the implementation of a project or policy, stakeholder participation might lead to additional pressure on the municipality. It is therefore important that the quality of deliberation is maintained by both accepting and researching proposed feasible alternatives. This will reduce the pressure either by changing the project or policy or showcasing that it is the most optimal solution. Both of these elements will lead to increased acceptance of the outcome of a project or policy.

In conclusion, the Randstad area on average has an average legitimate strategy for sustainable mobility that partly fulfils the criteria of legitimacy between 2008 and 2019. It is clear that within the Randstad area, municipalities have different strengths and weaknesses of their mobility policy mixes. The legitimacy can be further strengthened to move the overall policy mix from average towards great.

6.2: DISCUSSION OF FINDINGS

There are four discussions relevant in regards to this study of legitimacy in the Randstad area between 2008 and 2019.

Firstly, mobility innovations are insufficiently supported by the various layers of government. This is evident by the lack of invested resources compared to the construction and maintenance of infrastructure. The combined lack of funds and evaluation of mobility innovations further reduce the internal legitimacy of innovation policies. Within the municipality of Amsterdam, the smart city approach while flawed at least offers some continuation of support and evaluation of mobility innovations. The municipality of Rotterdam has a wide number of experiments but due to a lack of cohesive framework like Amsterdam, it has not evaluated the progression and problems during the years of 2008-2019. Instead, it evaluates specific projects such as the MaaS experiment and Mobility Arena (Verkeersonderneming 2016; Rotterdam 2018). This approach has several advantages and other approaches involving governmental aid do not necessarily increase innovation capacity. However, the lack of transparency means that there is a lack of evaluation of innovations and how they fit within long term municipal strategies. Furthermore, innovation cannot be facilitated solely by establishing a framework for municipalities, it requires a mentality shift of the central and provincial government layers. The current infrastructure fund will be transformed into a mobility fund by the year 2030 (Rijksoverheid 2020). However, the developments surrounding smart city are developing rapidly meaning that waiting another 10 years reduces the capacity of living labs to test pilots in real-life settings. Municipalities should push the central government for more immediate support for mobility innovations in the short term by diverting some resources away from investments into (road) infrastructure. The current resources within the Randstad area are mainly diverted towards large infrastructural projects. Reducing investments into infrastructure will, therefore, mean the cancellation of one of these large projects.

Secondly, based on the research of various projects and policies, there are indications that the legitimacy of projects can to some extent be manipulated by municipalities. An

example of this is the tramlines in Utrecht, Rotterdam and The Hague. In all of these tram projects, the removal of bus stops meant that the tramline is regarded as a necessity to get to various locations with public transport. During some of these projects, the alternatives were removed before their completion further pushing people to anxiously wait for the trams. While this approach increases the legitimacy of a specific project it also undermines the overall legitimacy of the mobility system. Likewise, the removal of bus-lines across the Randstad leads to fewer alternatives and at times reduced mobility for citizens. The rationale behind these removals is cost-effectiveness and efficiency which would allow further investments into other areas of the system. The issue is that the cost savings are often spent on large infrastructure and not on the other areas of public transportation. Furthermore, for the tramline projects and the North-South Metro bus-lines were not only removed in the close vicinity of stations but also in further removed areas and thereby negatively influencing the mobility of citizens.

Arguably replacing fossil busses with electric trams and metro's is an improvement in terms of sustainability. However, if the policies lead to additional car use due to reduced mobility it would negatively contribute to both congestion and emissions. If the overall goal of mobility policies is to enable faster and improved transportation, reducing mobility is not contributing to the legitimacy of these projects. The central government plays a key role here in providing enough resources to maintain and not downsize public transportation. The municipalities have communicated for the past 11 years a willingness not only to improve but to extend public transportation. The reality is that during these years, subsequent budget cuts have led to the removal of regional bus-lines. This forces people in the sub-urban areas to use the car if there are no tram, train or metro stations close by. The construction of new (tram/train) stations is planned in all four municipalities, but none of them will provide the same extent of mobility as the previous large amount of regional bus-lines. In effect, this means that while maintenance costs of public transportation will go down, the absolute costs of public transportation will increase due to costly large infrastructure projects. The travelling time might also be increased and overall mobility reduced and therefore force people back to using private cars. The idea that chain-mobility will solve some of these issues through the construction of P+R is also unlikely. While P+R facilities can contribute to reducing car congestion in the city centre, consumer behaviour shows that users have a preference of one type of mobility and dislike switching to reach their desired destination (De Vos et al 2019).

Thirdly, this research focusses on the role of municipalities in directing, stimulating and providing a legitimate environment for mobility policies and projects. This perspective, however, is relatively top-down and might be considered illegitimate and inefficient from a bottom-up point of view (Engen et al 2019).

Finally, this research also indicates is that in the present, the 'New' mobility is very much old conventional infrastructure-based. The new developments are going at a slow pace which might be an indirect consequence of a lack of interest and resources diverted towards innovation. Within the Netherlands, a lack of overall investments outside of large infrastructure projects means that multiple municipalities also have to play catch-up. In order for mobility to become 'new' and sustainable, it requires a vast shift towards more innovative solutions combined with extensive investments into infrastructure.

6.3: REFLECTION ON RESEARCH APPROACH

The conduction of this research has led to a number of insights on the process and state of academic research regarding the urban politics of mobility. This research is based on an empirical analytical approach that focusses on what occurs in terms of real-life decision making in the four municipalities of the Randstad area within the Netherlands. Additionally, an integrated perspective has led to an analysis that involves the interactions between policies of a municipality and other governmental layers. The advantage of such approach is that certain complex interactions can be more easily integrated within the framework that evaluates the legitimacy of mobility policies and projects. Likewise, the extensive use of newspaper articles forms a solid basis on which multiple conclusions can be drawn on the legitimacy for mobility policies within the Randstad area of the Netherlands. However, the use of newspaper articles naturally comes with the bias of said reporter and therefore a lack of objectivity. What constitutes as a site of urban politics is therefore also up for debate. For this research, the heavy reliance on newspaper articles was partly the result of a lack of interviews caused by cancellations, lack of willingness and the difficulty of the subject matter. There is relatively little research on real-life decisions and their connection to the legitimacy of said policies. This is made worse by the pressure surrounding failed or badly implemented projects. Policymakers especially are unwilling to divulge the exact issues surrounding these projects. Newspapers allow for both the analysis of public acceptance over time and insights into what constitutes political internally within municipalities. However, relatively late into the research process, it was clear that additional insight into urban politics could have been realized through direct communication with the writers of newspaper articles and trade magazines. This could have led to additional interviews as well.

Another reason why this research relies heavily on newspaper articles is the accessibility of interviewees, most notably in the area of experimentation. Furthermore, while interviewees were able to identify projects or policies that were sites of urban politics, they were often either unwilling or unable to provide direct sources and information surrounding these projects. Likewise, while some projects have been extensively debated internally within a municipality, their relevance to the citizens of that particular city is limited. This was the case regarding sites of urban politics such as the Nieuwe Maasverbinding and Konings-Leyenburg corridor tramlines in The Hague. This combined with a relative top-down perspective means that bottom-up initiatives might have been missed and are underrepresented in regards to the evaluation of legitimacy.

From an integrated perspective, the current developments on mobility innovations are relatively secluded to a small number of living labs, a large number of pilots and some large private initiatives. Based on communication with political work-groups and citizen participation groups, it has been assumed that there are relatively few grassroots initiatives related to both innovations and conventional problem-solving. The definition of grassroots being an initiative that was set-up without support from the government or private sector in its inception. Setting up a living lab and allowing start-ups to devise solutions does in this case, not constitute to grassroots solutions for mobility problems. This means that for this research only relevant grassroots movements and initiatives could be identified in the municipality of Rotterdam such as the mobility arena. Further research should attempt to have a clearer image of grassroots movements and their relevance to the developments of sustainable mobility.

In regards to the internal validity of this research, the findings are highly relevant in regards to the analysed projects and policies discussed in the newspaper analysis. Gaps for some projects have been filled with interviews by policymakers most notably those in Rotterdam and The Hague. As previously indicated, the politics of experimentation can be further explained and more extensively researched to improve further reliability. Furthermore, additional factors or criterion can be identified that are relevant to the legitimacy of mobility that is not covered by this research.

Lastly, the external validity of this research is limited to countries that have a similar setup. The interplay between various governmental layers is relatively unique to The Netherlands and are only compatible to a limited extent to some Scandinavian countries as a possible reference (Isakson & Richardson 2009). However, the majority of the key lessons described in the results are relevant for municipalities in both Europe and North America.

6.4: RECOMMENDATIONS FUTURE RESEARCH

The role of politics within urban mobility transitions have only been researched from limited perspectives. The role of legitimacy has been described from the perspective of specific problematic projects such as congestion charges in Sweden (Isakson & Richardson 2009; Börjesson & Kristofferson 2015). The role of legitimacy within public policy has been extensively researched but not in regards to urban mobility. In general, there is a lack of research that connects the legitimacy of governmental policies to the developments of urban mobility. This research has aimed to provide insights about the real-life decision making of policies and projects within The Netherlands. Also, the establishment of a framework with criteria for the evaluation of the legitimacy of governmental policies and systematic description of urban politics is relatively novel and contribute directly to the policy mix body of literature. Criterion such as consistency between governmental layers have been discussed before and issues surrounding large infrastructure policies have been extensively covered but this research still contributes specific knowledge about projects within the municipalities of The Netherlands (Flyberg 2009). Likewise, this thesis shows an alternative perspective on urban politics emphasizing what happened over how it came to be. This approach, therefore, can contribute directly to political theories such as the Advocacy Coalition Framework.

This research also contributes to additional perspectives regarding the role of urban politics and climate change (Bulkeley et al 2013). Their research concludes that further research is required based on literature linked with the urban economies and their present reconfiguration (Luque-Ayala 2018 et al). Mobility as a concept is inherently connected to the urban economy due to its crucial role in determining growth, equity and welfare. This research aims to contribute new perspectives on urban politics of mobility which allows for more insights on the realization of sustainable mobility. For this research, it was initially assumed that mobility for municipalities is an urban issue within the Netherlands. However, during the research process, it became clear that support from governmental layers such as the Province and national government means that it is, in fact, a regional issue. Experimentation, on the other hand, can be perceived as an urban issue but this research lacks a comprehensive view on bottom-up initiatives and innovation to confirm this.

Lastly, it is assumed in this research, that legitimate policies and projects will lead to increased public support that is necessary to realize a carbon-neutral future. The Realization of sustainable mobility is therefore not only technical but also a governance problem that needs to be solved if ambitious goals such as climate neutrality in 2050 are to be achieved. Further recommended research would follow the role of networks in infrastructure projects and their possible influence on the legitimacy should be further researched. Likewise, the politics of experimentation can be vastly expanded upon by further looking at the details of decision making and role of municipalities in regards to front runner support, upscaling and living labs in The Netherlands. Lastly, mobility justice has only been mentioned to a limited degree in this research and should be further expanded upon in regards to the evaluation of mobility policies.

7: BIBLIOGRAPHY & ANNEX

7.1 ANNEX

During this research a number of people were interviewed in regards to the legitimacy of mobility policies and projects. In the table below the interviewee's and their respective municipality are shown:

Annex A Interviewee list:

Name	Function	Municipality
Kees de Leeuw	Urban Traffic&Transport Planner	The Hague
Gert-Jan Polhuijs	Senior Advisor Mobility Municipality	Rotterdam
Jan Korff de Gidts	Projectleader en developer Kracht van Utrecht	Utrecht
Marek Kruszel	Project Manager at CTO Office Smart City	Amsterdam
Janine Hogendoorn	Founder RingRing	Amsterdam
Workgroup Groenlinks	-	Amsterdam

In addition there were a three observations made during discussion with interviewee's or conferences:

Kracht van Utrecht a , Meeting Municipality Utrecht (3 December 2019).

Kracht van Utrecht b, Utrechtse Proeftuin Avond Duurzame Mobiliteit (26 November 2019).

Kracht van Utrecht c, Meeting Province of Utrecht (4 December 2019).

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