MOBILITY POLICY SUCCESS STORIES?

A comparative case study analysis of the inner city mobility transitions of Amsterdam, Rotterdam and Utrecht

FEB 2025 · BREDA · THE NETHERLANDS

EKATERINA UZUNOVA

Nijmegen School of Management · Radboud University

Master's Thesis for the Spatial Planning programme
Specialisation Urban and Regional Mobility

Radboud University

COLOPHON

Thesis information

Mobility policy success stories?
A comparative case study analysis of the inner city mobility transitions of Amsterdam, Rotterdam and Utrecht

14 February 2025 · 24 ECTS

Author

Ekaterina Uzunova · s1086534

M.Sc. Spatial Planning, specialisation Urban and Regional Mobility · Radboud University

✉ ekaterina.uzunova@ru.nl

Supervisor

Dr. Sander Lenferink

Nijmegen School of Management · Radboud University

Dr. Sander Lenferink is an assistant professor in the Department of Geography, Planning, and Environment at Radboud University, the Netherlands. His research is centred around urban transport and mobility planning and its connections to land use planning.

Institution

Radboud University

Radboud University
Heyendaalseweg 141, 6525 AJ Nijmegen
www.ru.nl/nsm

Copyright

Preface

> *If you plan cities for cars and traffic, you get cars and traffic.*
> *If you plan cities for people and places, you get people and places.*"
>
> - Fred Kent

My Dutch journey began in Breda, where I completed my bachelor's degree and found my passion for sustainable transport and liveable cities. It continued with my employment at Breda University of Applied Sciences as a researcher and project manager in transport-oriented European projects.

This master's thesis project is the last stage in completing my Master of Science in Spatial Planning, specialisation Urban and Regional Mobility at Radboud University in Nijmegen. It has been a pleasure writing this thesis and being in contact with representatives from the various stakeholders involved in making Amsterdam, Rotterdam and Utrecht more liveable. I hope that the result provides useful insights to policymakers and other experts active in the field of mobility for the development and implementation of sustainable mobility policies.

I wish you a nice time reading my thesis!

My warmest regards,
Ekaterina Uzunova
Breda · The Netherlands · 14 February 2025

I would like to thank my supervisor, Dr. Sander Lenferink, for his continuous support, feedback and guidance. He offered me understanding and kindness concerning my personal circumstances. He provided me access to a network of experts and the readability and quality of this thesis increased considerably because of him. I would also like to express my appreciation and gratitude to everyone who agreed to be interviewed and contribute to this study with their knowledge.

During the writing and researching process, I not only expanded my knowledge but also revived my interest in the sustainable mobility domain, which has been fading away for the past two years. I feel a commitment to cities I never felt before - to develop better cities planned for people and places instead of cars and traffic.

SUMMARY

The master thesis, *"Mobility policy success stories? A comparative case study analysis of the inner city mobility transitions of Amsterdam, Rotterdam and Utrecht,"* assesses the extent to which the inner city sustainable mobility transitions of Amsterdam, Rotterdam, and Utrecht could be considered *'policy success stories'*. Through comparative case study research, the thesis compares the inner city mobility transitions of the three cities corresponding to their latest mobility policies: Agenda Amsterdam Autoluw, Rotterdamse MobiliteitsAanpak and Mobiliteitsplan 2040 (Utrecht).

For the data collection, semi-structured interviews with policymakers and other experts involved in the transition experiences of the three cities were conducted alongside a literature review and desk research. The knowledge from this thesis could aid policymakers in developing successful policies towards sustainable mobility in inner cities. In particular, policymakers and implementers from Amsterdam, Rotterdam and Utrecht could use the findings to 1) gain an understanding of the gaps in their current transition and policy approaches and increase their success rate by tackling those, 2) understand which aspects of their approach could be considered already successful and, thus, could be further pursued in the future, and 3) gather inspiration from the other two cities on *'what works'* and *'what does not work'* in the Dutch context.

The thesis applies theory from transition, transport, policy and public participation studies. It helps to address an existing gap in the current policy and transport academic fields - the lack of a dedicated 'success' assessment methodology focused on mobility transition policies. For that, this thesis developed a state-of-the-art mobility policy success assessment matrix with 14 corresponding success factors to consider when assessing the success of mobility transitions evoked by dedicated mobility policies (**chapter 4**). The 14 factors are compiled from theoretical contributions through a literature review and practice-based contributions collected through the expert opinions and experiences of the interviewed municipal representatives. They are allocated to one of the four assessment components – programmatic, temporal, process and political – derived from the policy success evaluation tool by Compton et al. (2019). The final two-by-two mobility policy success assessment matrix groups the programmatic and temporal assessment components on the X axis and the process and political on the Y axis. Each of the axes has a maximum score of 8 points. The matrix contains four quadrants, and depending on each city's final score on all the success factors, the three cities have been allocated to one of the four quadrants:

1) **Mobility policy SUCCESS** - an overall score higher than 4.5 (> 4.5) on all four assessment components;
2) **Mobility policy FAILURE** - an overall score lower than 4.5 (< 4.5) on all four assessment components;
3) **Smooth, inclusive and popular, but poorly designed** - score lower than 4.5 (< 4.5) for the programmatic and temporal assessment success factors, and higher than 4.5 (> 4.5) from all factors belonging to process and political assessment;
4) **Well-designed and anticipative, but disturbed, unjust and opposed** - score higher than 4.5 (> 4.5) for the programmatic and temporal assessment success factors, and lower than 4.5 (< 4.5) from all factors belonging to process and political assessment.

The thesis further helped to address another gap in current transport literature, which primarily focuses on case studies and assessments at the city-wide level. It enriched the transport academic field with context-specific knowledge by investigating sustainable mobility transitions at a particular level of intervention, namely, the city centres of three Dutch cities. For this transition analysis, it utilises the multi-level perspective on sociotechnical transitions. It begins with analysing the external STEEP (Social, Technological, Economic, Environmental, and Political/Planning) facilitators and barriers to the mobility transition; an analysis which aims to capture the sociotechnical landscape developments exerting pressure on the regime. A total of eight factors are reviewed, two of which are considered most significant for this thesis as they helped to reveal the presence of two success factors in the three cities - economic barrier *'COVID-19 impacts on budget'* and political barrier *'Instability of political regimes'* (**chapter 5.1**).

The next step of the analysis is the case study research, which explores the mobility transition regime developments at the inner city level by delving into the most recent mobility policy documents of the three cities, their corresponding push and pull measures and their effects, and the stakeholders and public participation processes (**chapters 5.2, 5.3 and 5.4**). The policy document review of the three most recent mobility policies adopted in 2020-2021 in Amsterdam, Rotterdam, and Utrecht corresponds to an exploration of the regime's formal rules of the multi-level perspective on sociotechnical transitions. It utilises the ABCD-procedure of the Framework for Strategic Sustainable Development (FSSD) by Broman and Robèrt (2017) to report on a) the mobility vision, b) the current baseline, c) the building blocks to get from B to A, and d) the strategic plan. As established, all three mobility visions focus on the whole city area with a timespan until 2040. The comprehensive review of the push and pull measures in the inner cities revealed significant similarities between the three cities. Recurring measures for all three inner cities include:

- Introduction of 30 km/h speed limits (push);
- Removal of on-street parking (push);
- Introduction of paid parking (push);
- Stricter rules and enforcement of prohibition rules with smart measures (push);
- Redesign of streets/areas towards a car-low or car-free environment (pull); and
- Increasing bicycle parking capacity (pull).

In addition to the FSSD, the Spectrum of Public Participation model by IAP2 (2018) is applied to the reflection on the public participation processes, which is structured per policy cycle phase for each city. All three cities have performed participatory processes. None have deployed empowerment of the public, meaning that the final decision-making power lies in the hands of the public. Instead, the city authority has always had the final say. Utrecht and Amsterdam have organised a public consultation process before releasing their policy to gather input for it. Rotterdam has not performed any public participation in the cycle phases of agenda-setting and policy formulation.

With the findings from the explorations on the landscape and regime levels, the final step of this research is to score each city on the identified success factors. **Chapter 6.1** features the comparative analysis of the three cities' performance on each success factor. Three of the fourteen success factors of the mobility policy success assessment methodology were left without a score for the cities and not considered as part of the final matrix assessment, as not enough information was obtained to make a sufficient judgement on them. This is one of the limitations of this study, and as a consequence, the methodology had to be adapted for the final assessment by leaving out those three factors.

Based on the comparative analysis on each of the factors, a final assessment of the three cities' transition *'successfulness'* is presented by placing them on the mobility policy success assessment matrix (**chapter 6.3**). Utrecht ranks the highest among all three cities and can be considered the most successful in terms of the on-going mobility transition and its corresponding policy. Both Utrecht and Amsterdam belong to the quadrant ***'Mobility policy SUCCESS'***. Rotterdam belongs to the quadrant ***'Well-designed and anticipative, but disturbed, unjust and opposed'*** due to its lower scores on the process and political factors. None of the three cities has achieved ultimate success with full scores on all the success factors so far, but Utrecht and Rotterdam could be considered slightly more successful than Rotterdam. None also belong to the quadrant ***'Mobility policy FAILURE'.*** Following the conclusions in **chapter 7.1**, the thesis ends with the recommendations for practice with reflections on the gaps in the cities' current approaches and their successes (**chapter 7.2**), on the study's limitations (**chapter 7.3**) and the recommendations for further research (**chapter 7.4**). The key recommendations for further research derived from the thesis limitations are:

- A follow-up study on the three success factors this thesis failed to capture.
- A follow-up comparative analysis of the former and current mobility policy direction of the cities of Amsterdam and Rotterdam (cities currently releasing their new mobility policies).

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

CAVs Connected and Automated Vehicles

CBS Centraal Bureau voor de Statistiek (in English: Statistics Netherlands; Dutch governmental institution that gathers statistical information about the Netherlands)

CO_2 Carbon dioxide

COVID-19 Coronavirus disease 2019

CS Central Station

D66 Democrats 66 (political party)

EU European Union

EVO Eigen Vervoerders Organisatie (Dutch organization for logistics and transport businesses)

FSSD Framework for Strategic Sustainable Development

GGD Gemeentelijke Gezondheidsdienst (in English: Municipal Health Service; public health organisation)

GHG Greenhouse gas (emissions)

HORECA Hotel, Restaurant, and Café/Catering

IAP2 International Association for Public Participation

IEA International Energy Agency

ILT Inspectie Leefomgeving en Transport (in English: Environment and Transport Inspectorate)

IT Information Technology

MLP Multi-level perspective

MP Mobiliteitsplan 2040 (in English: Mobility Plan 2040)

MP2040 Mobiliteitsplan 2040 (in English: Mobility Plan 2040)

MRDH Metropoolregio Rotterdam Den Haag (in English: Metropolitan region Rotterdam The Hague)

MaaS Mobility-as-a-Service

N/A Not available

NL The Netherlands

NMT Non-motorised transportation

NS Nederlandse Spoorwegen (in English: Dutch Railways; passenger railway operator in the Netherlands)

ODiN Onderweg in Nederland (in English: On the Road in the Netherlands; annual survey of the travel behaviour of the Dutch population)

OV Openbaar vervoer (in English: public transport)

P+R Park and ride

PO Post Office (box)

PT Public transport

R&D Research and Development

RET Rotterdamse Elektrische Tram (in English: Rotterdam Electric Tram; main PT operator in Rotterdam)

RMA Rotterdamse MobiliteitsAanpak (in English: Rotterdam's Mobility Approach)

RSU Ruimtelijke Strategie Utrecht 2040 (in English: Spatial Strategy Utrecht 2040)

STEEP Social, Technological, Economic, Environmental, and Political/Planning

TDM Transport demand management

UN United Nations

V2I Vehicle-to-Infrastructure

V2V Vehicle-to-Vehicle

VVD Volkspartij voor Vrijheid en Democratie (in English: People's Party for Freedom and Democracy)

WW2 World War II

3D Three-dimensional

e.g. Latin: exempli gratia; English: for example

i.e. Latin: id est; English: that is

km kilometre(s)

km/h kilometre(s) per hour

km^2 square kilometre(s)

m metre(s)

max. maximum

01
INTRODUCTION

Chapter 1 introduces the research problem this thesis aims to address, the main objective of the research, and the key research questions answered throughout this document. It then discusses the relevance of the research for the academic field and society in general, and presents the outline of this document.

© Alex Padurariu · 29 October 2015 · Bike on cobbled street

1.1 RESEARCH PROBLEM STATEMENT

In response to the car-dependency issues and the EU's increasing ambitions in the mobility sector, different measures have been introduced to alleviate the impacts of mass vehicle ownership and the 20th century car-oriented planning in the European Union. Measures range from the introduction of new mobility services to urban intervention tactics. In pursuing more liveable cities and a transition towards sustainable mobility, city authorities have begun decreasing the access of cars to inner cities. For instance, the city of Oslo implemented a gradual three-phase *'Car-free Livability Programme'* with measures including the removal of on-street parking spaces in the city centre, the introduction of alternative uses to the freed-up space (e.g., terraces, playgrounds, and street furniture), the closure of streets to vehicles and others. Traffic data has shown that within the city centre, car traffic reduced by 11% for the period 2016-2018, and by 19% for the period 2018-2019 (EU Urban Mobility Observatory, 2021).

Dutch cities have long been front-runners in the design of liveable urban spaces. One reason for this is that rapid urbanisation in the Netherlands occurred early - by the 18th century, 80% of the population already lived in urban areas (Karssenberg & Laven, 2017). Furthermore, the concept of liveable streets was first introduced by the Dutch as the 'Woonerf' - *"a road that is designed with special features to reduce the amount of traffic using it, or to make the traffic go slower"* (Cambridge University Press & Assessment, n.d.). The Netherlands is also home to the first purpose-built pedestrian street in Europe, the Lijnbaan in Rotterdam, a completely car-free zone unheard of at the time (van der Zee, 2018). In modern days, many Dutch cities have embraced a *'city at eye level'* approach at the city or inner city level. For instance, the city of Amsterdam adopted the *'Agenda for a liveable and accessible city'* in 2020, also referred to as Autoluw, as part of which measures such as the removal of on-street parking, its replacement with alternative uses and the expansion of P+R facilities are contributing to the achievement of a liveable and accessible city (City of Amsterdam, 2020). Rotterdam is also actively pursuing a transition of its inner city, as laid down in the Rotterdamse MobiliteitsAanpak, which envisions, for example, the redesign of city streets, squares, and boulevards with a car-low environment, the reduction of on-street parking and the expansion of bicycle parking capacity (City of Rotterdam, 2020). Utrecht published its Mobiliteitsplan 2040 in 2021, as part of which various changes are taking place, such as the expansion of the pedestrian area, the provision of attractive alternative routes for through traffic around the inner city, and the expansion of bike parking capacity to address the current overload on the bike infrastructure in the city (City of Utrecht, 2021).

Despite the rich experience Dutch cities have with policies and measures aimed at restricting car access in inner cities, scientific literature has not yet addressed the way the mobility transition takes shape, particularly at the inner city level. Existing literature, instead, focuses on the broader city-wide level rather than the inner city (e.g., Loorbach et al., 2021; van der Koogh et al., 2021). Furthermore, following a rigorous literature search on mobility policymaking, no information was found about how success is operationalised within this domain and about concrete factors that determine the success of mobility policies. There is no universal or EU-agreed definition of a *'successful mobility policy'.* Instead, existing literature is focused on the general policy field without specifying a mobility context or case study (e.g., McConnell, 2015; Compton et al., 2019; Leong & Howlett, 2021).

Considering all that, due to the existing gap in the current policy and transport academic fields lacking a 'success' assessment methodology focused on mobility transition policies, this master thesis develops a methodology to evaluate the 'success' rate of mobility policies and compares the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht based on the identified success factors. This is done through comparative case study research focusing on the three case study cities. For this, the multi-level perspective on sociotechnical transitions by Geels (2005) is used as the theoretical basis for this study, which delves both into the sociotechnical landscape (i.e., external landscape developments and the way they exert pressure on the regime) and the regime changes over time. The transition theory approach is enriched with a theoretical basis from the mobility domain, namely the push and pull transport demand management strategy by Broaddus et al. (2009). Chapter 2 elaborates on the theoretical underpinnings and chapter 3 - on the methodology used for this study.

1.2 RESEARCH OBJECTIVE AND QUESTIONS

The goal of the research is to assess the extent to which the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht could be considered 'policy success stories'. For this, Amsterdam, Rotterdam and Utrecht have been selected as case study cities. The findings from this study are useful for policymakers active in the field of mobility when developing, implementing and evaluating their sustainable mobility policies, especially at the inner city level. The research questions are presented below and detailed further in **Appendix 1**.

MAIN QUESTION

To what extent could the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht be considered *'mobility policy success stories'*?

SUB-QUESTIONS

1) Which are the factors contributing to a policy pursuing sustainable mobility transition being labelled a 'success'? – *outcome: mobility policy success assessment matrix*

2) What are the exogenous landscape developments and internal regime dynamics shaping the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht? – *outcome: analysis of the sociotechnical landscape, regime and actors*

3) How do the inner city mobility transitions of Amsterdam, Rotterdam and Utrecht compare based on the identified success factors? – *outcome: cities' score per success factor*

1.3 RELEVANCE OF RESEARCH

ACADEMIC RELEVANCE

This thesis has a threefold academic relevance. In terms of context-specific knowledge, it enriches the theoretical knowledge surrounding sustainable mobility transitions at a particular level of intervention, namely, the city centres of Dutch cities. Literature examining sustainable mobility transitions and policies typically focuses on the broader city level. As will be explained further in chapter 2, Dutch inner cities have been transitioning towards less car accessibility already since the last century. Nowadays, this transition continues with even more drastic measures driving the car-freeing of inner cities. Furthermore, to understand how innovations emerge and how these can replace or transform existing systems, researchers need theoretical approaches that address the multidimensional nature of transitions and the dynamics of structural change (Geels, 2011). In line with that, the nature of transitions and their dynamics differ according to their broader societal contexts. Hence, additional case studies on sustainability transitions could build on context-dependent knowledge. In the case of this thesis, this refers to the knowledge of mobility transitions in the Dutch societal context, which will be accumulated through the case study research on local inner city mobility transitions. The way transition theory is applied to this is explained in chapter 2.

In terms of methodology, there are two major academic contributions. First, scientific literature has not yet addressed the factors determining the success rate of mobility policies. Policy literature often addresses success in a general manner without specifying a mobility context or case study (e.g., McConnell, 2015; Compton et al., 2019; Leong & Howlett, 2021), as will be reviewed in chapter 4. Thus, this study contributes to the policy and transport academic fields by developing a state-of-the-art assessment methodology for assessing the success of mobility policies targeting sustainable mobility transitions. Second, this thesis utilises transition theory to draw knowledge on the mobility transitions of three Dutch inner cities. It uses the middle-range multi-level perspective theory by Geels (2005). Geels (2011) points out that the MLP can be theoretically enriched by mobilising insights from other theories, and especially from auxiliary theories [i.e., those that bridge the gap between abstract theoretical concepts and measurable empirical indicators (Sajtos & Magyar, 2016)]. This research contributes to this by merging transition theory with the push and pull transport demand management strategy (Broaddus et al., 2009). Hence, this research contributes to developing context-dependent transition theory and applies it to three case studies.

SOCIETAL RELEVANCE

Instead of providing a practitioner's guide on which measures should be implemented to achieve a sustainable mobility transformation of inner cities, it might be even more valuable to provide policymakers with a better understanding of the wider transition process (Loorbach, 2010). By using transition theory in combination with transport theory, this research helps unravel the complex changing regime of the mobility transition in inner cities influenced by the sociotechnical exogenous context. The knowledge from this thesis could, hence, aid policymakers in developing successful policies towards sustainable mobility in inner cities. City policy actors across Europe could use the state-of-the-art mobility success assessment methodology when developing, implementing and evaluating mobility policies. Dutch policy actors, in specific, could use the findings from this document to gather inspiration from the transition experiences of the three examined cities when establishing their political agendas concerning mobility. Last but not least, policymakers and policy implementers from Amsterdam, Rotterdam and Utrecht could use the findings to:

- *Improve/avoid* - Increase the success rate of their policy approaches by looking at the identified gaps in their current approach,
- *Continue* - Understand which aspects of their current approaches to continue pursuing due to the identified successes,
- *Enrich* - Gather inspiration from the other examined cities on 'what works' and 'what does not work' in the Dutch context of sustainable inner city mobility transitions.

1.4 THESIS OUTLINE

Following the introduction in chapter one, the second chapter reviews the literature surrounding the main concepts. It presents the theoretical basis for this research and the conceptual model. Chapter three unfolds the methodology this research utilises. Chapter four explains how literature and experts operationalise success in mobility policymaking and presents the mobility policy success assessment matrix. Chapter five first delves into the landscape developments through a STEEP analysis. It then presents the three case studies which feature an exploration of the sociotechnical regime:

- *Formal rules* - policy review of Agenda Amsterdam Autoluw, Rotterdamse MobiliteitsAanpak and Mobiliteitsplan 2040,
- *Material and technical elements* - overview of the push and pull inner city measures, their effects and monitoring practices,
- *Actors* - overview of stakeholders and public participation processes.

Chapter six compares the three case study cities based on the success factors identified in chapter four and positions each city on the success assessment matrix. Chapter seven answers the main question and provides the recommendations for practice. It also revises the limitations of the research and offers some recommendations for further research.

[This page intentionally left blank]

02

THEORETICAL UNDERPINNINGS

SUSTAINABLE MOBILITY TRANSITION

TRANSITION STUDIES

CONCEPTUAL MODEL

Chapter 2 first reviews the existing scientific literature to derive the operationalisation of the key concept: sustainable mobility transition. It then provides an overview of the theoretical framework which forms the basis of this research (the multi-level perspective on transitions) and combines it with the push and pull transport demand management strategy, resulting in the presentation of the conceptual model this study utilises.

© Julia Fiander · 28 January 2023 · Waiting

2.1 SUSTAINABLE MOBILITY TRANSITION

The growth of automobility results in cars dominating cities' modal splits over other modes, such as public transport and cycling, causing problems ranging from growing road accidents to worsening urban congestion, itself resulting in increasing travel time (Graaf et al., 2021; Loorbach et al., 2021). Many city authorities no longer follow the typical approach to increase road capacity to accommodate the rising demand, which short-term eases the traffic situation, but long-term invites more car traffic, commonly called induced demand (OECD, 2021; Graaf et al., 2021). Instead, they are pursuing new policy directions for a mobility transition towards decreased car mobility and increased sustainable mobility. Such local policy directions are further motivated by the adopted sustainable development or climate action plans and strategies at the higher governmental levels - regional, national, or even international. An example is the European Green Deal, which lays down the targets to reduce 55% of greenhouse gas (GHG) emissions by 2030 in the European Union compared with 1990 levels and to achieve climate neutrality by 2050 (European Commission, 2019). Nowadays, the transport sector is responsible for nearly 25% of the EU's total greenhouse gas emissions (European Commission, n.d.). With its European Green Deal, particularly the *"Sustainable and Smart Mobility Strategy"*, the EU targets a 90% reduction in the transport sector's emissions by 2050 compared with 1990 levels (European Commission, 2021).

Sustainable mobility - operationalised

Despite the growing consensus that the current mobility system is not sustainable, there is no scientifically agreed-upon definition of sustainable mobility (Banister, 2005; Black, 2010; Castillo & Pitfield, 2010; Berger et al., 2014). The concept has been represented by various definitions and interpretations, raising concerns that it might lead to little guidance for policymakers and scientists (Berger et al., 2014). Throughout the past few decades, the sustainable transport literature has observed a shift towards problems being addressed by various disciplines, such as sociology and psychology, with different methodologies being applied (e.g., case studies and institutional analyses) (Black & Nijkamp, 2002). This has made it even more challenging to grasp the full complexity of a sustainable mobility system and to define, measure, assess, and evaluate it (Berger et al., 2014). However, it has also led to a definition of sustainable mobility, which considers a broader set of societal impacts of the transport sector, such as social equity, health and security, economic growth, and quality of life considerations (Black, 2010; Castillo & Pitfield, 2010). Irrespectively, the sustainable mobility concept to this date leaves a significant degree of interpretive flexibility (Berger et al., 2014).

Sustainability and sustainable mobility definitions typically include a long-term, multigenerational focus that addresses larger than just environmental goals (Gough, 2015). Three dimensions are often considered in terms of sustainable mobility: economic, social, and environmental. Sustainable mobility promotes economic efficiency by providing efficient and reliable connections between workers and jobs, supply chains, and consumers. It contributes to a higher quality of life by providing equitable and affordable access to goods and services, and to limiting air and noise pollution, greenhouse gas emissions, and the consumption of natural resources (Budnitz, 2019; Rodrigue, 2020).

Considering the multidimensional goals related to sustainable mobility and its multigenerational and long-term focus, this study uses the following definition of sustainable mobility:

SUSTAINABLE MOBILITY

> *"Sustainable mobility refers to the provision of infrastructure, services, technologies, and information to enable access to goods and services, and participation in activities in a manner that, like all other forms of "sustainability," allows for the continuation of such access and participation across future generations."*
>
> - Hannah Budnitz, 2019, p. 1833

Fostering a sustainable mobility transition

Worldwide policy measures to foster sustainable mobility, such as congestion charging, influencing individual travel decisions, have had little effect when related to the continuous growth in demand (Nykvist & Whitmarsh, 2008). Technical measures have also proven insufficient to limit the air and noise emissions outstripped by the increased travel frequency, trip lengths, and vehicle numbers (European Commission, 2001). Hence, it has been acknowledged that a radical, systemic transition is required from the current *'regime of automobility'* towards a sustainable mobility system (Nykvist & Whitmarsh, 2008). This transition is to be accompanied by both technological and institutional changes.

Nykvist and Whitmarsh (2008) suggest that to achieve a transition towards more sustainable practices, three broad approaches are needed: 1) improving efficiency and reducing the impact of vehicles; 2) using more sustainable modes of travel; and 3) reducing the need to travel. Geels et al. (2012) further stress the importance of path independencies in a sustainable transport system. The co-evolving elements of a mobility system – technical aspects, organisational models, regulatory frameworks, user habits, etc. – create path dependencies, making it more difficult to alter the overall development direction. Thus, a sustainable mobility transition would require a long-term focus where technical and other developments align (Geels et al., 2012).

This can be expanded by the need to deploy both push and pull measures as part of the sustainable mobility transition pathway. The push and pull transport demand management (TDM) strategy (Broaddus et al., 2009) states that a comprehensive TDM strategy requires both positive incentives (i.e., pull measures) and negative incentives (i.e., push measures). Broaddus et al. (2009) state that when only push or pull incentives are implemented, the changes in the modal shift may not be as significant as when such incentives are paired. For instance, investments in active modes (pull measure) may go unused if the car remains a cheap and efficient option. Likewise, if road tolls are enforced (push measure), drivers might react against the policymakers and continue their car mobility behaviour as no alternatives are available (Broaddus et al., 2009).

Traditionally, transport-oriented policies employ push and pull measures for the achievement of a modal shift towards sustainable mobility patterns (Batty et al., 2015; Curtis, 2018). Pull measures are often aimed at increasing the supply of sustainable modes of transport, such as public transport and active modes, while maintaining and expanding the infrastructure supply for such modes (Strompen et al., 2012; Buehler et al., 2017). Push measures are often targeted at discouraging the use of unsustainable modes by making them less convenient through, for example, congestion charging schemes and traffic slowing (Strompen et al., 2012; Buehler et al., 2017; Curtis, 2018). Various academic sources state that the most effective way to achieve the transition to sustainable mobility is to feature both push and pull measures in the policy design (Broaddus et al., 2009; IEA, 2009; Black & Schreffler, 2010; Strompen et al., 2012).

The table below elaborates on the way push and pull measures are defined in the scope of this research in terms of their effect on the mobility transition and provides examples for each type.

	Definition in the scope of the study	Examples in mobility management
Measures with push effects	Measures aimed at discouraging the use of unsustainable modes by making them less convenient.	Parking supply cap; Parking regulations; Congestion charging; Restricted car access zones; Cut of traffic; Speed reductions
Measures with pull effects	Measures aimed at increasing the supply of sustainable modes of transport while maintaining and expanding the infrastructure supply for such modes.	Cycling and pedestrian infrastructure improvements; Free-fare public transport; Public transport priority lanes; Shared mobility services

Table 1. Push and pull measures in mobility – definition and examples.

As with sustainable mobility, the concept of mobility transition does not have a universally agreed-upon definition. However, in this study, the following definition will be used in line with the TDM strategy and based on various mobility studies:

MOBILITY TRANSITION

" Push and pull transition from traditional mobility patterns and options to innovative and sustainable mobility patterns and options."

- as noted in various studies (Broaddus et al., 2009; Köhler et al., 2009; Fagnant & Kockelman, 2015; Docherty et al., 2018; Mehdizadeh et al., 2022)

2.2 TRANSITION STUDIES

The concept of a mobility transition is elaborated below using the transition studies perspective, particularly, the multi-level perspective (MLP) - a middle-range theory that conceptualises overall dynamic patterns in sociotechnical transitions (Geels, 2005; Geels, 2011). Figure 1 below depicts the adapted multi-level perspective on transitions (Geels, 2011) by the European Environment Agency (2018).

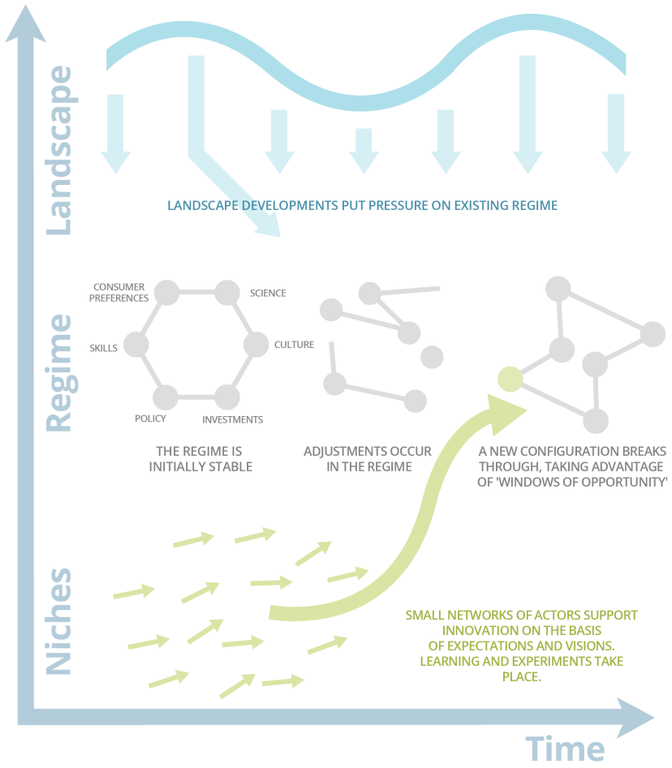


Figure 1. Multi-level perspective on sociotechnical transitions (European Environment Agency, 2018).

The central concept of the multi-level perspective is that transitions do not have a single driver but are non-linear processes resulting from developments taking place at three levels (Moradi & Vagnoni, 2018):

- *Sociotechnical landscape* - the exogenous environment with a varied set of factors forming the external context which cannot be influenced by the regime and niche actors in the short run (e.g., demographic trends, political ideologies, societal values, and macro-economic patterns) (Geels, 2011);
- *Sociotechnical regime level* where the transition process occurs (Kemp, 2010) and comprises three interlinked elements: 1) the regime actors, 2) the set of formal and informal rules, and 3) the material and technical elements (Geels, 2004). Examples of regime rules include shared beliefs, lifestyles and user practices, and formal institutional arrangements and regulations (Geels, 2011); and
- *Niche-level,* where novelties and innovations facilitated by the niche actors (e.g., entrepreneurs, start-ups, spinoffs) emerge in, for example, R&D laboratories and demonstration projects (Geels, 2011).

The MLP has been applied to various transition case studies over the years, ranging from energy studies (Kanger, 2021; Jayaraj et al., 2024; Belaïd & Al-Sarihi, 2024) to aviation (Geels, 2006) and land transport (Geels, 2005). Despite extensive coverage of MLP perspectives in transport sustainability transitions, the sociotechnical transition towards sustainable urban mobility of inner cities has not been thoroughly investigated in literature.

The sustainable mobility transitions of inner cities have been long-term processes that began in the 20th century. Following World War II, priority was given to increasing the accessibility of inner cities by car and to new urban expansions. For instance, in the Netherlands alone, cars increased from 30,000 in 1945 to 4,000,000 in 1980 (van der Werf et al., 2016). This was complemented by a deterioration of city centres in the 1960s and 1970s due to suburbanisation. Following the decades of modernism, as a result of the oil crisis periods, planners began questioning the dominance of car traffic in cities and emphasising the need for human-scale developments. The first pedestrian shopping streets began appearing, such as the first pedestrian shopping street in Europe – the Lijnbaan in Rotterdam – developed in the 1950s as part of the renewal of the bombed centre (van der Werf et al., 2016). Another example is the development of Utrecht's inner city pedestrian area with wharves along the canals in the 1970s. Besides the renewal of existing inner city spaces, new developments further catalysed the transition, such as the development of central station hubs as key entrances to the inner cities with positive economic impacts (van der Werf et al., 2016). Nowadays, the renewed interest in the development of human-scale less car-dominant spaces in inner cities continues with efforts to reduce the space for cars and create more space for pedestrians and other public space uses, such as shopping and meeting:

> *"[...] we want to change the impact, and the space cars use in the inner city, less parking spaces in the public areas, and less driving lanes for the cars. [...] We want to have less parking space in the public space and have it concentrated in the bigger parking garages."*
>
> - Head of Area Development Inner City at City of Rotterdam

This on-going transition of inner cities often positions them as front-runners in their progress with sustainable mobility compared to other city areas. The three policies investigated in this study further contribute to the on-going transitions of Amsterdam, Rotterdam and Utrecht. Within the scope of this study, the sociotechnical landscape influences and the sustainable mobility transition regime dynamics as a result of these three policies will be investigated. Niche-level developments have been left out of the scope of this study due to the existence of plenty of literature exploring their impacts on the regime level (e.g., Nemoto et al., 2023; Dutt, 2023; Müller, 2024). The following sub-chapter elaborates on the conceptual model of this study.

2.3 CONCEPTUAL MODEL

Figure 2 presents the conceptual model constructed as a combination of the theory on MLP and the push and pull transport demand management (TDM) strategy. Hence, the model combines theory from both transition and transport studies.

The external sociotechnical landscape developments which exert pressure on the regime level will be explored first. To illustrate the sociotechnical landscape, a STEEP analysis is performed – a review of the exogenous Social, Technological, Economic, Environmental, and Political/Planning factors at the global, European, or Dutch level *(chapter 5.1)*. Consult *Chapter 3.3. Research methods* for a detailed elaboration of the STEEP analysis method. Next, the inner city sustainable mobility transition regime dynamics will be explored before the policy implementation where the regime is initially stable, the internal regime destabilisation due to the implementation of the policies, and the new regime emerging as a result of these changes. The following regime elements will be explored as part of the policy implementation:

- *the formal rules* (most recent mobility policies of the three cities);
- *the material and technical elements* (the push and pull mobility measures in the inner cities from the policy instruments packages); and
- *the regime actors* involved in the transitions.

Success in mobility policymaking is operationalised before delving into the landscape and regime levels. The conceptual model applies to research questions 2 and 3, which will help uncover the dynamic patterns in the inner city mobility transition of the three cities.

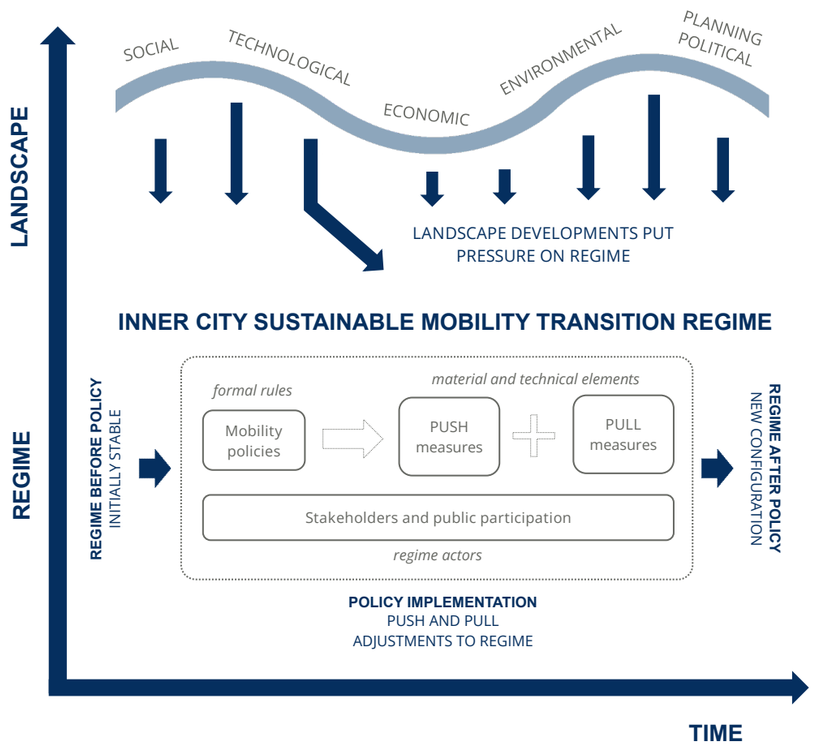
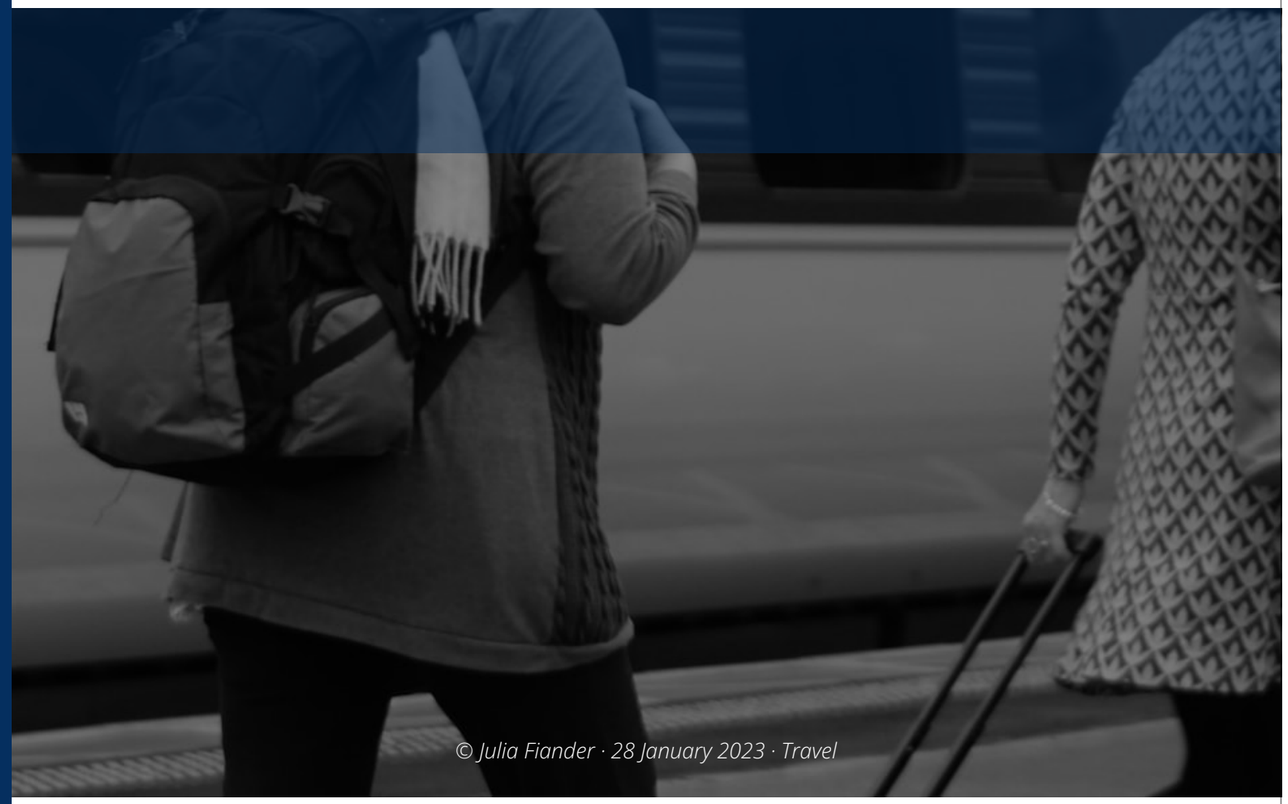


Figure 2. Conceptual model.

[This page intentionally left blank]

03
METHODOLOGY

Chapter 3 provides the methodological basis of this research, including the corresponding philosophy paradigm, the research steps, and the data collection and analysis methods deployed. It then details the case study selection criteria and discusses the limitations of this research study.



© Julia Fiander · 28 January 2023 · Travel

3.1 PHILOSOPHY PARADIGM

This research study belongs to the family of constructivism as the inquiry aim of this study is to gain an understanding of city authority representatives' experiences with the sustainable mobility transitions and policies of the cities they work at in order to derive an understanding of the wider transition process - its gaps, successes, and lessons. In terms of ontology, constructivism denies the existence of absolute truth but takes on the relativist belief, assuming multiple, apprehendable, and sometimes conflicting social realities which are the products of human intellects. As the constructors of reality become more informed and sophisticated, constructions may become alterable (Guba & Lincoln, 1994). In terms of epistemology, constructivism takes on a transactional and subjectivist assumption that knowledge is created during the investigation itself. It is created as a result of interactions between the investigator and the respondents (Guba & Lincoln, 1994). Studies based on constructivism are keener to research methods that provide direct access to the participants' knowledge, beliefs, or opinions, such as interviews as is the case with this study. Constructivism's hermeneutic/dialectic methodology aims at reaching a consensus construction which is more sophisticated and informed than previously held constructions (Ingram, 1987). However, individual constructions can only be altered and refined through interaction between respondents and the investigator (Guba & Lincoln, 1994).

For the understanding and interpretation of individual constructions, semi-structured interviews with open-ended questions are performed with experts involved in developing and implementing policies targeting sustainable mobility transitions in the inner cities of Amsterdam, Rotterdam and Utrecht to understand their experiences with the on-going transition.

3.2 RESEARCH STEPS

This chapter presents the methodology this research will utilise and figure 3 depicts the research model.

STEP 1. OPERATIONALISATION - SUCCESS IN MOBILITY POLICYMAKING

The first step of the research provides an operationalisation of success in mobility policymaking through an exploration of the theoretical and practice-based ways of looking at and defining success. For this, firstly a literature review is performed of the factors contributing to a sustainable mobility-targeted policy being labelled a success or a failure (i.e., the theoretical basis). Next to this, to understand the perspective of city authorities, experts working on the mobility transition of the inner cities of Amsterdam, Rotterdam and Utrecht are consulted on the topic of *"what is considered success in mobility policymaking?"* (i.e., the practical basis). The result of this step is the collection of factors determining the success of mobility policies and the development of a mobility policy success assessment matrix, which will be used later to compare and assess the successfulness of cities' transitions. The success factors are allocated to an assessment component – programmatic, temporal, process and political – derived from the policy success evaluation tool by Compton et al. (2019) and detailed in chapter 4.

STEP 2. CASE STUDIES - INNER CITY MOBILITY TRANSITIONS: AMSTERDAM, ROTTERDAM AND UTRECHT

The second step of the research comprises case study research on the three case study cities selected for this thesis – Amsterdam, Rotterdam and Utrecht. It begins by analysing the external STEEP (Social, Technological, Economic, Environmental, and Political/Planning) facilitators and barriers to the mobility transition. This analysis aims to capture the sociotechnical landscape developments exerting pressure on the regime. For each factor reviewed as part of the STEEP analysis, a reflection is presented on the three case study cities and the extent to which this factor is present and impactful for them. This is followed by case study research on each city, which begins with a policy review of the three most recent mobility policies adopted in 2020-2021 in the cities of Amsterdam, Rotterdam and Utrecht (regime formal rules). The policy review utilises the Framework for Strategic Sustainable Development (FSSD) by Broman and Robèrt (2017) to report on a) the mobility vision, b) the current baseline, c) the building blocks to get from B to A, and d) the strategic plan. In addition to the policy document reviews, each case study presents an overview of the following aspects for the three cities:

- City-wide statistics (modal split and population data).
- Overview of the push and pull measures implemented as part of the inner city mobility transition: *sociotechnical regime - material and technical elements.*
- Review of monitoring practices and effects of the mobility policies in the inner city: *sociotechnical regime - material and technical elements.*
- Reflection on stakeholders and public participation processes: *sociotechnical regime actors.*

Findings from the expert interviews enrich the information collected for each city. In addition to the FSSD, the Spectrum of Public Participation model by IAP2 (2018) is applied to the reflection on the public participation processes, which is structured per policy cycle phase for each city.

STEP 3. COMPARATIVE ANALYSIS - INNER CITY MOBILITY TRANSITIONS: AMSTERDAM, ROTTERDAM AND UTRECHT

The third step provides a comparative case study analysis, which is essentially a comparison of the three case study cities on each of the success factors identified in step 1 based on the analyses and reflections made in step 2. The three cities are scored on each success factor, and their final score results are grouped per axis of the mobility policy success assessment matrix – X axis containing the programmatic and temporal components, and Y axis containing the process and political components. Each city is then positioned on the success assessment matrix developed in step 2.

STEP 4. CONCLUSIONS AND RECOMMENDATIONS

This step concludes the research study by using the findings from the comparative analysis (step 3) to answer the main question, *"To what extent could the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht be considered 'mobility policy success stories'?"*. It then also derives the recommendations for practice, the limitations of this study and the recommendations for further research.

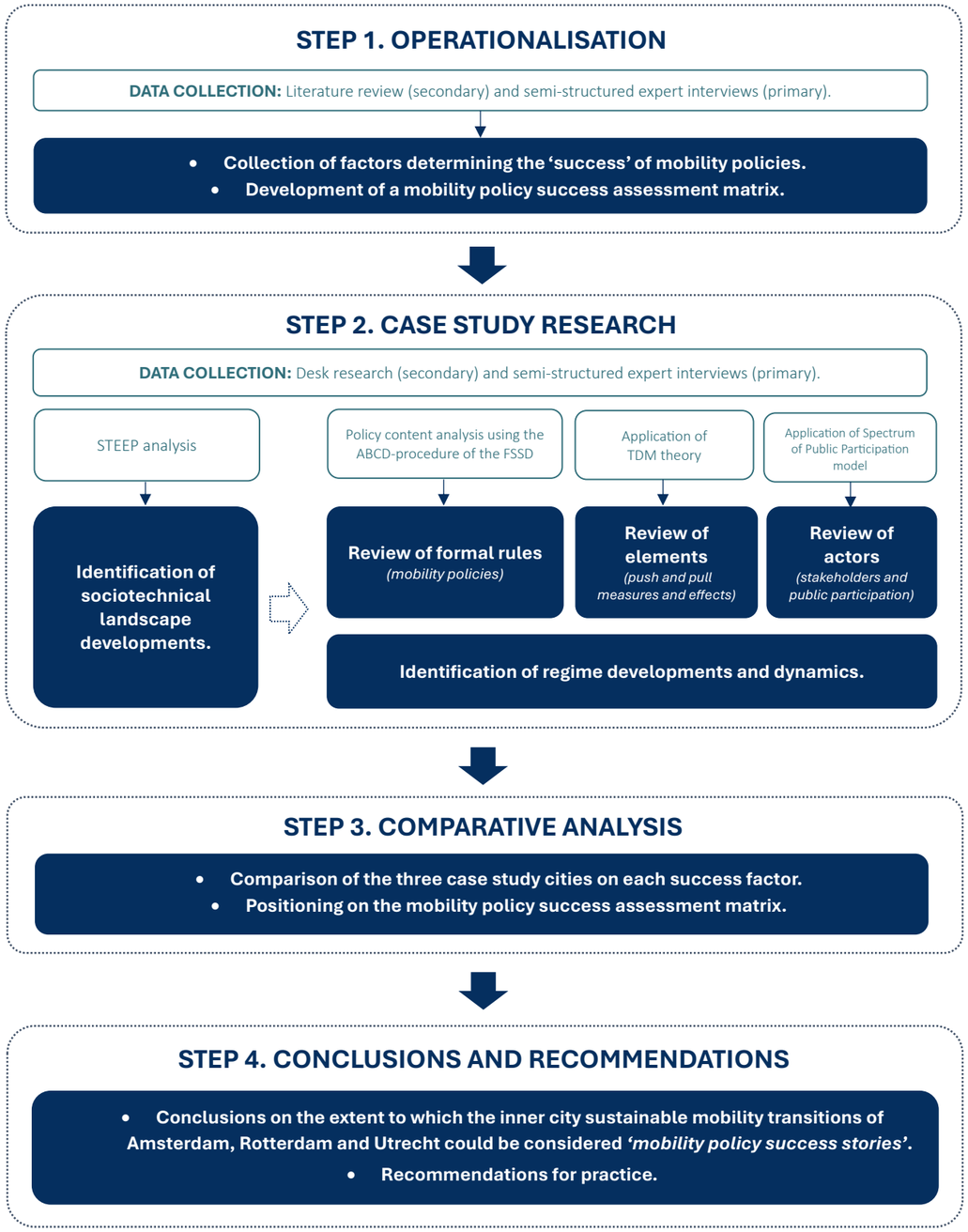


Figure 3. Research methods and steps.

3.3 RESEARCH METHODS

This chapter elaborates on the chosen data collection and analysis methods. A qualitative approach has been chosen as best-fitting for this master's thesis. Qualitative research focuses on the exploration and description of the research subject, making it predominantly inductive in nature (van Thiel, 2014). Whereas quantitative research is mainly used for confirming or testing something (e.g., a theory or hypothesis), qualitative research aims for an in-depth understanding of concepts, thoughts, and experiences (Streefkerk, 2023). Given the exploratory nature of the research subject in this case, a qualitative comparative case study method is most suitable (Yin, 2014).

DATA COLLECTION METHODS

There are two types of data collection methods – primary and secondary. Primary data collection refers to information collected by the researcher, with the most common types including questionnaires, interviews, focus groups, observation, and surveys. Secondary data collection refers to data gathered from already published sources, such as annual reports, policy documents, census data, and websites, among others (Taherdoost, 2021). This study has utilised the following data collection methods:

- *Semi-structured interviews (primary):*

  Seven semi-structured interviews with experts have been conducted online - six with city authority representatives involved in the mobility transitions of Amsterdam, Rotterdam and Utrecht, and one with a mobility researcher from the University of Amsterdam. The list detailing the conducted interviews can be found in **Appendix 2**. For the semi-structured interviews, interview guides have been developed (**Appendix 3**) and sent to each interviewee prior to the interview as a guideline for the conversation. These guides list topics to be discussed and give a set of questions to be asked (van Thiel, 2014). The interviews are later transcribed and coded using the software Atlas.ti. The coding methods are described in **Appendix 4**. Semi-structured interviews have been chosen as a way to enrich the findings from the study. Interviewing is a method often applied in case study research (van Thiel, 2014). Interviews have been chosen instead of surveying as they offer a more flexible way of collecting data. During the interviews, the researcher can pose supplementary questions (unlike in the survey) to better understand any answers given by the interviewees (van Thiel, 2014).

- *Literature review (secondary):*

  To operationalise success in mobility policymaking, the author has reviewed existing literature from various peer-reviewed journal articles from reputable journals in the fields of policy, transportation, and environment studies. The review aims to collect factors literature deems important when addressing the *'success/failure formula'* of mobility-oriented policies.

- *Desk research (secondary):*

  Desk research has been performed by consulting a range of sources available online. Some examples of the sources consulted include journal articles, city open data portals, official municipal documents (e.g., policies, progress reports, and annual budget reports), official websites of the municipalities featuring information on current and past mobility projects, and news articles, among others. Findings from the interviews have been complementing the desk research throughout the entire study.

DATA ANALYSIS METHODS

Various analysis tools and theory have been applied during step 2 of the research study:

- *STEEP analysis:*
  STEEP, also commonly used as PESTLE or STEP, is an acronym for Social, Technological, Economic, Environmental, and Political/Planning, and it originates from a 1967 reference as a tool for *'scanning the business environment'* (Richardson, 2017). Nowadays, STEEP is a macro external environment analysis method typically used by businesses to evaluate the external environment's impact on their operations. However, it also finds application in analyses for spatial planning problems (e.g., Mauree & Geneletti, 2016; Christodoulou & Cullinane, 2019) (Casañ et al., 2021). The method can provide a multidimensional perspective which helps unravel complex systems, such as transport systems. STEEP analysis also helps identify relevant factors that have a direct bearing on changing landscapes of the future (Szigeti et al., 2011). In the scope of this study, the method will be used to assess the external STEEP factors that influence the research subject - the mobility transition of inner cities.

- *Policy content analysis using the ABCD-procedure of the FSSD:*
  The contents of mobility policy documents have been analysed, namely, Autoluw (Amsterdam), Rotterdamse MobiliteitsAanpak (Rotterdam), and Mobiliteitsplan 2040 (Utrecht). For this, the ABCD-procedure of the Framework for Strategic Sustainable Development by Broman and Robèrt (2017) is applied. The procedure supports the execution of backcasting planning and redesign for sustainability and consists of four steps, slightly adapted for this analysis: Step A reflects on the overall vision of success, framed by the basic sustainability principles; Step B presents an overview of the current baseline - the current situation and challenges; Step C assesses the building blocks to get from current situation B to the achievement of the vision A; Step D comprises a review of the strategic plan to prioritise among the possible solutions established in C (Broman & Robèrt, 2017).

- *Application of Spectrum of Public Participation model to the regime actors review:*
  The degree of public participation during the different policy cycle phases has been evaluated. The Spectrum of Public Participation model by IAP2 (2018) has been applied for this. Developed by the International Association for Public Participation (an organisation working to advance the practice of public participation globally), the model lists five modes of public participation which fall on a progressive continuum of increasing influence on decision-making processes. It not only describes the goals of a mode but also the 'promise' of each mode to the public (Organizing Engagement, n.d.). The five modes of the spectrum are inform, consult, involve, collaborate, and empower (see figure 4).

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Figure 4. IAP2 Public Participation Spectrum (IAP2, 2018).

3.4 CASE STUDY RESEARCH

Geels (2011) points out that most empirical MLP studies use (single) case study methodologies; hence, transition research could benefit from applying other methods such as comparative case studies. This study utilises the comparative case study method by focusing on three cases which are studied in great detail. By choosing a limited number of cases and studying them in-depth, the researcher aims for depth instead of breadth (Bailey, 1992). The case study research strategy studies cases in their everyday, real-life setting (van Thiel, 2014).

CASE STUDY SELECTION

Van Thiel (2014) mentions three important choices to be made when designing case study research:

- *Number of cases: single or multiple (contrasting or homogeneous)*
  In multiple case studies, several cases are included (van Thiel, 2014), as is the instance of this master thesis which delves into 3 homogenous case studies. The set of cases is homogenous as all the selected cities are medium-sized and located in the Netherlands [medium-sized cities have a population between 250,000 and 1 million inhabitants, as classified by the UN-Habitat (2022)]. Furthermore, they all have existing policies focused on or containing ambitions about reducing car access in their inner cities. When a homogenous set of cases is studied, research findings are expected to be homogenous as well, also referred to as replication logic (van Thiel, 2014). Thus, if the same (or similar) results are generated, the effects that have been measured are also likely to be valid for other cases not studied as part of the thesis. This refers to the generalisability of the case study research: the relevance, significance, and external validity of findings for situations beyond the research project (Duff, 2006). The three cases could then be named a stratified sample, one which is selected to generalise for a specially selected subgroup (i.e., other medium-sized cities in the Netherlands or even outside the Netherlands) (Flyvbjerg, 2006).

- *Number of measurements: single or multiple (time frame: period, spacing)*
  The study is focused on policies targeting an inner city mobility transition in the three cities published during the period 2020-2021 (single timeframe), envisioning measures with a timespan until 2040.

- *Research methods: how many and which ones (triangulation)*
  For data collection, semi-structured expert interviews have been conducted alongside the literature review and desk research. A number of analysis tools and theories have been applied, such as STEEP analysis, policy content analysis utilising the FSSD (Broman & Robèrt, 2017), and theory from the academic fields of transition studies, transport demand management, and public participation.

The case study selection process is an important aspect for the latter comparison and eventual generalisability of the findings (Flyvbjerg, 2006). The paragraphs below elaborate the case study selection criteria. Three of the criteria were already described above – a selection of medium-sized cities located in the Netherlands (homogeneity) with existing policies published in the period 2020-2021 focused on or containing ambitions about reducing car access in their inner cities (homogeneity and single timeframe). The focus is on medium-sized cities as they have the potential to act as front-runners in the mobility transition and, hence, an inspiration for other cities since they are already more advanced in their transition due to the availability of enough resources and capacity compared with small-sized cities. In the Netherlands, there are no large-sized cities [(with a population between 1 and 5 million inhabitants, as classified by the UN-Habitat (2022)].

The timeframe of the case is also concerned with the availability of enough information and suitable interview participants linked to it. This is another criterion used for selecting the cases with the goal of maximising the utility of information from the rather small sample - information-oriented selection (Flyvbjerg, 2006).

In addition, cases are selected based on their urban form and the scale of intervention. Karlsson (2016) states that the case under investigation must have spatial boundaries so that it is clear whether a certain area is included in the case or not. Concerning the urban form, the cases selected for this study all feature measures implemented within existing urban areas and, hence, not new developments. The scale of intervention concerns areas within the inner cities (i.e., the city centre – either historic or old/modern). Historic city centres are those developed before WW2 (before 1939), and old/modern city centres are those developed after WW2 (after 1945).

The table below provides an overview of the three cases with regard to the selection criteria. The table does not elaborate on the availability of information, as the author of the study has already performed preliminary research on the topic, concluding that enough documentation and information is available, allowing for in-depth research on the three cases.

Case Criteria	Amsterdam	Rotterdam	Utrecht
Geographic location	The Netherlands, province of North Holland	The Netherlands, province of South Holland	The Netherlands, province of Utrecht
Population size (2024)	931,748	670,610	374,374
Existence of policies focused on or containing ambitions about reducing car access in their inner cities adopted in the period 2020-2021	Agenda Amsterdam Autoluw (adopted by City Council in 2020)	Rotterdamse MobiliteitsAanpak (adopted by City Council in 2020)	Mobiliteitsplan 2040 (adopted by City Council in 2021)
Existence of inner city car-decreasing measures initiated/implemented in relation to the three policies	e.g., on-street parking spaces removal and pilot closure of Weesperstraat	e.g., experiments Oude Westen and Maastunnel corridor	e.g., redesign of Weerdsingel Oostzijde and expansion of the pedestrian area
Scale of intervention	Historic city centre	Old/modern city centre	Historic city centre expanding with a modern side

Table 2. Overview of the three cases with regard to the selection criteria.

3.5 RESEARCH LIMITATIONS

An important limitation linked to this study is that an initially successful change can turn out to be a failure in the long term after the moment of measurement, and vice versa (van Thiel, 2014). This can be addressed by a follow-up study on the progress of the implementation and the outcomes of the policies in the long run after all implementations and evaluations have been completed in the future.

Another potential limitation could be that experts are unwilling to contribute to the research by being interviewed. To mitigate this, the researcher began contacting individual persons in an early stage of the thesis writing. In case the contacted people were unavailable or not willing to participate, the researcher asked them for contacts of their colleagues who are part of the mobility policymaking processes.

RELIABILITY OF RESEARCH

Reliability, used to evaluate the quality of the research, concerns whether the study results are repeatable (Bryman, 2016). To ensure reliability, the results of the study need to be precise, stable, and reproducible. Hence, in addition to conducting semi-structured interviews, the researcher consulted official policy documents and various literature sources. That way, the interview findings are reconfirmed using existing sources elaborating on the topics discussed during the interviews. This is referred to as triangulation, the process of collecting or processing information using different operationalisations, data sources, researchers, or methods (van Thiel, 2014).

Interviews have been chosen as a method of collecting data due to the flexibility they allow. However, the flexible format of semi-structured interviews can compromise reliability as each interview will differ from the one before (Robson, 2002). To at least have a uniform interview structure, the researcher has prepared an interview manual as a guideline for the conversations, which is based on the conceptual and methodological approach.

VALIDITY OF RESEARCH

Validity, also used to evaluate the quality of the research, concerns the integrity of the conclusions that are generated from the research (Bryman, 2016). This study analyses a homogenous set of cases that would potentially result in homogenous research findings, referred to as the replication logic. The accurate replication of the findings is indicative of high reliability and validity (van Thiel, 2014). If the same results are found for all three cases, or two of them, the measured outcomes are also likely to be valid for cases not studied (van Thiel, 2014), such as other cities in the Netherlands or other medium-sized cities in Europe (generalisability). However, typically, it is difficult to generalise findings to other situations, either because the case is too unique or because the results apply solely to the particular context studied (Flyvbjerg, 2006). Thus, the external validity of case studies is rather limited in contrast to their internal validity which tends to be high due to the wealth of information gathered.

A validity-related weakness could be that the conclusions generated from the interviews could be influenced by the researcher, as results are subject to be biased by the researcher's values. To tackle this, the researcher has double-checked with the interviewees whether the interpretations and conclusions from the responses reflect their story in reality.

04

WHAT IS SUCCESS IN MOBILITY POLICYMAKING?

This chapter explores how literature addresses success in mobility policymaking (theoretical basis) and how city authority representatives define success based on their professional experience in mobility policymaking (practical basis). These explorations result in the identification of factors impacting the success rates of mobility policymaking processes and the subsequent development of a mobility policy success assessment matrix.

© Carl Raw · 3 January 2018 · Bicycle parked at steel fence

4.1 THEORETICAL DEFINITIONS OF SUCCESS

This chapter reviews how literature addresses sustainable mobility policymaking and, in particular, how it discusses and defines policy success. Various literature sources have been consulted with an emphasis on policy theory and articles focusing on policy success/failure factors in the mobility context. The result is a review of ways success can be assessed and a review of factors literature deems important when addressing the *'success/failure formula'* of mobility-oriented policies.

POLICY DESIGN AND THE POLICYMAKING CYCLE

To delve further into ways academic literature discusses successful sustainable mobility policymaking, it is firstly instrumental in providing an understanding of how policies are developed and what they comprise. Policy design is the starting point for this exploration with its two core elements – goals and instruments. Policy goals are essentially government objectives in a certain policy area, while instruments are the means (i.e., tools) used throughout the policy process to achieve those objectives (Howlett & Rayner, 2007; Howlett, 2014). Policy designs are multi-goal and multi-instrument interactive mixes (Howlett, 2014).

Van Geet et al. (2019) provide a comprehensive review of the policy design dynamics with a focus on the national transport infrastructure planning context in the Netherlands. Findings from their article suggest that policy designs evolve by building on earlier design choices and that there are certain design criteria, a key requirement for policies to effectively produce optimal outcomes. In particular, policy designs need to have coherent goals, consistent instruments, and congruent goals and instruments (Howlett & Rayner, 2013), meaning that 1) all policy goals relate to the same established overall policy objectives and can be pursued simultaneously without trade-offs; 2) instruments support each other and work together for the achievement of the same goal; and 3) goals and instruments serve corresponding purposes (Kern & Howlett, 2009).

The policy cycle, on the other hand, refers to the main stages of the policymaking process, typically including agenda-setting, policy formulation, decision-making, implementation, and evaluation (Howlett et al., 2009). This thesis will not go further in depth exploring the different types of general policymaking processes recognised by scholars worldwide to prevent losing focus from the Dutch case.

POLICY SUCCESS AND FAILURE FACTORS (THEORETICAL REVIEW)

Following a rigorous literature search on the topic of mobility policymaking, including scientific literature, case study reports, and others, using various keywords and combinations of keywords, there was no mention of a universally or an EU-agreed upon definition of a 'successful mobility policy'. Most of the reviewed articles focused on the general policy field without specifying a mobility context or case study (e.g., McConnell, 2015; Compton et al., 2019; Leong & Howlett, 2021).

For the identification of policy success, Compton et al. (2019) provide an evaluation tool featuring four assessment components. In terms of *programmatic assessment*, a successful policy has a well-developed and empirically feasible public value proposition while theory of change underpins the policy, all culminating in the achievement of beneficial social outcomes. *Process assessment* of a successful policy process relates to thoughtful and fair policymaking practices enhanced using a wide range of evidence, expertise, and advice. *Political assessment* examines the stakeholder support for the policy and whether it enhances the political capital and reputation of the responsible public institutions. Finally, *temporal assessment* deals with assessing the endurance of the policy's value proposition and whether the policy can flexibly adapt in response to changing circumstances and performance feedback.

The authors continue by exploring three design factors contributing to achieving policy success. The first of these is the *inclusivity of the process*. The involvement of and bottom-up cooperation of affected stakeholders may lead to advantages in relation to producing more sustainable institutions (Ostrom, 1990). Policy solutions can become better tailored when informed by local knowledge of contexts and informal institutions. Collaboration with affected stakeholders may facilitate greater trust and legitimacy in the policy process and outcomes (Bryson et al., 2014; Gouillart & Hallett, 2015; Klijn & Koppenjan, 2016; Compton et al., 2019). According to Compton et al. (2019), successful policies are those where affected societal actors were actively collaborating with policymakers throughout the policy cycle.

The second factor is the *degree of innovation* which, according to Compton et al. (2019), refers to the extent to which important elements of the policy design were imitated or invented. Invented policy designs feature elements which are completely new to the sector/context where they are being applied. Based on their operationalised assessment, Compton et al. (2019) state that all or most of the key elements were invented and not imitated in fully successful policies.

The third factor is the *pace of policy adoption*. Adopting a policy requires the change of certain elements of the status quo. Some policy scholars argue that, especially when facing large and urgent challenges, politics is required to take bold and quick steps or use the 'window of opportunity' which often crises present (Boin et al., 2009; Hogan & Feeney, 2012), as was the case with the COVID-19 pandemic (Amri & Logan, 2021; Mintrom & True, 2022). Based on Compton et al. (2019), successful policy processes encompass fast-paced change adoptions.

To expand on this review and make it more context-specific, the following pages will discuss findings from the review of various transport policy journal articles. Despite not being focused on defining successful mobility policymaking, the results from these articles provide valuable insights into a number of factors which can be impactful when it comes to the outcomes and evaluations of mobility policies. Following the review, the factors were divided into two categories – failure factors, i.e., those that have been observed as obstacles to a successful policy cycle; and success factors, i.e., those that have contributed to a complete and effective policy cycle with positive outcomes and successfully achieved policy goals. Tables 3 and 4 summarise the failure and success factors, and the paragraphs below delve into each.

FAILURE FACTORS	Examples of transport policy literature confirming the factor	Link to the reviewed general policy theory
LACK OF ASSESSMENT MECHANISMS	(Böhler-Baedeker & Lindenau, 2016) (Gühnemann, 2016) (Liu & Dijk, 2022)	· No metrics for the achievement of beneficial social impact (programmatic assessment) · Insufficient use of evidence to support policymaking processes (process assessment) · Policy unable to respond to performance feedback due to lack of sufficient performance assessment (temporal assessment)
LACK OF CAPACITY (PERSONNEL) AND KNOWLEDGE	(Gühnemann, 2016) (Chinellato et al., 2017) (Liu & Dijk, 2022)	· Lack of sufficient institutional arrangements and capacities necessary for effective policy implementation (process assessment) · Slower adoption of change (pace of policy change)
LACK OF ADEQUATE AND DEDICATED FUNDING	(Liu et al., 2024)	· No adaptation to changing circumstances in cities requiring sustainable mobility solutions (temporal assessment) · Policy design elements are imitated suiting the national and not the local interests (degree of innovation)
CONFLICT AMONG STAKEHOLDERS INVOLVED IN THE POLICY CYCLE	(Liu & Dijk, 2022)	· Lack of sufficient deliberation processes and institutional arrangements as part of the policy cycle processes (process assessment) · Stakeholder support for the policy lacks (political assessment)

Table 3. Overview of transport policy failure factors based on literature.

Lack of assessment mechanisms

One of the principal obstacles to effective sustainable mobility change in European cities is the neglect of policy assessment, and the accompanying poor culture for monitoring the impacts of mobility policies (Böhler-Baedeker & Lindenau, 2016; Gühnemann, 2016; Liu & Dijk, 2022).

Lack of capacity (personnel) and knowledge

Major restraints faced by policymakers in the mobility domain are the lack of staff capacity and sufficient technical knowledge linked to data collection, selection, and analysis in governments (Gühnemann, 2016; Chinellato et al., 2017; Liu & Dijk, 2022). The previous factor emphasises the lack of assessment mechanisms; however, even when such are in place, the established mechanism becomes obsolete if the authority lacks the right personnel and knowledge to perform the assessment. Municipality employees in two Dutch cities report that their institutions have had difficulties with selecting the right data and indicators to use when facing larger data sets. This can be a challenge, especially when coupled with a limited number of competent staff members who can handle and interpret the data for the delivery of policy messages (Liu & Dijk, 2022).

Lack of adequate and dedicated funding

An important conflict in the governance of sustainable mobility transitions is that cities are dependent on the national governance level for the funding of sustainable mobility measures, but often national funding does not promote sustainable urban mobility practices. This is evident in the Dutch case, as reported by Liu et al. (2024), where national funding has been primarily allocated to solving car mobility bottlenecks. Projects which have benefited the most are car road infrastructure adaptations and extensions.

Conflict among stakeholders involved in the policy cycle

Literature in sustainable mobility transitions typically addresses the well-known conflict dynamics between authorities and stakeholders affected by the measures (often residents). Next to those, there are sometimes internal conflicts among public sector representatives in relation to priorities. For instance, Liu and Dijk (2022) state that based on interviews with such representatives in the Netherlands, policymakers and program managers can have conflicting views with their technical colleagues, as they perceive data as less important than political and societal issues.

SUCCESS FACTORS	Examples of transport policy literature confirming the factor	Link to the reviewed general policy theory
INTEGRATION OF SEVERAL POLICY INSTRUMENTS OF DIFFERENT NATURE	(Scheepers et al., 2014) (Givoni, 2014) (Buehler et al., 2017) (Dijk et al., 2018) (Glazener & Khreis, 2019) (Piatkowski et al., 2019) (Kuss & Nicholas, 2022)	· Selection of policy instruments producing valuable social impacts (process assessment) · Policy instruments anticipate and reflect changing circumstances (temporal assessment)
SETTING GENERAL POLICY GOALS	(Dunn, 2017) (Dijk et al., 2018) (van Geet et al., 2019)	Policy goals can be adapted further on the lower levels to anticipate and reflect changing circumstances (temporal assessment)
CLEAR AND STRAIGHTFORWARD POLICIES	(Gu et al., 2018)	Policy gathers more stakeholder support and enhances the reputation of its developers (political assessment)
COHERENCE OF POLICY GOALS	(van Geet et al., 2019)	All or most of the key elements of the policy were invented (degree of innovation)
INVOLVEMENT OF STAKEHOLDERS IN THE POLICY CYCLE	(Rotmans et al., 2001) (Bulkeley, 2010) (Liu & Dijk, 2022)	Societal actors affected by the policy actively collaborated with policymakers throughout the policy process (process inclusivity)
TRUST AND SUPPORT FOR GOVERNMENT/POLICY	(Cools et al., 2011) (Huber & Wicki, 2021) (van Wee et al., 2023)	Association with the policy enhances the reputation and political legitimacy of both its architects and its supporters (political assessment)
EXISTENCE OF DATA FOR MONITORING IMPACT	(Dijk et al., 2018) (Liu & Dijk, 2022)	· Use of evidence to support policymaking processes (process assessment) · Policy can respond to performance feedback due to performance assessment (temporal assessment)

Table 4. Overview of transport policy success factors based on literature.

Integration of several policy instruments of different nature

Many journal articles suggest that effective city-level policies targeting car use reduction rely on more than a single policy instrument, often a package of different policy instruments (Scheepers et al., 2014; Givoni, 2014; Buehler et al., 2017; Dijk et al., 2018; Glazener & Khreis, 2019; Kuss & Nicholas, 2022). For instance, in their study on effective interventions to reduce car use in European cities, Kuss and Nicholas (2022) observe that cities with effective interventions typically combine between two and four policy instruments. Transport policy literature further suggests that the most successful modal shifts are attributed to a combination of push and pull measures (Buehler et al., 2017; Piatkowski et al., 2019).

Setting general policy goals

Studies observe that policy goals are increasingly defined in an abstract manner deliberately with the objectives of leaving more room for operationalisation at the regional and local levels, maintaining political flexibility, and gaining more acceptance among the public (Dunn, 2017; Dijk et al., 2018; van Geet et al., 2019). Setting a general goal is seen as the first step towards a clearer discussion on an effective policy package and the specific modal shift goals to be monitored for the evaluation of success. This would, in turn, require data on the before and continually after situations (Dijk et al., 2018).

Clear and straightforward policies

A study by Gu et al. (2018) on congestion pricing suggests that people are more likely to accept policies which are easy to understand and implement, highlighting the importance of clear and straightforward policies. Transparency and well-defined elements within a policy are similarly well-valued aspects, all of which could contribute to a wider public acceptance of policy.

Coherence of policy goals

In their article exploring transport policy design dynamics in the Dutch context, van Geet et al. (2019) highlight that the coherence of national transport planning goals was maintained through replacement (i.e., new design elements are deliberately put in the place of old ones; Streeck & Thelen, 2005). This allowed for little influence from previous policy design choices and new goals developing rather flexibly. Furthermore, policy strategies require a comprehensive and coherent package of mutually supportive goals working towards achieving the overarching policy goal.

Involvement of stakeholders in the policy cycle

Local administrations are closer to their citizens than the national governments which usually results in shorter decision-making timeframes for cities in comparison to national governments (Rotmans et al., 2001; Bulkeley, 2010). As previously noted, involving key stakeholder groups in policy cycles has become widely used in democratic governments with many reaped social and political benefits. For instance, policymakers from two Dutch cities have expressed appreciation for the increased cooperation with local businesses, which proved to be a big advantage in the data-gathering process. This has led to increased effectiveness of the implemented measures and an easier process in reaching the policy goals (Liu & Dijk, 2022).

Trust and support for government/policy

Policy acceptance is highly dependent on the degree of trust in policymakers and the government (Cools et al., 2011, Huber & Wicki, 2021). In the transport policy domain, support for candidate policy options by the wider public has been observed as one of the key factors that might affect a successful implementation (van Wee et al., 2023).

Existence of data for monitoring impact

The existence of data for the situation before the policy was implemented and continually after is an integral part of a successful monitoring and evaluation process (Dijk et al., 2018). Particularly for the case of sustainable mobility policies, the existence of good mobility data has proven an important ingredient for an improved assessment of the changes (e.g., widely used for the development of Sustainable Urban Mobility Plans in European cities; Liu & Dijk, 2022). For instance, representatives from Dutch cities have reported that both qualitative and quantitative data have provided more insights into the relations between policy measures and traffic impacts, enhancing the evidence-based policymaking process (Liu & Dijk, 2022).

4.2 PRACTICE-BASED DEFINITIONS OF SUCCESS

This chapter discusses the way city authority representatives working in mobility policymaking define success and failure in this field based on their work experience and expert opinions. These findings are derived from the semi-structured interviews performed for this thesis. Five of the total seven interviewees offered elaboration on their perception and experiences surrounding the words success/failure in their field of expertise – two are civil servants from Rotterdam, two from Amsterdam, and one from Utrecht. Their backgrounds feature a strategic advisor mobility, policy advisor for traffic and public space, strategic advisor engineering bureau, senior policy advisor and traffic engineer / urban planner, and head of area development inner city.

MUNICIPAL AUTHORITIES IN THE NETHERLANDS

The highest governing bodies in Dutch municipalities are the municipal councils which are elected every 4 years by the residents of the municipality (Government of the Netherlands, n.d.). This council is responsible for appointing aldermen (i.e., portfolio holders) for the different policy areas. Together with the mayor, they form the municipal executive. The term of portfolio holders coincides with that of the municipal council – 4 years. Each portfolio holder promotes residents' interests in their policy area (Government of the Netherlands, n.d.). Regarding mobility, national governments are responsible for motorways, provincial governments for provincial roads, and local authorities for the roads located within the municipality's borders (Figee et al., 2008). Civil servants are the ones developing and implementing the mobility policies, headed by a dedicated alderman on mobility. There are civil servants with various backgrounds involved in the policy cycle, from the ones writing and developing the plans to advisors with expert knowledge, engineers with technical knowledge, data analysts, program/project managers heading the executions, and many others. Despite the allocation of individual responsibilities, the final responsibility for the delivery and consequence of the mobility policy lies on the mobility alderman (Liu & Dijk, 2022).

The strategic advisor mobility from Rotterdam interviewed for this thesis mentioned that typically in policy documents, the plans are made for the next few decades, for instance, for the next 20-30 years. However, the municipal council in charge has only 4 years to act on a concrete policy program. The interviewee specified that within the first year of the mandate, policies can still be adapted, but then momentum comes following that year when politicians are expected to deliver and there is no more time for alterations. According to him, if all departments involved in the development and delivery of that policy work at the same tempo, the nature of politics does not matter as much.

In contrast, the interviewee from Utrecht, a senior policy advisor, stresses that the nature of politics has played a major role in terms of mobility policy in Utrecht. The advisor mentioned that the city's nature of politics over the past decade has been primarily central/left-wing. Due to the fact that there is not much change in the ideologies of the elected councils every 4 years, the direction of the mobility policy has remained stable, making it easier to deliver in the long-term as changes envisioned in policies typically require more than 4 years to deliver: "*Mobility was always in the hands of the green party which makes it that you have a clear policy, and then it is easy to do our jobs. We are able to continue with the chosen policy in the longer term*."

This interviewee proceeds to clarify that both the successes and issues Utrecht is currently facing are the result of policies introduced 10-15 years ago. Nowadays, Utrecht is facing challenges as a result of the enormous growth of cycling and bike parking, and "*although it looks like a difficult issue nowadays, it actually is the result of good policy and sticking to that policy which started 10-15 years ago*", as stated by the interviewee. He refers to a policy to boost cycling in the city, which was introduced in 2006-2007 when the then active mobility alderman began convincing politicians to invest extra money in cycling infrastructure. Today, the results from the various policy directions targeting cycling are visible in the city, for example, through the construction of the world's largest bicycle parking, Stationsplein, which opened in 2019 and has 12,500 parking places (City of Utrecht, n.d.).

POLICY SUCCESS AND FAILURE FACTORS IN THE DUTCH CONTEXT (PRACTICE-BASED REVIEW)

The following section delves into the factors mentioned by the interviewed experts, which they consider crucial in relation to the delivery of successful policies in the mobility field. The consultation with the experts identified 10 success factors and 3 failure factors. Tables 5 and 6 summarise the failure and success factors.

FAILURE FACTORS	Interviewee(s) mentioning it	Link to factors explored in the literature review
MISMATCH BETWEEN MUNICIPAL DEPARTMENTS	Strategic Advisor Mobility (City of Rotterdam)	Conflict among stakeholders involved in the policy cycle *(see table 3 and page 39)*
LACK OF CLEAR ROLES WITHIN THE ORGANISATION	Strategic Advisor Mobility (City of Rotterdam)	
LACK OF COHERENCE AND COLLABORATION BETWEEN DIFFERENT MUNICIPAL DEPARTMENTS	Strategic Advisor Mobility (City of Rotterdam) Senior Policy Advisor and Traffic Engineer / Urban Planner (City of Utrecht)	

Table 5. Overview of transport policy failure factors based on the consultation with interviewed experts.

The strategic mobility advisor from Rotterdam stressed the importance of the way the organisation is structured when it comes to mobility policymaking and how the various departments involved cooperate. Through his previous experience working at the City of The Hague, he explained where Rotterdam is lacking compared to how the administration of The Hague is structured. Firstly, he explained that sometimes there is a mismatch between the civil servants working on the execution of projects and those involved in the vision-making processes, such as planners and managers, which can play a major role in the power of an institution to deliver. The policy cycle in The Hague, as explained by the interviewee, is structured in a way that each phase of the policy cycle is the responsibility of a different department. For instance, the mobility department prepares the preliminary draft (Dutch: voorontwerp), and then hands it on to other departments responsible for expanding on that draft, when it finally ends in the hands of the engineers' bureau, which will deliver and execute the plans. This shows that there are clear roles within the different departments – who is responsible for what phase of the project. As mentioned by the expert: "*There is a very hard line. In Rotterdam, there is no line.*" He further elaborates by stating that within his department, "*a lot of people [...] often do the whole project till the end*".

Based on his professional opinion, the lack of matching understanding of what the policy is about and how it will be delivered between the different departments involved, the lack of clear roles within the departments, and the lack of cooperation between them in the various policy cycles can be detrimental to the delivery of mobility policies:

> *"My opinion is that it would be better if there is a hard line, and not that you have a plan and you throw it to them, but that you work together, and roles are clear. We have to do that better in Rotterdam, but also in other cities."*
>
> - Strategic Advisor Mobility at City of Rotterdam

Theme	SUCCESS FACTORS	Interviewee(s) mentioning it	Link to factors explored in the literature review
POLICY GOALS AND INSTRUMENTS	Interdisciplinary policymaking	Strategic Advisor Mobility (City of Rotterdam) Head of Area Development Inner City (City of Rotterdam)	Integration of several policy instruments of different nature *(see table 4 and pages 40-41)*
	Presence of policy instruments on all city scales, including street level	Strategic Advisor Mobility (City of Rotterdam)	
	Civilians and public administration understand the policy goals and direction in all policy cycle stages	Strategic Advisor Engineering Bureau (City of Amsterdam)	Clear and straightforward policies *(see table 4 and pages 40-41)*
INTERNAL ORGANISATION AND POLITICAL LANDSCAPE	Municipal departments working with the same tempo	Strategic Advisor Mobility (City of Rotterdam)	Trust and support for government/policy *(see table 4 and pages 40-41)*
	Presence of a stable political landscape	Senior Policy Advisor and Traffic Engineer / Urban Planner (City of Utrecht)	
	Political survival of governing party	Policy Advisor for Traffic and Public Space (City of Amsterdam)	
	Politicians get re-elected	Senior Policy Advisor and Traffic Engineer / Urban Planner (City of Utrecht)	
	Trust and support for government/policy	Strategic Advisor Engineering Bureau (City of Amsterdam) Head of Area Development Inner City (City of Rotterdam)	
POLICY OUTCOMES	Results of the policy are 'visible' in the long-term	Senior Policy Advisor and Traffic Engineer / Urban Planner (City of Utrecht)	Existence of data for monitoring impact *(see table 4 and pages 40-41)*
	Presence of positive quantitative impacts	Strategic Advisor Engineering Bureau (City of Amsterdam)	

Table 6. Overview of transport policy success factors based on the consultation with interviewed experts.

The explanations of the 10 success factors below are organised per three themes they belong to: policy goals and instruments, internal organisation and political landscape, and policy outcomes.

Policy goals and instruments

Both interviewed experts from Rotterdam mentioned the importance of an interdisciplinary approach when it comes to mobility policymaking, meaning viewing mobility from different policy lenses. As mentioned by one of them, in the past, based on his longtime experience being employed in city administrations, the mobility field was limited and mostly focused on the design element. In contrast, mobility policies nowadays also integrate matters of welfare, health, pollution, and others, which have become fundamental to address concerning urban mobility. Next to that, he mentions that an important aspect urban mobility policymakers must pay attention to is introducing policy instruments on different city scales, including street level. This links well with the findings from the literature review stressing the need to integrate several policy instruments of different natures. An addition to this based on the practice-based review in this chapter could be *'... of different nature and scales'*.

In relation to the policy goals, an interviewee from the city of Amsterdam mentioned that a crucial element to gaining the support of both civilians and civil servants is that all understand the policy goals in all stages of the policy cycle. He suggests that people should be focused on the positive goals the policy strives for to prevent them from imagining the future outcomes of the policy in a negative light. This links with the need for clear and straightforward policies to enhance the public's understanding of the policy goals and elements established through the literature review.

Internal organisation and political landscape

As previously mentioned, the way city authorities are organised internally, and the state of the political landscape could be both important for a policy's success. For instance, one of the Rotterdam interviewees mentions that organisations need a clear role distinction between the departments, collaboration between them, and unison in their working tempo. The next few factors most interviewees mentioned are linked to the local political situation. The stability of the political landscape has been labelled as an important factor, which essentially means that parties with the same or similar political ideology and position remain in the majority of the seats of the local government following the 4-year terms. This makes it easier to proceed with a chosen policy direction in the long term, as often changes envisioned in policies require longer than 4 years to be realised and take effect, as the interviewee from Utrecht mentioned.

Another political factor mentioned by an interviewee from Amsterdam and the interviewee from Utrecht is that a successful policy term can be one where following it, the alderman responsible for the mobility direction has 'survived' politically, and when the politicians responsible for the policy put in place get re-elected for another term: "*...it is a good policy because every four years, the population of this city votes central-left wing and accepts that in mobility there is that green vision*".

This links with the need for society and all members of the local administration to trust and support the policy direction, and those who have put it forward, as also established through the literature review. However, as mentioned by an advisor from Amsterdam, often, when the execution of the plans begins, it is difficult to keep everyone on board. If the local administration succeeds in doing so, then the policy cycle will be a success:

> *"One of the most important things of a policy is that it is backed by the public administrators and by the civilians in Amsterdam. We learned the past years that a lot of people from the government and civilians really want to make a mobility transition. However, when you start with the execution of the measurements, then it is really hard to keep everyone on board. If you succeed to do so, a policy will be a success."*
>
> - Strategic Advisor Engineering Bureau at City of Amsterdam

Policy outcomes

The strategic advisor from Amsterdam referred to quantitative impacts when looking for success in mobility policymaking, giving the examples of an improved active mobility modal share and reduced traffic incidents. However, he clarifies that it is almost impossible to justify these impacts solely with a policy which was put in place, especially in the short term. The expert from Utrecht mentioned that such impacts can be observed in the long term and that it is one of the important success factors - when the results of a policy are visible in the long term and continue producing impact by getting reinforced by new policies in the same or similar direction. He provides the example of cycling and the development of bicycle parking in the city of Utrecht: "*The result now in 2023 is 'oh my god, the population did it'. This means we have a huge growth in cycling, in bike parking, which arises new challenges, but it is the result of the chosen policy initially to change their behaviour.*" This links well with the need to perform monitoring and have sufficient data to assess impacts quantitatively, such as modal shift and amount of traffic incidents, identified through the literature study.

4.3 CONCLUSIONS:
MOBILITY POLICY SUCCESS ASSESSMENT FRAMEWORK

This chapter uses the analyses done in the previous chapters, 4.1 and 4.2, to provide a framework for the assessment of policy success in mobility policymaking in the context of this thesis. It combines the knowledge from both theory and practice to provide a review of all success factors that will be considered and how they will be used in a framework to assess the overall performance (i.e., success) of the three policies which will be analysed further.

As a starting point, the author takes the general policy evaluation tool provided by Compton et al. (2019). All the mobility policy-related success and failure factors explored in the literature and practice-based review are allocated to each of the assessment components part of this evaluation tool, namely programmatic, process, political and temporal assessment, and the three design factors - inclusivity of the process, degree of innovation and pace of policy adoption. Based on the results from this allocation, process inclusivity and degree of innovation each featured only one factor, and the pace of policy adoption none. Therefore, one of these factors was reallocated to programmatic assessment and the other one to process assessment to ease the analysis process. Next to that, some of the factors were grouped into one factor due to their similar nature or close relation. Finally, all success and failure factors were transformed into 'success' factors in the way they are phrased. The grouping, allocation, reallocation, and paraphrasing details can be accessed in **Appendix 5**. The results from those are as follows:

- Programmatic assessment with 4 mobility-related success factors.
- Process assessment with 4 mobility-related success factors.
- Political assessment with 4 mobility-related success factors.
- Temporal assessment with 2 mobility-related success factors.

Table 7 on the following page presents an overview of the success factors per assessment component, which will be taken into consideration when assessing the success of the three policies. Next, it is essential to establish a ranking system based on which each factor will be assessed. The weight of the different factors and assessment components is not taken into consideration for this analysis as there is not enough evidence from both literature and practice to establish this. Therefore, for example, success factor *'Interdisciplinary policymaking'* has the same weight as *'Presence of data for monitoring impact and sufficient assessment mechanisms'*. The same applies to the assessment components – all four have the same weight. As temporal assessment features only 2 success factors, higher numerical weight is given to those factors to ease the analysis. Thereby, each assessment component can have a maximum score of 4 points, as the maximum score for each success factor is 1 (except for the temporal assessment factors, where a maximum of 2 points can be given to each, resulting in a maximum of 4 points for this component). The possible scores for each success factor will be developed later following the case study research.

The next step of the analysis is to develop a two-by-two matrix, which is a simple and effective way of sorting qualitative data as it enables the clustering of information into four categories (Institute for Manufacturing University of Cambridge, n.d.). For the matrix's development, the programmatic and temporal assessment components have been grouped to belong to the X axis, and process and political to belong to the Y axis. This has been done as the success factors listed in those relate to each other. For example, the integration of several policy instruments of different nature and scales (programmatic) is co-dependent with the presence of sufficient and dedicated local funding (temporal). Likewise, stakeholders affected by the policy actively collaborating with policymakers through the policy cycle (process) is linked to the presence of societal trust and support for the policy direction and the policymakers (political). Each of the axes has a maximum score of 8 points (4 from each component). The mobility policy success assessment matrix can be found on page 48 (see figure 5).

Assessment component	SUCCESS FACTORS
PROGRAMMATIC ASSESSMENT	Mobility policy program is delivered in consideration with other related policy areas
	Policy program features mutually supportive goals working towards the achievement of the overarching policy goal
	Integration of several policy instruments of different nature and scales
	Policy produces positive social impacts (quantitative) in the long-term
PROCESS ASSESSMENT	Presence of enough capacity (personnel) and knowledge throughout the policy cycle
	Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments
	Stakeholders affected by the policy actively collaborated with policymakers throughout the different phases of the policy cycle
	Presence of data for monitoring impact and sufficient assessment mechanisms
POLITICAL ASSESSMENT	Policy documents have a clear and straightforward direction which is understood by both civilians and public administration throughout the whole policy cycle
	Society and public administration trust and support the policy direction, and those who have put it forward
	Presence of a stable political landscape in the city
	Political survival of the governing body
TEMPORAL ASSESSMENT	Presence of sufficient and dedicated local funding anticipating the changing needs for sustainable mobility in cities
	Framing of general policy goals to anticipate changing circumstances on the lower geographical scales

Table 7. Overview of transport policy success factors per assessment component.

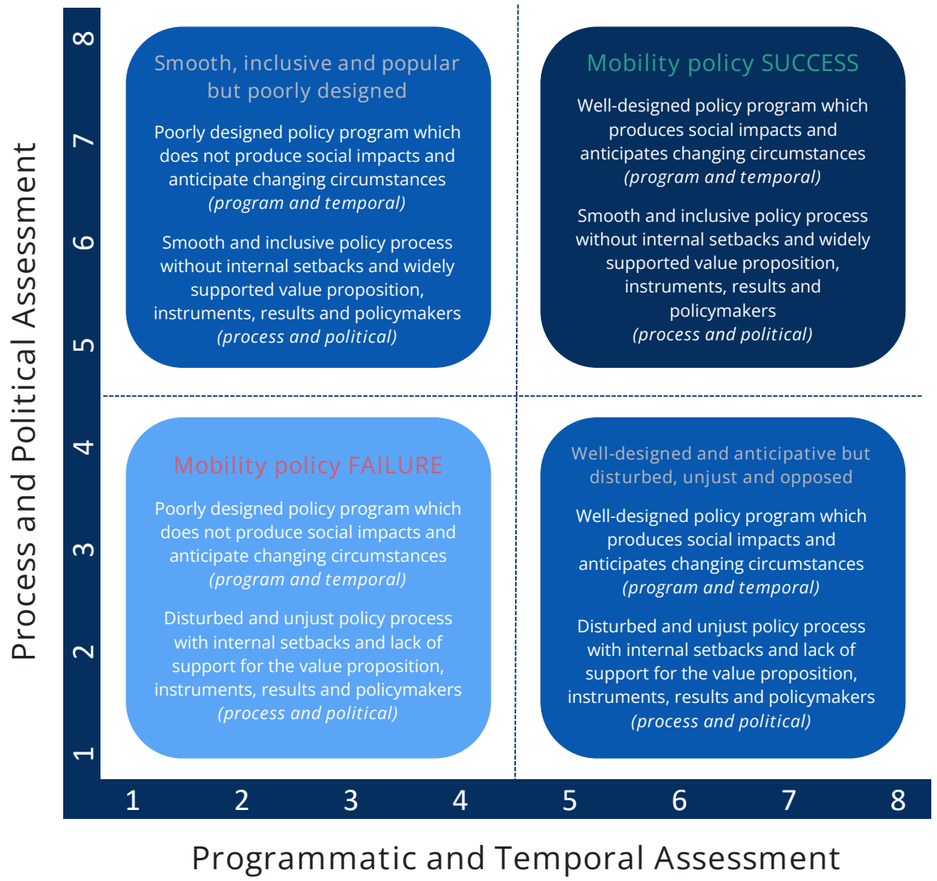


Figure 5. Mobility policy success assessment matrix (figure by the author).

Quadrant 'Mobility policy SUCCESS'
Policies in this quadrant can be labelled 'successful' and have the following characteristics (adapted from Compton et al., 2019):

- Well-designed policy program which produces social impacts and anticipates changing circumstances *(program and temporal)*
- Smooth and inclusive policy process without internal setbacks and widely supported value proposition, instruments, results and policymakers *(process and political)*

In this quadrant, policies would have received an overall score higher than 4.5 (> 4.5) for the programmatic and temporal assessment success factors and the factors belonging to process and political assessment.

Quadrant 'Mobility policy FAILURE'
Policies in this quadrant can be labelled 'failed' and have the following characteristics (adapted from Compton et al., 2019):

- Poorly designed policy program which does not produce social impacts and anticipate changing circumstances *(program and temporal)*
- Disturbed and unjust policy process with internal setbacks and lack of support for the value proposition, instruments, results and policymakers *(process and political)*

In this quadrant, policies would have received an overall score lower than 4.5 (< 4.5) for the programmatic and temporal assessment success factors and the factors belonging to process and political assessment.

Quadrant 'Smooth, inclusive and popular, but poorly designed'
Policies in this quadrant are neither a success, nor a failure as they have the following characteristics (adapted from Compton et al., 2019):

- Poorly designed policy program which does not produce social impacts and anticipate changing circumstances *(program and temporal)*
- Smooth and inclusive policy process without internal setbacks and widely supported value proposition, instruments, results and policymakers *(process and political)*

In this quadrant, policies would have received an overall score lower than 4.5 (< 4.5) for the programmatic and temporal assessment success factors, and higher than 4.5 (> 4.5) from all factors belonging to process and political assessment.

Quadrant 'Well-designed and anticipative, but disturbed, unjust and opposed'
Policies in this quadrant are also neither a success, nor a failure as they have the following characteristics (adapted from Compton et al., 2019):

- Well-designed policy program which produces social impacts and anticipates changing circumstances *(program and temporal)*
- Disturbed and unjust policy process with internal setbacks and lack of support for the value proposition, instruments, results and policymakers *(process and political)*

In this quadrant, policies would have received an overall score higher than 4.5 (> 4.5) for the programmatic and temporal assessment success factors, and lower than 4.5 (< 4.5) from all factors belonging to process and political assessment.

05

CASE STUDIES:
INNER CITY MOBILITY TRANSITIONS

STEEP FACILITATORS AND BARRIERS

CITY OF AMSTERDAM

CITY OF ROTTERDAM

CITY OF UTRECHT

© Adlan · 30 January 2022 · On the tracks

Chapter 5 comprises the case study research on the three case study cities Amsterdam, Rotterdam and Utrecht. It begins with a general and city-based external STEEP analysis of the Social, Technological, Economic, Environmental, and Political/Planning facilitators and barriers influencing the mobility transition of cities, corresponding to the *sociotechnical landscape* part of the conceptual framework (see Chapter 2.3). The chapter is further structured into sub-chapters, each corresponding to the case study research of each city, beginning with Amsterdam, followed by the case of Rotterdam and finishing with Utrecht. Each sub-chapter contains a policy review of the city's most recent mobility policy published in the period 2020-2021. The analysis will focus on aspects related to the inner cities.

The analysis continues with the further application of the conceptual framework by first reviewing the inner city push and pull measures implemented as part of the mobility transition and policy and their effects *(regime material and technical elements)*, and then reviews the key stakeholders involved and the public participation processes which took place *(regime actors)*. The table on the next page summarises the methodological approach for this chapter and details through which step of the case study research each success factor listed in the previous chapter (see table 7, p.47) might be revealed if they are present and if enough evidence is available.

Case study research step	Geo scale of analysis	Methods, models, theory	Link to conceptual model	Potential reveal of success factors
1) Analysis of STEEP facilitators and barriers	Supranational National City Inner city	Desk research and interviews *STEEP analysis*	*Sociotechnical landscape*	· Presence of a stable political landscape in the city · Presence of sufficient and dedicated local funding anticipating the changing needs for sustainable mobility in cities
2) Policy review	City-wide policy with a focus on the inner city	Desk research and interviews *Policy content analysis using the ABCD-procedure of the FSSD* *(Broman & Robèrt, 2017)*	*Sociotechnical regime: formal rules*	· Mobility policy program is delivered in consideration with other related policy areas · Policy program features mutually supportive goals working towards the achievement of the overarching policy goal · Framing of general policy goals to anticipate changing circumstances on the lower geographical scales · Integration of several policy instruments of different nature and scales · Policy documents have a clear and straightforward direction which is understood by both civilians and public administration throughout the whole policy cycle
3) Overview of push and pull inner city measures, their effects and monitoring practices	Inner city	Desk research and interviews *Application of theory on push and pull transport demand management* *(Broaddus et al., 2009)*	*Sociotechnical regime: material and technical elements*	· Integration of several policy instruments of different nature and scales · Presence of data for monitoring impact and sufficient assessment mechanisms · Policy produces positive social impacts (quantitative) in the long-term
4) Overview of stakeholders and public participation processes	City Inner city	Desk research and interviews *Application of Spectrum of Public Participation model* *(IAP2, 2018)*	*Sociotechnical regime: regime actors*	· Policy documents have a clear and straightforward direction which is understood by both civilians and public administration throughout the whole policy cycle · Presence of enough capacity (personnel) and knowledge throughout the policy cycle · Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments · Society and public administration trust and support the policy direction, and those who have put it forward · Political survival of the governing body · Stakeholders affected by the policy actively collaborated with policymakers throughout the different phases of the policy cycle

Table 8. Overview of the case study research steps.

5.1 STEEP FACILITATORS AND BARRIERS

A comprehensive review has been done of the sociotechnical landscape which exerts pressure on the regime. For this, the Social, Technological, Economic, Environmental, and Political/Planning facilitators and barriers influencing the sustainable mobility transition of cities have been reviewed. Information about the trends on the macro scales has been obtained mostly through desk research, while the local trends have been revealed predominantly through interviews with the experts and by consulting municipal documentation and cities' open data portals. This chapter only features two of those reflections as they directly provide input essential for revealing the presence of two success factors, while the other six facilitators and barriers do not directly offer input to understanding any of the identified success factors but provide a valuable overview of the landscape developments helping to grasp the wider context surrounding the regime developments. The following two trends are presented in this chapter:

1) economic barrier *'COVID-19 impacts on budget'* for the three case study cities, which provides input for revealing the presence of the success factor *Presence of sufficient and dedicated local funding anticipating the changing needs for sustainable mobility in cities*; and

2) political barrier *'Instability of political regimes'* which provides input for the success factor *Presence of a stable political landscape in the city*.

The full review of the STEEP landscape trends can be found in **Appendix 6**. The following trends are featured there, and for each trend, a reflection is presented on the local city scale and in terms of its presence in the three case study cities:

Social barriers (Appendix 6):

- Urbanisation and population growth (global barrier)
- Ageing population (European barrier)

Technological facilitators and barriers (Appendix 6):

- Digitalisation (global facilitator and barrier)
- Social media use rise (global facilitator)

Economic barriers:

- COVID-19 impacts on budget (national barrier) - *see next pages; for the national review, consult Appendix 6*

Environmental facilitators (Appendix 6):

- Climate change and sustainability (global facilitator)

Planning and political facilitators and barriers:

- Rise of interdisciplinary research and policymaking (global facilitator) - *Appendix 6*
- Instability of political regimes (European barrier) - *see next pages; for the European review, consult Appendix 6*

The icons below indicate the scale of the trend and whether it is a facilitator and/or barrier.

ECONOMIC BARRIERS

COVID-19 impacts on budget

Amsterdam has the biggest municipal budget of all three cities, followed by Rotterdam and then Utrecht (see **Appendix 7**). Only the city of Amsterdam reported a negative balance during the peak coronavirus years of 2019 and 2020. In their 2020 annual financial report, the city of Amsterdam reported that the negative effect of the coronavirus crisis in 2020 amounts to more than €300 million. As a compensation, they received additional income from the national government of €143.6 million via the corona support packages, and an emergency fund was used of €50 million to be able to take crisis measures or reduce the corona effects (City of Amsterdam, 2021). In various annual financial reports, the negative balances for these two years are explained mainly by the coronavirus impact and consequent measures the city took. As the corona measures were lifted in 2022, coronavirus has had a more limited impact on the financial results for the years after due to the cancellation of various corona-related measures (City of Amsterdam, 2023).

Rotterdam reported a negative balance in 2021 and 2023, and Utrecht – in 2023. The 2021 negative balance for Rotterdam is mostly explained by the measures taken to battle the negative effects of the corona pandemic (City of Rotterdam, 2022). The 2023 negative balance in Rotterdam is explained by higher healthcare and construction costs, lower municipal fund revenues, and others (City of Rotterdam, 2023). The negative balance in Utrecht has been reported because of a difference found between the budgeted estimate of the assets from the municipal fund and the actual (expected) income (City of Utrecht, 2023).

In relation to mobility, all three cities have a dedicated budget for mobility measures, and in their Annual Reports, they all report on the way the budget has been used, detailing the measures and indicators used to assess them. The paragraphs below provide an elaboration on the cities' mobility budgets.

• *Amsterdam:*

The mobility budget annual reports from 2019 to 2024 separate between 1) traffic, transport and parking, and 2) public transport. The tables below summarise the budgeted finances, expenditure and balance for these topics separately.

Amsterdam Traffic, transport and parking	2019	2020	2021	2022	2023	2024
Budgeted	€328.8	€289.8	€293.1	€336.8	€68.1	€56.6
Expenditure	€292.2	€323.5	€347.3	€353.6	€226.9	€238.4
Balance	€36.6*	€ - 33.6*	€ - 54.2*	€ - 16.8*	€ - 158.8*	€ - 181.7*

**Before reserves withdrawals and releases*

Table 9. Budget traffic, transport and parking Amsterdam 2019-2024 – budgeted, expenditure and balance (in million euros, x1.000 euros) (data from City of Amsterdam Annual Budget Reports 2019-2024).

Amsterdam Public transport	2019	2020	2021	2022	2023	2024
Budgeted	€124	€121.7	€139.2	€30.4	€25	€33.1
Expenditure	€277.2	€180	€193	€66.6	€70.8	€93.7
Balance	€ - 153.2*	€ - 58.3*	€ - 53.8*	€ - 36.2*	€ - 45.7*	€ - 60.6*

**Before reserves withdrawals and releases*

Table 10. Budget public transport Amsterdam 2019-2024 – budgeted, expenditure and balance (in million euros, x1.000 euros) (data from City of Amsterdam Annual Budget Reports 2019-2024).

As observed, the assets made available for these two themes have significantly decreased in the past two years for traffic, transport and parking and in the past three years - for public transport. This is in line with what the interviewees from Amsterdam reported concerning the current financial situation in the city, where unlimited funds for new projects are a thing of the past, and the focus is shifted to maintaining the infrastructure. They link these developments with the longer-term impact of the coronavirus pandemic, especially on public transport, and the resulting national budget cuts. Also, they mention the delay with certain projects due to the pandemic, such as the pilot on the Weesperstraat and the cancellation of planned measures.

Despite the lack of sufficient finances for the past 2-3 years, during the pandemic, the city reported that this provided an opportunity to accelerate the implementation of maintenance measures in places where maintenance works normally cause a lot of inconvenience, and to carry out major maintenance works on parking buildings in 2020. However, the municipality then reports receiving less revenue from parking tax due to the pandemic (City of Amsterdam, 2021). National budget cuts will continue from 2026, as reported by CBS (2023), due to plans to cut the municipal fund and change the way municipal fund sizes are distributed by instead of linking them to the government expenditure figures, linking them to the gross domestic product.

• *Rotterdam:*

From 2019 to 2021, all mobility budget matters in Rotterdam's annual reports are featured under the *'Traffic and Transport'* section. However, from 2022 onwards, the city features the theme mobility under the wider urban development theme together with other policy areas, such as area development and climate adaptation. The numbers for traffic and transport measures from 2022 to 2024 are missing from the wider overview, which only presents a general overview of the numbers for the whole theme of urban development. Therefore, comparing the financial situations between 2019-2021 and 2022-2024 is difficult. The tables below provide an overview of the budgeted finances, expenditure, and balance for these two periods separately.

Rotterdam Traffic and transport	2019	2020	2021
Budgeted	€165.4	€153.7	€164.7
Expenditure	€133.5	€132.7	€146.3
Balance	€43.1*	€38.6*	€47.7*

**After reserves withdrawals and releases*

Table 11. Budget traffic and transport Rotterdam 2019-2021 – budgeted, expenditure and balance (in million euros, x1.000 euros) (data from City of Rotterdam Annual Budget Reports 2019-2021).

Rotterdam Urban development	2022	2023	2024
Budgeted	€817.5	€351.7	€343.3
Expenditure	€389.1	€363.5	€339.5
Balance	€473.9*	€44.5*	€42.9*

**After reserves withdrawals and releases*

Table 12. Budget urban development Rotterdam 2022-2024 – budgeted, expenditure and balance (in million euros, x1.000 euros) (data from City of Rotterdam Annual Budget Reports 2022-2024).

It can be observed that there are not many deviations in the mobility budget of the city between 2019 and 2021. The effects of the coronavirus pandemic on mobility have been mentioned in the annual reports, especially in relation to the public transport operator in Rotterdam – RET. The aftermath of COVID-19 for RET has been a lower turnover due to the significantly lower number of passengers compared with pre-pandemic times, coupled with labour shortages (City of Rotterdam, 2022). Furthermore, there is mention of the postponement of some small-scale mobility projects in 2020 due to the COVID-19 financial impact on the parties involved with the measures (City of Rotterdam, 2020). Positive impacts were also mentioned in the 2020 and 2021 reports, such as the development of a special mobility plan targeting more priority to cyclists and pedestrians in 2020 (City of Rotterdam, 2020), the reduction in car use, traffic and particulate matter, and the increased cycling rates (City of Rotterdam, 2021). Budget issues were mentioned only by one of the Rotterdam interviewees in relation to the redevelopment of Schouwburgplein. However, no link to COVID-19 was specified:

> *"We had a plan for the Schouwburgplein to make it more Autoluw, but the plan was too expensive. A couple of weeks ago, the alderman said we will put that plan on hold. Hopefully, in a couple of years we have enough money to make it, but at the moment, there is not enough money in the city to make the plan."*
>
> - Head of Area Development Inner City at City of Rotterdam

• *Utrecht:*

Utrecht classifies the mobility-related measures under the *'accessibility'* theme in their annual reporting. The table below provides an overview of the budgeted finances, expenditure, and balance for the period 2019-2024.

Utrecht Accessibility	2019	2020	2021	2022	2023	2024
Budgeted	€60.9	€47.8	€52	€60	€75.6	77.2
Expenditure	€59.3	€55.8	€54.7	€63.4	€63.8	79.3
Balance	€1.3*	€ - 8*	€ - 2.6*	€ - 3.3*	€11.8*	€ - 2*

**Before reserves withdrawals and releases*

Table 13. Budget accessibility Utrecht 2019-2024 – budgeted, expenditure and balance (in million euros, x1.000 euros) (data from City of Utrecht Annual Budget Reports 2019-2024).

The lowest mobility budget was reported for the year 2020. Since then, the budget has been growing each year. The impact of the coronavirus has been mentioned in the reports for 2020, 2021 and 2022. For instance, in 2020, a coronavirus crisis team was set up and corona measures were imposed in public spaces, which cost 1.7 million euros. Coronavirus has been further reported to have caused delays in the delivery of certain projects, and these longer lead times of projects have translated to higher costs (City of Utrecht, 2020; City of Utrecht, 2021). Limited traffic research was also performed leading to the delayed delivery of traffic safety analyses due to COVID-19. A loss of 7 million euros car parking income was reported in 2020 as a result of the corona pandemic, which was compensated by the national government with 5.5 million (City of Utrecht, 2020). In 2022, the loss from car parking was estimated at 1.3 million euros as a result of corona (City of Utrecht, 2022).

No budget issues linked to the corona pandemic were mentioned by the two Utrecht interviewees. However, The Senior Designer Public Space Centre Utrecht has clarified that there are certain projects in the city of Utrecht which could not be made possible without the involvement of the national government:

> *"The money for the big bicycle parks around the station come from The Hague, from the ministries of traffic. It is money which comes with a train station really. For the inner city, it needs to come from the local government, and that is a different story. [...] That is one of the things [underground tram line in the inner city] we are studying - maybe that can be a solution, but also money for it should be coming from The Hague, it is not something a city can solve."*
>
> - Senior Designer Public Space Centre Utrecht at City of Utrecht

PLANNING & POLITICAL FACILITATORS AND BARRIERS

Instability of political regimes

The last local elections in the Netherlands took place in 2022. The mandate before that was active since 2018. The tables below show an overview of the city council seats for Amsterdam, Rotterdam and Utrecht for the years 2014, 2018 and 2022.

Amsterdam	2014	2018	2022
Labour Party	10	5	**9**
GroenLinks	6	**10**	8
Democrats 66	**14**	8	7
VVD	6	6	5
Socialist Party	6	3	2
Other parties	3	13	14
Total seats	**45**	**45**	**45**
Position of leading party	Centre	Centre-left to left	Centre-left

Table 14. Seats in the municipal councils of Amsterdam per political party (mandates 2014-2018, 2018-2022, and 2022-2026).

Rotterdam	2014	2018	2022
Livable Rotterdam	**13**	**11**	**10**
VVD	3	5	6
GroenLinks	2	5	5
Democrats 66	5	5	5
Labour Party	8	5	4
Other parties	14	14	15
Total seats	**45**	**45**	**45**
Position of leading party	Right	Right	Right

Table 15. Seats in the municipal councils of Rotterdam per political party (mandates 2014-2018, 2018-2022, and 2022-2026).

Utrecht	2014	2018	2022
GroenLinks	9	**12**	**9**
Democrats 66	**13**	10	8
VVD	5	6	5
Labour Party	5	3	4
Socialist Party	4	2	1
Other parties	9	12	18
Total seats	**45**	**45**	**45**
Position of leading party	Centre	Centre-left to left	Centre-left to left

Table 16. Seats in the municipal councils of Utrecht per political party (mandates 2014-2018, 2018-2022, and 2022-2026).

The tables show that all three cities have a generally stable voting electorate in terms of political ideologies and positions. The local right-wing party Livable Rotterdam, for example, has remained the top-voted party in the city throughout all three periods. Similarly, the centre-left to left green party GroenLinks in Utrecht collected the most votes in 2018 and 2022. In Amsterdam, the voters' *'favourite'* party changes each period. In 2022, the centre-left-wing Labour Party gathered the most votes, closely followed by GroenLinks. However, the municipal executive, which comprises the mayor and the portfolio holders (i.e., the aldermen), shows bigger variations for each city.

In Amsterdam, the municipal executive from 2022 features 3 members from GroenLinks, 3 from D66 and 3 from the Labour Party. The alderwoman responsible for the policy area mobility is newly appointed. She has appointed the delivery of a new mobility agenda. The strategic advisor from the engineering bureau states that changes in the administration have been challenging the stability of the city's direction – "*We have a coalition in the municipality of Amsterdam. At the start of a coalition, their agreements are pretty strong and solid. After a few years, they will weaken and people will have different ideas, try to manifest themselves for the new elections.*"

In Rotterdam, despite winning a high percentage of the votes, Livable Rotterdam did not have a seat in the municipal executive during 2018-2022. In the 2022 coalition, they have 3 aldermen joining the executive cabinet, together with 2 from VVD, 2 from D66 and 2 from DENK. With the changes in administration, also changes in the direction of the city's mobility plans are taking place. On their official website, the party's viewpoints on mobility are highly focused on road safety and transport-related crime reduction (Leefbaar Rotterdam, n.d.). They further explain the support for revoking certain measures, such as the increase in parking rates and the traffic experiments at the Maastunnel and Erasmusbrug where a lane for cars was closed. They refer to that action as *'stopping the bullying of motor vehicle users'*. This was confirmed by one of the consulted experts from the city:

> *"In the last period before the elections, we had a quite left city council and now it is more right-wing. We have now more people in the city council saying, 'do not bully the car out of the inner city'. That is not what we want to do, but we want to reduce the space that the car needs. That is still an important shift and there are still enough people in the inner city who want to support that shift. Last week, our alderman and mayor said yes to the big plan for the Hofplein which will make that shift easier to develop."*
>
> - Head of Area Development Inner City at City of Rotterdam

With the arrival of a new portfolio holder for mobility, Rotterdam is also developing its new mobility agenda, and as clarified by the head of area development, "*... the city council said yesterday, RMA [...] that is old policy. They do not want to use the word RMA anymore. Still, a lot of things that are in the RMA are liveable and are accepted also by them. They do want to have some more areas Autoluw in the inner city. They do want to have 30km/h instead of 50km/h. [...] In the end, the shift is not that big, but still, we are not allowed to use the word RMA anymore.*"

Utrecht appears to have the most stable mobility governance of all three cities, which is primarily concluded from the fact that for the fourth time in a row, the mobility portfolio holder is from the green left-wing party GroenLinks, and the last three mandates, it is the same alderwoman - Lot van Hooijdonk. Thus, unlike Rotterdam and Amsterdam, Utrecht is not busy with the preparation of a new mobility policy and continues the work on the on-going programmes:

> *"Mobility was always in the hands of the green party which makes it that you have a clear policy, and then it is easy to do our jobs. We are able to continue with the chosen policy in the longer term."*
>
> - Senior Policy Advisor and Traffic Engineer / Urban Planner at City of Utrecht

CONCLUSIONS

The review of the STEEP factors comprised a total of 8 factors – 4 barriers, 3 facilitators and 1 factor, which can be both (see figure 6). These landscape developments put pressure on the regime. Concerning the success factors, the degree of political stability of the local governments of the three cities has been analysed. Moreover, the local funding situation regarding mobility has been revealed. In chapter 6, the three cities will be ranked for these success factors based on these reviews. The next sub-chapters (5.2 to 5.4) will dive into the concrete regime developments of the three case study cities.

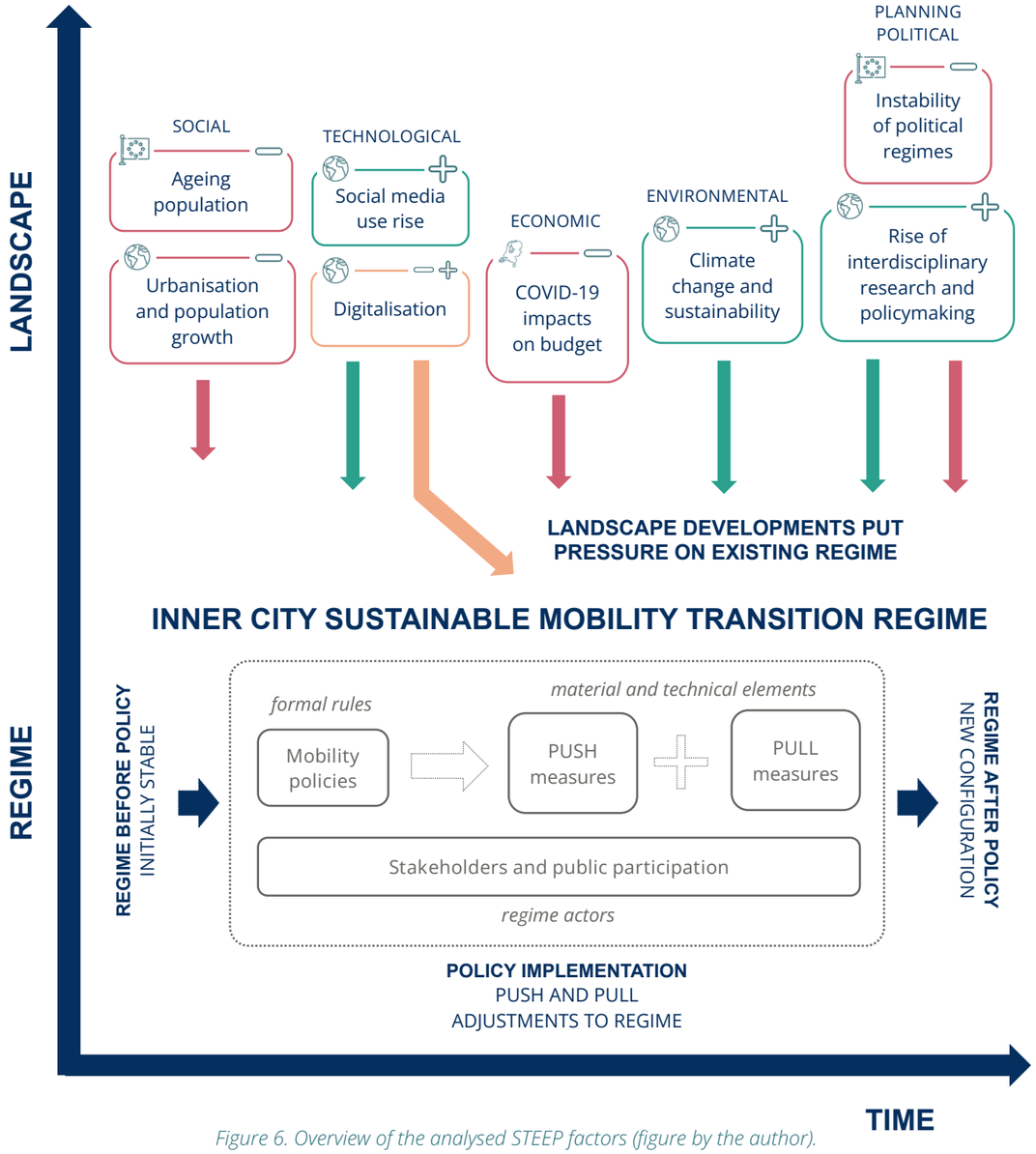


Figure 6. Overview of the analysed STEEP factors (figure by the author).

[This page intentionally left blank]

5.2 CITY OF AMSTERDAM

© *Jace & Afsoon · 13 July 2016*

Population 2024 · 931,748 (city) · 91,733 (inner city)
Typology of inner city · Historic city centre
Modal split*

Bicycle	Walk	Car	PT	Other
34%	**30%**	**21%**	**11%**	**3%**

**ODiN data for 2022: Means of transport of Amsterdam residents on weekdays (City of Amsterdam, 2024)*

- Vision 2020-2040
- Mobility vision
- City area focus

AGENDA AMSTERDAM AUTOLUW *(REGIME FORMAL RULES)*

The agenda Amsterdam Autoluw (in English: car-free) is Amsterdam's *'Agenda for a liveable and accessible city'* adopted in early 2020. It has been the city's leading mobility policy document since then, presenting measures concerning mobility and public space for the whole city. The document's title page features a sub-title *'Amsterdam makes space'*. It is structured in 7 chapters, a preface with a statement from the then-active Alderwoman for Traffic and Transport (Sharon Dijksma), and an appendix with an overview of the measures.

The in-depth application of the ABCD-procedure of the FSSD for this policy document can be found in **Appendix 8**. The paragraphs below and Table 17 summarise the most significant findings.

The agenda's main policy goal is *"more space for a liveable and accessible city"* and is complemented by five mutually supportive sub-goals (STEP A). Often, the document does not link back to these goals. The inner city's modal split is reportedly dominated by the bike (60%), followed by 24% of residents travelling by public transport and then by car (16%) (City of Amsterdam, 2020; STEP B).

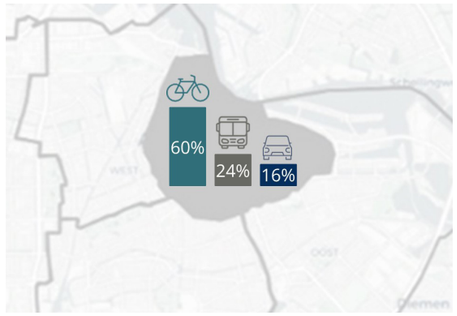


Figure 7. Amsterdam - inner city modal split for residents on weekdays (2017) (data by City of Amsterdam, 2020; figure by the author).

The document features 27 targeted and specific measures, and it showcases the achievements and the plans for the city for three periods – Now (until 2022), Soon (until 2025) and Later (until 2040) (City of Amsterdam, 2020). The policy document presents a wide variety of measures in terms of scale and nature (STEP C). For example, some measures target the whole city area, such as reducing the number of parking permits issued, or a particular street/route, such as car-freeing the cycle route Haarlemmer Houttuinen. Next, some measures have a specified target group (e.g., children, residents, businesses). They vary in function – some are economic (e.g., financial incentives), and others are regulatory (e.g., 30km/h speed limit). Finally, both push and pull measures can be distinguished, e.g., subsidies for small-scale neighbourhood initiatives (pull) and reductions in the speed limit (push).

The strategic plan (STEP D) features a city-wide consultation process that took place in 2019. The input from it was used to develop the Autoluw Agenda. One possible financial concern is that reliance on external sources of funding is expected for some of the long-term measures.

Key messages from the FSSD analysis - Amsterdam

	Agenda Autoluw key aspects	*Reflection on success factors*
Vision	*Main policy goal:* More space for a liveable and accessible city *Sub-goals:* • More space for functions associated with passing the time • More space for amenities • More space for alternatives to the car • Cleaner air, less noise nuisance and greater road safety • Inclusive city	> Mutually supportive policy goals working towards the general goal. > Slightly chaotic document structure with the list of measures not structured in relation to the five sub-goals, decreasing the comprehensibility. > Often, the link back to the five sub-goals is not elaborated further in the document, following their introduction. > General phrasing of main and sub-goals not featuring specific numeric goals and leaving freedom for flexibility and adjustments to anticipate changing circumstances per measure.
Current baseline	• Growing population and visitors • Inner city modal split dominated by the bike (2017) • High occupancy of parking spots in the centre • High pressure on the public space	> Various facts and figures collected and summarised in relation to mobility, logistics, public space, demographics, tourism, citizen opinions.
Building blocks	• 27 measures with different timelines (by 2022, by 2025, by 2040) • Inner city measures targeting parking-freeing and reducing car access	> A wide range of measures varying in targeted scale (e.g., city and street scale), target groups (e.g., children, residents and businesses), function (e.g., regulatory and economic), and underlying goal (push and pull measures).
Strategic plan	• Key stakeholders are residents and businesses of Amsterdam, the national government and other governmental organisations, and the City of Amsterdam • City-wide consultation process (February – June 2019) • Autoluw programme potential cost: €500-€700 million • 12 other policies considered during policy cycle	> Involvement of key stakeholders in the policy formulation. > Various other policy areas considered for the implementation of the agenda, e.g., air quality, climate neutrality, tourism. > Reliance on funds from other authorities for the financing of some of the long-term measures.

Table 17. Key messages from the FSSD analysis - Amsterdam.

PUSH AND PULL MEASURES IN THE INNER CITY *(REGIME ELEMENTS)*

For the inventory of the inner city measures, a comprehensive review has been done of various sources, including all editions of the Magazine Autoluw, which tracks the progress with the agenda delivery, monitoring reports by the city and projects mentioned on the municipality's official website (www.amsterdam.nl/projecten). Findings from the interviews with the two city representatives from Amsterdam and the expert from the University of Amsterdam have further contributed to the review. The inventory consists of measures related to parking, traffic management and regulation, and public space redesign. The figure below offers an overview of the measures per measure effect type – push or pull. To remain concise, the review features only measures enforced and implemented by the city authority, and thus, measures that concern the public transport authorities are not present in the overview. Three measures from the list apply to the whole city area and are not limited to the centre only, namely, the removal of on-street parking spaces, the reduction in the number of parking permits issued and the introduction of 30 km/h speed limits.

Public space redesign

▲ PULL EFFECT MEASURES

2018 - in progress • Redesign of streets for the development of a 7km cycle route surrounding the whole city centre

2020 - in progress • Renovations of bridges and street redesigns creating more space for pedestrians, cyclists, public transport and greenery on bridges and streets from Raadhuisstraat to Mercatorplein – Orange carpet

2021 - 2024 • Redesign of Nieuwezijds Voorburgwal with more space for cyclists, pedestrians, trams and green

2023 - 2024 • Design improvements on the IJ – Geldersekade cycle route

2024 - in progress:
- Redesign of Prins Hendrikkade with more space for cyclists, pedestrians and green
- Redesign of Valkenburgerstraat

Parking

▼ PUSH EFFECT MEASURES

2019 - in progress • On-street parking spaces removal

2023 - in progress • Reduction in the number of parking permits issued

2023 - 2024 • Opening of the underground parking garages Vijzelgracht (2023) and Singelgrachtgarage – Marnix (2024)

Traffic management and regulation

▼ PUSH EFFECT MEASURES

2016 - in progress • Restricted car access to the Oudezijde area during certain days/times

2020 - 2024 • Pilot closure of Weesperstraat to through traffic (12 June - 23 July 2023)

2021 introduced • Stricter rules, camera surveillance and targeted control for heavy vehicles

2022 - in progress • Introduction of 30 km/h speed limits on almost all streets

2024 • Instalment of permanent blockades at Rokin, Damrak and Prins Hendrikkade

Figure 8. Push and pull measures in the inner city of Amsterdam.

Some of these measures are fully completed, and others are still in progress. For instance, the pilot closure of Weesperstraat to through traffic was completed between 12 June and 23 July 2023. It was a temporary measure, labelled a pilot, which aimed to investigate the effects of the closure on traffic, safety and the quality of life in the area (City of Amsterdam, n.d.). In contrast, the removal of on-street parking spaces is a measure which began in 2019 and will continue until 2025 (City of Amsterdam, 2023). Among all 14 measures, only one had a temporary character (the pilot Weesperstraat), and two are temporary measures made permanent – the instalment of blockades at Rokin, Damrak and Prins Hendrikkade, and the restricted car access in the Oudezijde area. Some of the measures part of the redevelopment project for the 7 km cycle route have also been trial measures turned permanent. All the parking and traffic measures belong to the list of push measures, as they target to discourage the use of cars in the inner city by making car use inconvenient, for example, by limiting car access in certain areas. All the public space redesign measures belong to the pull category, as they help to increase the modal share of NMT and PT by, for example, expanding and improving the infrastructure available for such modes.

Three of the measures from the list have been mentioned throughout the interviews with the three Amsterdam interviewees, in particular, the 30 km/h speed limits, the pilot Weesperstraat and the Oudezijde area interventions called *'intelligente toegang'* where car access is restricted on certain days and *"only citizens who live in that area will have access, and the logistics which need to be there"*, as stated by the strategic advisor from Amsterdam. The expert further clarified that this measure has positive effects in terms of the nuisance in that area – preventing tourists from entering, unwanted taxi traffic, through traffic – and that this is the first small step towards more significant steps, such as readjusting the street space by removing parking spots which are made possible because of the reduced traffic. The 30 km/h speed limit is also mentioned as a measure with a potential long-term impact on the whole city level:

> *"Instead of it [the 30 km/h measure], you spend maybe even 50 million on one street, and make it really nice, then only the people using it or living on it are affected by it. You have to do all the other streets as well before it is finished. The 30 km/h is an example of something which affects the whole city, and we are looking for these types of measures. Not solving local problems one by one but solving city problems for the city."*
>
> - Policy Advisor Traffic and Public Space at City of Amsterdam

Figure 9 shows how the speed limit situation changes on the regional access roads in the inner city. Some of the streets remaining with a maximum allowed speed of 50 km/h are Weesperstraat, the IJ-tunnel and De Ruijterkade.

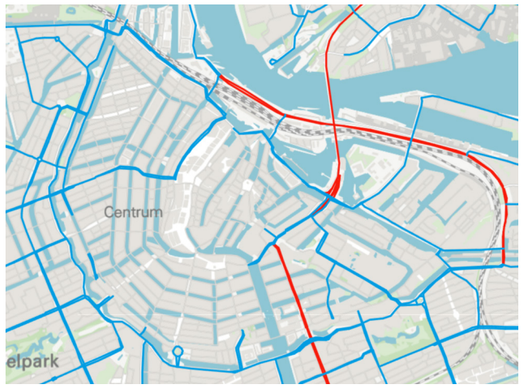


Figure 9. Map of the speed limit changes in Amsterdam's inner city (City of Amsterdam, n.d.).

from 50 to 30 km/h *remains 50 km/h*

MONITORING AND IMPACT OF THE INNER CITY MEASURES *(REGIME ELEMENTS)*

Four progress reports for the Autoluw Agenda have been published so far – one each year from 2021 to 2024. It can be observed that the city keeps to its promise made in the Autoluw policy document to prepare annual monitoring reports. The same indicators are used in all those reports and feature, for example, population and visitor numbers, modal split per district, travel motives, car ownership, amount of parking spaces removed, and residents' satisfaction rates with the public space.

The numbers for the reporting year are shown compared to the year before. There are two more reports complementing the general monitoring report, which a) track the modal split and the traffic volume monthly and b) report on the freed-up parking spaces per district and the change in public space use following that. The reporting is done in a very structured manner on the same indicators. This allows for precise comparisons and tracking of the progress. Most of the data used to develop these reports comes from the ODiN database by CBS, which provides information on the daily mobility of the Dutch population (CBS, 2023).

For all districts, the following data is shown each year:

- Modal split changes for residents and visitors;
- Car ownership (per inhabitant and household);
- Amount of parking spaces removed; and
- Ways freed-up space has been reprogrammed.

	Bicycle	Walk	Car	PT	Other
2019	**44%**	**26%**	**8%**	**18%**	**3%**
2020	**-20%**	**+34%**	**+21%**	**-72%**	**-6%**
2021	**+8%**	**+8%**	**-14%**	**+24%**	**+29%**

Figure 10. Modal split changes for the inner city of Amsterdam (2019-2021) (ODiN data for 2019, 2020 and 2021).

The figure above shows the modal split development of residents and visitors for 2019-2021 in the inner city. The modal split of the inner city is dominated by cycling and walking, followed by PT. Due to the coronavirus pandemic, fewer trips were made in 2020 (City of Amsterdam, 2022). The most significant decrease was in the use of public transport (-72%), which in 2021, did not yet come back to its pre-pandemic use rates. Instead, in 2021, the highest increase was in the use of scooters and mopeds (+29%). Compared with the other city districts, the inner city generally has the lowest car modal share. This is also true for car ownership which remained rather stable for 2019-2021, with an average of 0.3 cars per household for the inner city (City of Amsterdam, 2023).

The figure below provides an overview of the number of freed-up parking spaces in the inner city for 2020-2023. 1,400 parking spots have been eliminated, representing 20% of all eliminated parking spaces in Amsterdam from 2020 onwards. The freed-up space has been mostly used for measures as part of the Bridges and Quay Walls Programme, spaces for relax and play, walking spaces, cycling infrastructure and parking, green, public transport stops, road safety measures, waste containers, and shared mobility infrastructure.

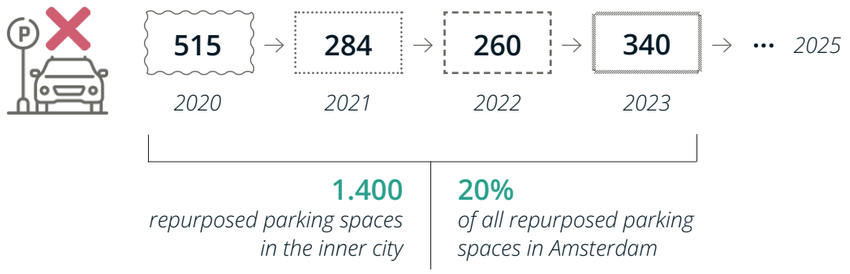


Figure 11. Number of removed parking spaces in the inner city of Amsterdam (2020-2023) (data from Monitor Autoluw ruimteregie reports 2021-2024).

The presented data shows that spatial improvements have been made due to the removal of on-street parking spots, which could lead to an increase in the quality of life in the inner city. However, the monitoring reports fail to capture environmental and social indicators, such as air quality, noise pollution, quality of life, etc. The satisfaction with the public space indicator is only shown for the city level and, in fact, has decreased from a rating of 7.4 in 2019 to 7.3 in 2020. Due to the lack of sufficient monitoring and data on these environmental and social indicators, no observations can be made on whether the programme has produced positive social impacts. The modal split impact also remains inconclusive as the programme was launched during the coronavirus pandemic period, which impacted mobility due to the imposed restrictions. The monitoring report for 2021 even states: "*The corona pandemic has (temporarily) changed mobility in the city, so it cannot be determined whether the differences mentioned in this monitor can be explained by the car-free measures*." (City of Amsterdam, 2022, p.2). The same is stated in the 2022 report.

STAKEHOLDERS AND PUBLIC PARTICIPATION *(REGIME ACTORS)*

The stakeholders involved, and the degree of participation during the different policy cycle phases varies significantly per project/measure in the inner city. The information for this section has been collected from the review of various progress reports and information available on the city's official website, and from the interviewed experts. The city of Amsterdam is the key stakeholder responsible for all these implementations. Internally, project teams are responsible for implementing and monitoring the different measures. However, the interviewee from the University of Amsterdam criticises the way the organisation is managed internally, as, based on her experience and conversations with people working at the municipality, she gets "*… the impression sometimes […] that they also do not even know within their own organisation who is working on what and what the connections are*." The interviewee also criticises the city for the lack of collaboration and consultation with the biggest local university – the University of Amsterdam which has a Centre for Urban Studies.

The sections below elaborate on the key stakeholders and the public participation degrees per policy cycle and apply the Spectrum of Public Participation model (IAP2, 2018) to each phase.

Policy cycle phases agenda-setting and policy formulation

As already mentioned in the policy document review, a city-wide participation process provided input for the Autoluw Agenda policy document development. In the city centre area, two district meetings took place in March and April 2019, where district authorities invited their residents and local entrepreneurs to have a discussion with city officials regarding their wishes, ideas and suggestions about the Autoluw developments in the inner city (City of Amsterdam, 2019). Next to that, a wide array of other stakeholders have been consulted through, for example, street interviews and dedicated meetings with business owners, governmental organisations, and policymakers from the Netherlands and abroad, among others. These consultation processes took place between February and June 2019, before the Autoluw Agenda was released and adopted by the city. All these processes can be attributed to the CONSULT part of the public participation model spectrum (IAP2, 2018), as stakeholders contribute their viewpoints, opinions, or preferences, which are then used by the city authorities to inform their decisions on the contents and directions of Agenda Autoluw. The strategic advisor from the city confirmed the way the process took place:

> *"It is [the agenda development process] certainly not top-down, because before the writing process of the Agenda Autoluw, we started with a really big consultation inside the city. We call that the talk with the town. We went to all the different parts of Amsterdam, invited all the civilians, they could bring in all the ideas they had, and with those ideas in mind, we started to write the agenda and the exact measurements we wanted to take. They are the result of a conversation we had with all the civilians in the town."*
>
> - Strategic Advisor Engineering Bureau at City of Amsterdam

He further clarified that not all wishes and ideas from the public were considered for the policy development due to citizens' lack of knowledge regarding the bureaucracy and rules of the government, the cost of the proposed measures being too high, and citizens` lack of consideration of potential effects on surrounding areas.

Policy cycle phases decision-making and implementation

Following the adoption and release of the Agenda Autoluw, the implementation of the different measures began. The strategic advisor from Amsterdam has revealed that when the document was released, it gathered significant media attention, and the general idea of the policy was well-received by residents. However, the implementation of the exact measures, as explained by the interviewee, "*sometimes created a lot of tension and anger with the citizens*". The expert clarified that the project teams themselves organise the participation processes for the measures, not the PUMA working team responsible for the general coordination of Agenda Autoluw. There have been mixed responses to the various Autoluw measures with both supporters and opponents (Koops, 2019; Duursma, 2023). For instance, in 2023, residents from the neighbourhood Kattenburg organised a protest on the Kattenburgerstraat against the Weesperstraat cut pilot measure due to the accumulated traffic in their neighbourhood as a result of the cut (AT5, 2023; Velzel, 2023). In contrast, in 2019, various resident organisations from Amsterdam united under the *'Amsterdammers voor Autoluw NU!'* coalition supporting the agenda and even demanding the faster implementation of the measures (Autoluw Nu, n.d.).

The strategic advisor from Amsterdam also confirmed this:

> *"A big part of the citizens say: 'Come on, implement those measurements, we want more. We want those cars removed from our streets. We want to take our streets back.' And an enormous part of the citizens, they need their car. They want to use their car every day. They do not want the government to take it away from them. There are two opposite opinions, which you encounter all the time."*
>
> - Strategic Advisor Engineering Bureau at City of Amsterdam

For the policy implementation phase, information has been obtained about 7 of the measures in the list of pull and push measures where public participation processes took place. These include the push measures construction of underground parking garages, pilot closure Weesperstraat, restricted car access Oudezijde area, 30 km/h speed limits, and the pull measures - orange carpet, redesign of Prins Hendrikkade and the 7 km cycle route. **Appendix 9** offers a summary table of all policy cycle participation processes, the stakeholders involved in each, the means and goals of involvement and the degree of participation. Some of the more prominent examples are elaborated below.

For the Weesperstraat pilot, emergency services, hospitals, GGD (municipal health services), public transport operators and Rijkswaterstaat have been involved in preparing and implementing the pilot. Based on the public participation model spectrum, these parties have been both informed in the process but also contributed as active collaborators. Other stakeholders, such as residents, businesses and logistics companies have merely been informed via various means (e.g., signage, social media, information evenings and newsletters) (City of Amsterdam, 2023). Following the construction of the Vijzelgracht underground parking facility, on-street parking is being removed in the surrounding neighbourhoods which allows for new functions to be developed in the freed-up space. In the adjacent neighbourhoods Weteringbuurt and Noorderbuurt, online design sessions were held with residents and businesses in 2020 to redesign street spaces. Following these sessions, some of the suggestions and wishes from residents and businesses were integrated into the final designs (City of Amsterdam, n.d.). For the introduction of the 30 km/h speed limits, agreements have been made regarding the scope of the measure with emergency and health services, public transport operators and the police. A city-wide marketing campaign has been launched, the main target group being motor vehicle drivers.

Policy cycle phase evaluation

As many of these measures are still being implemented, the evaluation phase has not yet been reached for those, and thus, monitoring reports are not yet delivered. The pilot Weesperstraat ended in July 2023, with its evaluation phase completed a few months later. To assess people's experiences with the pilot and derive lessons for future measures, a survey was conducted with 4,377 respondents from all over the Netherlands. The survey results showed that 74% of respondents were dissatisfied with the pilot measure. Moreover, 49% of respondents indicated that they are positive about the intentions to make Amsterdam car-free, 41% were negative, and 10% remained neutral (van der Horst, 2024). A total of 9 focus groups were also organised with various representatives, including residents, businesses, healthcare providers, logistics companies, taxi companies, social and cultural institutions, and hotels (City of Amsterdam, 2023). The pilot with the restricted car access in the Oudezijde area took place in 2018, and the evaluation phase began at the end of 2018. To assess residents' and businesses' perceptions of the pilot and its effects, a survey was conducted with 1,296 respondents. The results showed that 64% of the respondents would like to see the municipality continue these measures after the pilot (City of Amsterdam, 2019). The processes described above belong to the CONSULT degree of participation.

5.3 CITY OF ROTTERDAM

© *Redactie Wattedoenin · 4 April 2024*

Population 2024 · 670,610 (city) · 42,504 (inner city)
Typology of inner city · Old/modern city centre
Modal split*

Bicycle	Walk	Car	PT	Other
23%	**28%**	**34%**	**12%**	**3%**

**ODiN data for 2022: Means of transport in Rotterdam per mode (City of Rotterdam, 2023)*

- Vision 2020-2040
- Mobility vision
- City area focus

ROTTERDAMSE MOBILITEITSAANPAK *(REGIME FORMAL RULES)*

The agenda Rotterdamse MobiliteitsAanpak (RMA) (in English: Rotterdam's Mobility Approach), adopted in 2020, is Rotterdam's policy striving for an accessible city with four guiding principles to achieve that for the whole city until 2040 (City of Rotterdam, 2020). The document begins with a foreword from the then-active Alderwoman for Mobility, Youth and Language (Judith Bokhove). The in-depth application of the ABCD-procedure of the FSSD for this document can be found in **Appendix 8**. The paragraphs below and Table 18 summarise the most significant findings.

The document has a clear and straightforward structure, starting from the general challenges and then delving into the mobility challenges, all resulting in the definition of the mobility transition approach. Unlike Autoluw, the RMA does not feature a detailed explanation of each measure which will be taken. Instead, in the implementation strategy, a general outline is presented featuring the projects' names for the different periods per guiding principle. The document makes use of spatial vision maps to illustrate the planned measures. As mentioned by one of the interviewed experts from Rotterdam, the RMA is *"more of a tactic plan … for everyone in the whole city … it is not a blueprint, not that you have to work in that way"*, and its main goal is to guide the people involved in the definition and implementation of measures on the way they should approach the transition (STEP A). The other consulted expert from Rotterdam further clarified that the municipality employees are no longer "*allowed to use the word RMA*", as it was a former policy document put forward by the previous administration. A new vision on mobility is being built, which aligns with the new administration's priorities.

In 2016 (see figure 12), the modal share of cars was 42%, dominating the modal split. The forecast shows that by 2040, the modal share of cars will have decreased to 28% (City of Rotterdam, 2020; STEP B). This calls for redistributing the space to accommodate the new sustainable mobility needs.

The document lists 37 measures part of the Mobility Implementation Programme, and for their implementation, it specifies that the principles laid down in the RMA are applied (STEP C). A lot of experimentation and piloting is taking place alongside structural redesigns. RMA does not feature a strategic plan (STEP D), only a timeline for the measures, complemented with vision maps for each implementation period.

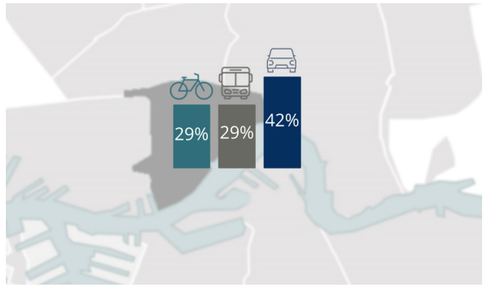


Figure 12. Rotterdam - inner city modal split (2016) (data by City of Rotterdam, 2020; figure by the author).

Key messages from the FSSD analysis - Rotterdam

	RMA key aspects	Reflection on success factors
Vision	*Key document goal:* Provide guidance to people involved in the definition and implementation of measures on the way they should approach the mobility transition *Main approach:* Mobility transition through 1) volume control - preventing unnecessary kilometres, 2) change - efficiency and modal shift, and 3) clean motorised transport modes *Guiding principles:* • More space for pedestrians, cyclists and public transport • Safe and healthy connections • Everyone can participate • Vital economic traffic	> Clear and straightforward structure of document. > Tactic plan outlining the main mobility approach with guiding principles and not a blueprint document. > Main goal of document is to provide a working method approach for the policymakers and implementers in the city. > Mutually supportive policy principles in line with the main mobility transition approach of the city. > General phrasing of approach and principles without a specification of concrete numeric targets leaving freedom for flexibility and adjustments.
Current baseline	• City, population and mobility demand growth • Inner city modal split dominated by the car (2016) • Increasing share of PT and cycling in the inner city • 60% of traffic accidents occur on 50 km/h roads	> Various facts and figures collected and summarised in relation to urbanisation, densification, housing, mobility, inclusivity, public space.
Building blocks	• 37 measures with different timelines (by 2022, 2022-2025, 2025-2030, by 2040) • Inner city measures targeting redesign of public spaces with car-low measures, reduction of on-street parking, adding/ expanding bike parking facilities, and the execution of experiments in the public space	> RMA does not feature a detailed explanation of each measure. > A wide range of measures varying in targeted scale (e.g., city and street scale), target groups (e.g., children, residents and businesses) and the policy cycle duration (e.g., experiments and long-term structural redesigns).
Strategic plan	• RMA does not feature a section detailing the collaborations with stakeholders, the communication, monitoring and evaluation processes, and the finances	> RMA contributes to two existing mobility policies, and the city's environmental vision. > RMA contributes to other policy areas: air and noise pollution, climate resilience, urban public space, greenery, and inclusivity.

Table 18. Key messages from the FSSD analysis - Rotterdam.

PUSH AND PULL MEASURES IN THE INNER CITY *(REGIME ELEMENTS)*

For the inventory of the measures for the inner city, a comprehensive review has been done of various sources, including the RMA, the Mobility Implementation Programme, monitoring reports by the city and projects mentioned on the official website of the municipality (e.g., www.rotterdam.nl/stadsprojecten and www.rotterdam.nl/bereikbaar-overzicht). Findings from the interviews with the two city representatives from Rotterdam (Strategic Advisor Mobility and Head of Area Development Inner City) have further contributed to the review.

As with the measures in Amsterdam, this list might be incomplete and focuses on inner city projects linked to or mentioned in the RMA. The overview serves to illustrate the variety of measures taken by the city administration as the main stakeholder commissioning the changes. The inventory comprises 18 projects, which are organised around car parking, bike parking, traffic management and regulation, and public space redesign. The figure below offers an overview of the measures per measure effect type – push or pull. Three of the measures from the list apply to the whole city area, namely, the introduction of paid parking, the introduction of 30 km/h speed limits, and the imposition of stricter rules and penalties for traffic offenders regarding noise pollution.

Public space redesign

Bicycle parking

▲ PULL EFFECT MEASURES

2019 - 2021:
Redesign of Coolsingel towards a car-low environment

2020 - in progress:
- Redesign of Hofplein towards a car-low environment
- Redesign of Schouwburgplein towards a car-low environment

2021 - in progress:
Redesign of Westblaak (project is on hold)

Continuous:
Adding new bicycle parking facilities in the inner city and expanding existing ones

Car parking

▼ PUSH EFFECT MEASURES

2019 - 2024 • Introduction of paid parking in all districts within the ring of Rotterdam

2020 - in progress • On-street parking spaces removal in the inner city

Traffic management and regulation

▼ PUSH EFFECT MEASURES

2020 • Experiment Erasmusburg:
closing off lanes to motorised traffic (May-July)

2020 • Experiment Oude Westen:
limiting through car traffic on Kruisplein and Eendrachtsplein (May-July)

2020 - 2021 • Experiment Maastunnel corridor:
removal of lanes for car and truck traffic

summertime • Temporary closure of streets to car traffic:
Aert van Nesstraat, Meent, Kruiskade, Schouwburgplein, Witte de Withstraat and Rhijnspoorkade (May - Sept 2024)

2021 - in progress • Stricter rules and penalties for traffic offenders regarding noise pollution

2022 - in progress • Introduction of 30 km/h speed limits on many streets across the whole city

2023 • Permanent prohibition for using the right lane on the Maastunnel for car and truck traffic

2024 - in progress • Kruisplein and Eendrachtsplein intersections permanently closed to car traffic in both directions

2024 - in progress • Closures to car traffic on Goudsesingel

Figure 13. Push and pull measures in the inner city of Rotterdam.

The public space redesign and bicycle parking measures have a pull effect as they contribute to making sustainable modes of travel more attractive. In contrast, car parking and traffic-related measures have a push effect as they help to discourage the use of unsustainable modes, for example, by making it more expensive or inconvenient to use the car in the inner city. As it can be observed, the city deploys both measures with push and pull effects. The listed experiments have been the starting point for applying the RMA approach. The Oude Westen and Erasmusburg experiments took place in 2020, intending to investigate the effects of a different traffic system configuration which limits motorised traffic on certain roads, making the environment more pedestrian- and cycling-friendly (City of Rotterdam, 2020). In 2024, the city is permanently closing the Eendrachtsplein and Kruisplein intersections to car traffic in both directions. The Maastunnel experiment took place in 2020-2021 and was a measure to address the insufficient compliance of the corridor with the European air quality standards (City of Rotterdam, n.d.). Since 2023, the right lane on the Maastunnel is no longer available for motorised traffic except for public transport vehicles, emergency services and zero-emission taxis (City of Rotterdam, n.d.).

Other temporary street closures take place in the inner city during the summertime. From May to September 2024, six streets in the inner city are closed to motorised traffic apart from emergency services from Thursday to Sunday in the evenings to make them safer and reduce nuisance in areas rich with nightlife (City of Rotterdam, n.d.). For the redesign of the public space, a number of so-called '*stadsprojecten*' (city projects) are being implemented, such as the redesign of the Hofplein, Schouwburgplein and the Westblaak. As mentioned by the strategic mobility advisor, these projects have been the most successful stories due to their wide public acceptance:

> *"The most successful stories are now the stadsprojecten or the city projects. […] We ask landscapers to make a nice picture with a lot of trees and green terrace. With that picture we went to the city, and everyone said, 'Yes that is perfect, this is what we want!'. From that point, we started our project - what does it mean for the economic side or the traffic, etc. It was actually a totally different starting point because everyone said we wanted this."*
>
> - Strategic Advisor Mobility at City of Rotterdam

Similarly to Amsterdam, Rotterdam also introduces 30 km/h speed limits across the city. Currently, more than half of the streets in Rotterdam have a speed limit of 30 km/h. By 2025, this rule will be applied to 115 more streets (City of Rotterdam, n.d.). Figure 14 shows the 21 streets in the inner city which are part of that list.

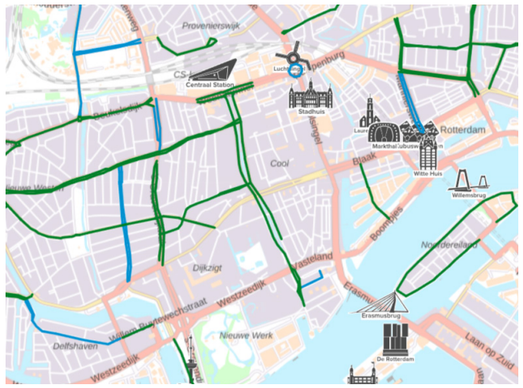


Figure 14. Map of the streets which become 30 km/h in Rotterdam's inner city by 2025 (City of Rotterdam, n.d.).

from 50 to 30 km/h *on-going project for 30 km/h*

MONITORING AND IMPACT OF THE INNER CITY MEASURES *(REGIME ELEMENTS)*

Rotterdam does not publish monitoring reports concerning the RMA compared to the city of Amsterdam, which publishes annual Autoluw progress reports. Mobility-related monitoring is present in the annual account reports, which detail the municipality's progress in all policy fields. The reporting for 2019-2021 is done in a structured manner on the same indicators, allowing for precise comparisons. Since 2021, the theme *'traffic and transport'* has been integrated into the larger theme *'urban development'*, and concrete indicators for the inner city concerning mobility are missing from the overview. For the inner city, the following indicators have been monitored for the years 2019-2021:

- Relative share of clean journeys to and from the city centre
  (the share of journeys by bicycle, public transport, walking and clean motor vehicles, compared to the total number of journeys);
- Additional bicycle parking capacity in the city centre.

	2019	2020	2021
Target	62.4%	63%	63.7%
Realised	**63.4%**	**61.2%**	**60.1%**

Figure 15. Relative share of clean journeys to and from the city centre in Rotterdam (2019-2021) (data from Jaarstukken).

The figure above shows the targeted and realised share of clean journeys to and from the centre for 2019-2021, as reported through the city's annual accounts. The decrease in the share of clean journeys in 2020 and 2021 is attributed to the effect of the coronavirus pandemic on public transport (City of Rotterdam, 2022). The figure below presents the bicycle parking spots added in the inner city for the same period. A total of 3,640 new bike parking spots have been introduced, work which continues in the following years as well due to the increasing modal share of bikes. The interviewee, head of area development inner city, further confirmed this demand and the work on bicycle parking.

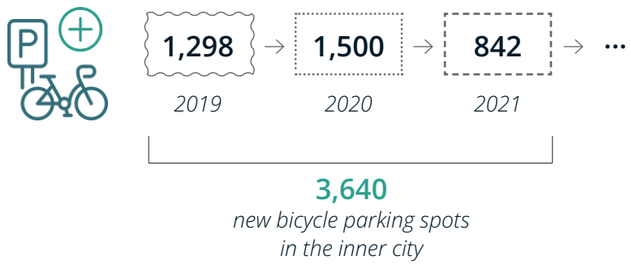


Figure 16. Additional bicycle parking capacity in the inner city of Rotterdam (2019-2021) (data from Jaarstukken).

In addition to the annual accounts, the city has published some monitoring and evaluation reports regarding certain measures which have been completed or are still in progress. For instance, twice a year, the city publishes a report on the monitoring of its large projects, including the redesign of the Hofplein, which reflects on the quality of the design, the finances, the implementation timeline and the risks (e.g., Monitor Grote Projecten oktober 2022 – maart 2023). Another document provides a detailed evaluation of the Maastunnel experiment featuring an overview of the effects on air quality and traffic, the results from a survey sent to residents to assess the experiment and report on their travel behaviour changes, and the results from a media analysis of the media attention surrounding the measure (City of Rotterdam, 2021).

Overall, it is difficult to assess whether the RMA or the Mobility Implementation Programme produce positive social impacts due to the lack of dedicated and enough monitoring mechanisms. Information about each measure proves difficult to obtain, and an integrated and cohesive monitoring document is not present, as with Autoluw.

STAKEHOLDERS AND PUBLIC PARTICIPATION *(REGIME ACTORS)*

In terms of the different policy cycle phases, it has been established that there was no dedicated participation process organised during the agenda-setting and policy formulation phases concerning the policy document RMA, as was the case with Autoluw. However, it is mentioned that the 2019 participation processes with more than 100 Rotterdam companies, institutions and governments surrounding the development of the Rotterdam Climate Agreement have been used as input for the RMA (City of Rotterdam, 2020; Het Mobiliteitskompas, n.d.). Following the adoption of the RMA, various participation processes have been planned for the individual measures of the policy (City of Rotterdam, 2019). As was the case with Amsterdam, the degree of participation in Rotterdam varies significantly per project/measure depending on the scale of the project and the decision of the responsible project managers on the type of participation they want to have:

> *"It depends also on the scale of projects. [...] The level, of course, depends. Sometimes it is more information than really participation. For the bigger projects, for instance the Hofplein, we have talked a lot with all the stakeholders in the area, but also with all the people in the city because it is such an important square - what they think should happen there. That is on a frequent base and during all the years that we were working on the plan. We do it for a lot of projects, but the level depends - how intense it is."*
>
> - Head of Area Development Inner City at City of Rotterdam

The City of Rotterdam is the most important stakeholder as it oversees the implementation of various measures. Other important stakeholders concerning the policy cycle phases decision-making, implementation and evaluation include (City of Rotterdam, 2019):

- Regional and national partners, such as the Port of Rotterdam, Metropolitan Region Rotterdam The Hague, Rijkswaterstaat and NS;
- Interest organisations, such as Cyclists' Union Rotterdam, RET, Transport and Logistics Netherlands, EVO.

Regarding the inner city measures, the two Rotterdam interviewees specified a number of parties which have been involved and are considered important in the scope of the RMA measures:

- Emergency services, such as the fire and police departments;
- Local businesses, investors, property owners and Organisation BIZ Rotterdam Centre (representing entrepreneurs and property owners in the core shopping area);
- Residents, Vereniging Rotterdam Central District (association representing multinationals, start-ups, creatives, cultural organisations, residents, visitors, contractors, investors and government in the central district) and the wijkraden in the inner city district (in English: neighbourhood councils; consisting of elected neighbourhood representatives who ensure the involvement of residents, organisations and entrepreneurs in neighbourhood-level decision-making as they have the power to advise the board and the alderman).

Concerning the acceptance of the measures amongst the public, there have been mixed responses varying per measure. As indicated by both interviewees, in general, there is a broader support base in the inner city for mobility transition projects compared to other city areas. The strategic mobility advisor mentioned that much initiative for change even comes from the residents and businesses themselves:

> *"The people in the inner city, they ask for it. [...] Not only the inhabitants, but also entrepreneurs, investors. It is not a top-down change from the city, but also really from the bottom-up, from the people who live or work in the city."*
>
> - Strategic Advisor Mobility at City of Rotterdam

For instance, the general response to the Hofplein project has been positive. Still, there are some concerns expressed by the property owners who are worried about the logistics in the area following the implementation and about their clients who wish to come by car to the shopping areas. The concerns from residents are mostly related to the finances of the project, that "*it is really expensive*", as clarified by the head of area development:

> *"They [property owners] are worried about the logistics. They think they cannot get any new stuff to the shops anymore. They are also worried for their clients. For instance, [...] there are some expensive shops, and a lot of people go there with their cars to the inner city. They think 'What is going to happen with my shop when the city is less reachable by car?'*
>
> *[...]*
>
> *Most of the people are really happy with the plans for the Hofplein. [...] I think the most resistance is from the building owners worried about the logistics, and the citizens as more about 'Well, that is really expensive'."*
>
> - Head of Area Development Inner City at City of Rotterdam

The experiments which took place in 2020 have gathered more negative connotations. There has been resistance from the residents, shopping owners, taxi drivers and regular drivers impacted by the changes. For instance, there have been petition initiatives for stopping the experiments (e.g., Petities NL, 2020), and some residents have expressed their disapproval of the lack of consultation processes and sufficient information provision by the municipality regarding these measures (e.g., OPEN Rotterdam, 2020). The head of area development further confirms this. The next sections elaborate on the key stakeholders and the public participation degrees for the policy cycles decision-making, implementation and evaluation and apply the Spectrum of Public Participation model (IAP2, 2018) to each phase.

Policy cycle phases decision-making and implementation

Following a review of various city reports and news articles, evidence for participatory processes has been found for five projects from the list of the push and pull measures mentioned previously. These include the push effect measures experiment Oude Westen, the permanent closure of Kruisplein and Eendrachtsplein to car traffic, and the pull effect measures redesign of Schouwburgplein, Hofplein and Westblaak. **Appendix 10** offers a summary table of all policy cycle participation processes, the stakeholders involved, the means and goals of involvement and the degree of participation. Some of the more prominent examples are elaborated below.

In 2020, the Oude Westen experiment took place, during which the Eendrachtplein and Kruisplein were closed off for through traffic. For ideas about the programming of the freed-up space and the placement of urban furniture, businesses and residents have been consulted through, for example, street interviews (Bende, 2020; see figure 17). Furthermore, the measures have been coordinated with the emergency services and the PT operator RET (van Kruiningen, 2020).

Figure 17. Street interviews with passers-by about the Oude Westen experiment. © Thijs van Luijk

For the traffic measures at the Kruisplein and Eendrachtsplein intersections, a public participation process has been taking place since 2022, where locals, businesses, associations and users of the squares have been involved in the co-design of the measures through discussion and information sessions, online questionnaires and workshops. The implementation of the measures began in September 2024 (Mijn Rotterdam, n.d.).

For the redesign of the Hofplein, many stakeholders have been involved due to the scale of the project, such as residents, businesses, property owners, associations and organisations of businesses and residents, the public transport operator, ENECO, among others:

> *"For the Hofplein, we have several rounds and several meetings. Some of them were on invitation and only with the stakeholders that were directly on the spot. We had also, that was more online, that all the citizens of Rotterdam could talk about the plan and give their input."*
>
> - Head of Area Development Inner City at City of Rotterdam

Policy cycle phase evaluation

Since many of the projects are still in progress, information was found only about two of the measures which involved the public in the evaluation phase, particularly the Oude Westen and the Maastunnel experiments. For the Oude Westen, the results have been evaluated following the experiment in consultation with the residents and the businesses (van Kruiningen, 2020). For the Maastunnel experiment, a questionnaire was sent to the residents of 12 neighbourhoods following the experiment, which received 178 responses. Respondents were questioned, for example, about their opinions of the lane closure and their travel behaviour as a result of the experiment (City of Rotterdam, 2021). For this phase, as observed, the degree of participation is limited to only informing and consulting with the public compared to the previous phase where various stakeholders have been informed, involved and collaborated with.

5.4 CITY OF UTRECHT

© *Martin Woortman · 19 September 2020*

Population 2024 · 374,374 (city) · 20,263 (inner city)
Typology of inner city · Historic city centre expanding with a modern side
Modal split*

Bicycle	Walk	Car	PT	Other
37%	**28%**	**27%**	**5%**	**2%**

**CBS data for 2020: Modal split for Utrecht residents for journeys to, from and within the municipality during weekdays*

- Vision 2021-2040
- Mobility vision
- City area focus

MOBILITEITSPLAN 2040 *(REGIME FORMAL RULES)*

The Mobiliteitsplan 2040 (in English: Mobility Plan 2040, abbreviated MP and MP2040) is Utrecht's mobility policy adopted in 2021, focusing on the whole city area. The 173-page document lays down the five main principles corresponding to the city's mobility approach until 2040. The policy slogan is "*Your street and our city are healthy, attractive and accessible to everyone*". It begins with a foreword by the Alderwoman for Mobility, Energy and Green (Lot van Hooijdonk) and contains 11 chapters.

Overall, the document has a clear structure, but due to its lengthiness and lack of a general overview of the planned measures (as was the case with Autoluw and RMA), its comprehensibility decreases. However, this is the most concrete and thorough document of all three. The in-depth application of the ABCD-procedure of the FSSD for this policy document can be found in **Appendix 8**. The paragraphs below and Table 19 summarise the most significant findings.

MP's main policy goal is *"healthy urban living for everyone"*, accompanied by 5 key principles (STEP A). In 2015, the modal share of bikes was 49%, followed by PT with 33% and the car with 18% (see Figure 18; STEP B). Based on the forecast, following the implementation of the MP measures, the 2040 modal shares of the car and PT will drop to 14% and 31%, respectively, while the modal share of bikes will increase to 55% (City of Utrecht, 2021).

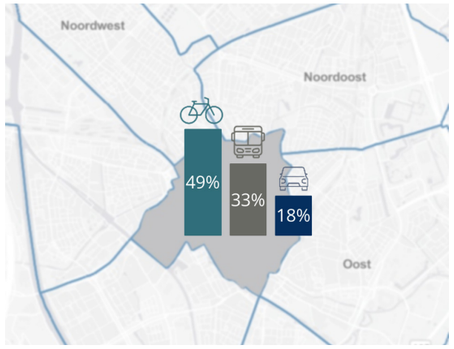


Figure 18. Modal split for trips to and from the inner city of Utrecht for 2015 (data by City of Utrecht, 2021; figure by the author).

Per step, there is often a set of very broadly defined measures without concretising particular streets or locations where the changes are envisioned (STEP C). In contrast, the strategic plan offers great detail (STEP D). Mobiliteitsplan has been drawn up in consultation with key stakeholders, such as residents, social organisations, businesses, knowledge institutes, and authorities, among others. Similar to Amsterdam, a possible financial concern is that a substantial part of MP's investment will come from external sources. The policy states that rigorous monitoring mechanisms will be in place considering a wide range of indicators.

Key messages from the FSSD analysis - Utrecht

	MP key aspects	*Reflection on success factors*
Vision	*Key policy goal:* Healthy urban living for everyone *Key steps/principles:* *Step 1.* Smart zoning *Step 2.* Travel differently *Step 3.* Networks in order *Step 4.* Smart parking *Step 5.* Smart steering	> Clear and straightforward structure of document. > The length of the document and the lack of a general overview of the planned measures decreases the comprehensibility. > A coherent package of mutually supportive goals working in unison for the achievement of the overarching goal. > General phrasing of policy goal and steps without a specification of concrete numeric targets leaving freedom for flexibility and adjustments.
Current baseline	• Population and travel growth (especially for bike and PT) • Challenges of overloading of bike routes and overcrowding of bike parking facilities in the inner city • Modal split of the inner city dominated by the bike (2015) • Increasing modal share of bikes in the future	> Various facts and figures collected and summarised in relation to demographics, economy, public space and mobility.
Building blocks	• Various measures with different timelines (2021-2025, 2025-2035, 2030-2040) • Inner city measures targeting a relief on the traffic pressure in the inner city by diverting traffic to alternative routes	> A wide range of measures varying in targeted scale (e.g., city and street scale) and function (regulatory vs. design). > No mention of experimentation and piloting in the inner city.
Strategic plan	• Key stakeholders include residents, social organisations, businesses, universities, authorities at different governmental levels, nearby municipalities, ProRail, etc. • Plan developed in consultation with key stakeholders • Total investment needed: 2.5 – 4 billion euros • Rigorous monitoring and annual progress reporting • Impact on / strong relation to 5 other policies	> Involvement of key stakeholders in the policy formulation. > High dependency on other authorities for the financing of the measures. > MP2040 contributes to other policy areas: health, climate, urban public space, housing, economy, inclusivity.

Table 19. Key messages from the FSSD analysis - Utrecht.

PUSH AND PULL MEASURES IN THE INNER CITY *(REGIME ELEMENTS)*

For the inventory of the inner city measures, a review has been performed of various sources, including the MP2040, the monitoring reports for MP, and projects mentioned on the official website of the city in archived news items and the current projects' overview (www.utrecht.nl/wonen-en-leven/verkeer/verkeersprojecten). Moreover, two interviews with the Utrecht city representatives (Senior Policy Advisor and Traffic Engineer/Urban Planner, and Senior Designer Public Space Centre Utrecht) were used to enrich the review. This inventory illustrates the wide variety of measures taken in the inner city as part of its transition towards sustainable mobility. This list might be incomplete and focuses solely on projects linked to or mentioned in the MP2040 policy document. The inventory comprises 15 projects organised per topic: public space redesign and bikes and bicycle parking measures (PULL), car and bicycle parking and traffic management and regulation measures (PUSH) – see figure 19. Some of these measures apply to the whole city area or all its inhabitants and are not limited to the inner city, such as the provision of cheap bicycle deals for U-pass holders and the stricter enforcement of the prohibition for mopeds and scooters to ride on bike paths.

Public space redesign

Bikes and bicycle parking

▲ PULL EFFECT MEASURES

since 2018 – in progress:
- Expansion of the pedestrian area in the inner city
- Redesign of Westplein, Leidse Rijn and Graadt van Roggenweg (Lombokplein) into a car-low environment

2020 - in progress • Redesign of Moreelsehoek into a shared space

2022 - in progress:
- Redesign of Ledig Erf and surroundings into a car-low environment
- Redesign of Weerdsingel Oostzijde into a cycle route where cars are guests

2024 - in progress:
- Redesign of square Neude
- Redesign of Lange Jufferstraat into a car-low environment

Continuous:
Adding new bicycle parking facilities in the inner city and expanding existing ones

2023 - 2024:
Scaling up the provision with cheap bicycle deals for U-pass holders

Car and bicycle parking

▼ PUSH EFFECT MEASURES

2021 - in progress • On-street parking spaces removal in the inner city

2023 introduced:
- Introduction of paid parking in the whole inner city
- Introduction of a ban for bicycles parked outside bike parking facilities in the station area

Traffic management and regulation

▼ PUSH EFFECT MEASURES

2019 - in progress • Introduction of 30 km/h speed limits

2023 - in progress • Closure of Catharijnesingel to through car and motorcycle traffic

2024 - in progress • Stricter enforcement of prohibition for mopeds and scooters to ride on bike paths using mobile license plate cameras

Figure 19. Push and pull measures in the inner city of Utrecht.

The bike-related measures have a pull effect as they help increase the modal share of bikes and tackle the challenges the city faces in relation to bike parking. For instance, in 2021, the city opened its largest inner city bicycle shed, House Modernes, with space for 900 bicycles (City of Utrecht, 2021). In 2023, the city introduced 1,000 extra bicycle deals for U-pass holders, which allows residents with low incomes to buy a refurbished bicycle for 30 euros, helping to address transport poverty in the city (City of Utrecht, 2023).

The public space redesign projects also have a pull effect as they help to make active mobility more attractive. The inner city pedestrian area has been expanding continuously. In this area, cycling and driving are not allowed, giving way to pedestrians as the number one priority user of the space. Cyclists can park their bikes at dedicated spaces at the edges of the pedestrian area or at the indoor bicycle sheds in the inner city (City of Utrecht, n.d.; see figure 20).

Map legend:
- *pedestrian area*
- *car-free area*
- *indoor and guarded bike parking*
- *pop-up bike parking at busy times*
- *bike routes around pedestrian area*
- *bike routes to bike parking in the pedestrian area*

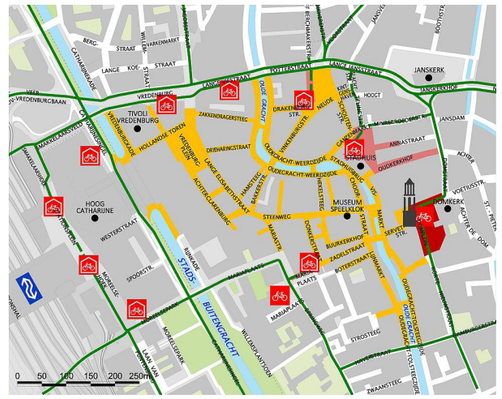


Figure 20. Map of the pedestrian area in the inner city of Utrecht (City of Utrecht, n.d.).

Next to that, a lot of structural redesign projects are taking place. For example, the Moreelsehoek located in the Central Station area is being transformed into a shared space where pedestrians, cyclists and (limited) car traffic are co-users of the space (CU 2030, n.d.). The square Neude is being transformed from a square with heavy bicycle use to a space where other uses occur (e.g., sitting, relaxing, meeting, walking). Trees and benches are being placed in the centre of the square and bike parking at the edges of the square is expanded (City of Utrecht, n.d.):

> *"[...] on the Neude, one of these squares with lots of bicycles, [...] we bring back the possibility of just sit there and relax; and show the people on bikes that maybe they should look for another place to park their bikes because the square is designed for staying, for meeting, for playing, or whatever. We are putting in some new design objects, so people can make this place theirs again and you will not put your bike. It looks like it is bike parking now, because there is nothing to do."*
>
> - Senior Designer Public Space Centre Utrecht at City of Utrecht

Concerning the push measures, the city has been removing on-street parking in the centre since 2021, with approximately 50 spaces removed annually in the whole city (City of Utrecht, n.d.). Similarly to Amsterdam and Rotterdam, Utrecht is also introducing 30 km/h streets across the whole city with some exceptions, such as bigger capacity roads on the outskirts (City of Utrecht, n.d.). Another big project is the closure of Catharijnesingel to through motorised traffic, which is being prepared for this closure to be introduced in early 2025 (City of Utrecht, n.d.).

MONITORING AND IMPACT OF THE INNER CITY MEASURES *(REGIME ELEMENTS)*

Every year, the city of Utrecht publishes the report Monitor Mobiliteitsplan featuring an evaluation per step of the plan. These monitor reports correspond to the MP2040 plan, as was with the Autoluw reports dedicated to monitoring the Autoluw agenda. For the inner city of Utrecht, some of the information featured is on the:

- Modal split changes;
- Residents' satisfaction with accessibility of the inner city per transport mode and road safety;
- Residents' assessment of the nuisance from road traffic; and
- Use rates of shared mobility options and number of parking spaces for shared cars.

All these reports feature the same indicators with data available for each year, allowing for precise comparisons and progress tracking. A lot of the data is from the resident survey performed every year across all districts and from ODiN (CBS). The chart below shows the modal split for the inner city for the period 2019-2023.

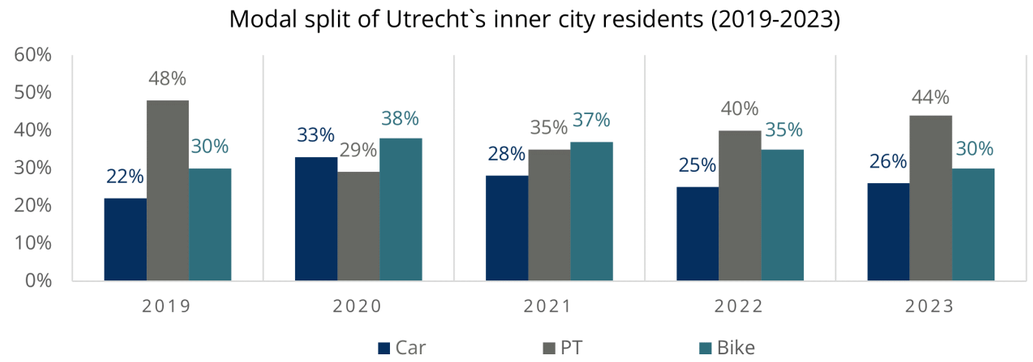


Figure 21. Modal split of Utrecht's inner city residents (2019-2023) (data from Stumpel et al., 2024; figure by the author).

As reported in the monitor, the share of PT trips fell during 2020 and 2021 compared with 2019 due to the coronavirus pandemic. However, the share of PT recovered in 2022 and 2023 during the post-pandemic period. The fall in the share of cycling trips in 2023 is explained by the high precipitation during that year, especially in November (Stumpel et al., 2024).

Residents' satisfaction with the accessibility of the inner city by bus and tram has decreased over the years. In 2021, 80% of residents were satisfied with the accessibility by bus compared with 75% in 2023. For the tram, this decreased from 53% in 2021 to 42% in 2023. These decreases in satisfaction are explained by the reduction in the frequency of public transport and the reliability decrease of timetables due to trip cancellations due to the PT staff shortages and strikes in 2023.

Next to that, residents' assessment of the amount of bike parking spaces in the inner city shows that 19% of residents think there are too many parking spaces in 2023 compared with only 9% in 2021 (Stumpel et al., 2024). In 2023, there were 3,100 bike parking spaces in guarded parking facilities, 6,500 spaces in unguarded on-street sheds/racks, and 900 pop-up temporary spots in the inner city, excluding the station area. The number of bike parking spaces in guarded facilities has increased since 2020 due to the opening of two new locations at House Modernes and Neude which have about 1,600 spots. In 2023, only 39% of all parked bikes were parked in a dedicated facility (guarded indoor facility, outdoor racks or sheds), indicating that there are still too few facilities for the growing bike parking demand in the inner city (Stumpel et al., 2024).

In the station area, there were 20,600 spots in guarded parking facilities and only 600 on the street. As can be observed from the graph (see figure 22), the number of parking spots on the street in the station area has been declining in line with the introduction of a regulatory measure prohibiting bicycle parking outside the dedicated parking facilities (Stumpel et al., 2024).

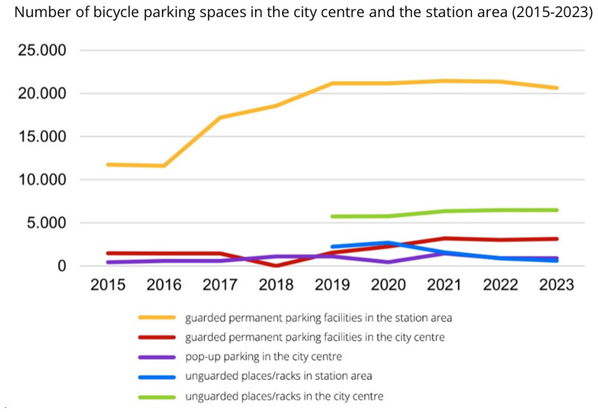


Figure 22. Number of bicycle parking spaces in Utrecht's city centre and the station area (2015-2023) (translated from Dutch; Stumpel et al., 2024).

Overall, it is difficult to conclude whether some positive effects, such as the decrease of the car's modal share for the inner city, can be attributed to the MP measures. As the 2024 monitoring report states, several factors have played a major role in some of these outcomes, such as the coronavirus pandemic, the weather and the PT staff shortages and strikes in 2023. The increase in the bike parking capacity in the inner city and station area is certainly helping to address the challenges resulting from the increase in bike travel in the city. However, there is still a gap between the demand for dedicated parking facilities and the supply, as reported above.

STAKEHOLDERS AND PUBLIC PARTICIPATION *(REGIME ACTORS)*

The city of Utrecht has one department working on all projects related to housing, economy, urban planning and mobility, called Ontwikkelorganisatie Ruimte (in English: Development Organisation Space). The topics of mobility and urban planning belong to the same sub-department called *'ruimtelijke ordening'* (in English: spatial planning) within this organisation. As expressed by the interviewed senior policy advisor, the city of Utrecht does not have a large organisation with many employees as is the case with Rotterdam and Amsterdam, making it easier to *"work more closely together without making it official"*:

> *"If I want to talk with a colleague who is in landscape architecture, I just grab my phone. It is a direct colleague of mine. He is not working in that other department."*
>
> - Senior Policy Advisor and Traffic Engineer / Urban Planner at City of Utrecht

The degree of participation varies per measure, as was the case with the other cities. However, as the senior public space designer indicated, it is *"common practice to inform people at least, but also to give people the opportunity to bring in their ideas at the early stage of plan-making"*. Residents are typically informed by mail or letters, but recently, the city has been using social media such as Instagram to enquire residents' opinions. The interviewee further clarified that participation can be difficult because sometimes people do not have the required expertise and knowledge in certain areas to have an opinion on the discussed plan. However, this interviewee favours participatory planning, especially on street-level projects, despite the amount of effort it takes. On the other hand, the senior policy advisor is against the extensive use of participation for projects not on the street scale due to the effort and time it takes and the often-lacking expertise of the public required for expressing opinions about certain aspects of a project.

The sections below elaborate on the key stakeholders and the public participation degrees per policy cycle by applying the Spectrum of Public Participation model (IAP2, 2018) to each phase. **Appendix 11** offers the complete overview of the key stakeholders involved, the means and goal of involvement and the degree of participation per policy cycle phase and measure. Since the inventory of measures presented earlier features mostly current (on-going) projects, no evidence has been found about public participation during the policy evaluation phase. However, this does not mean that participation will not take place then.

Policy cycle phases agenda-setting and policy formulation

As mentioned, various stakeholders have been consulted to gather input and opinions regarding the MP2040. For instance, in November 2019, a meeting was held open to anyone from the city to join, and two online sessions with residents took place in June 2020. Other various working sessions have been organised with government representatives from different levels, interest groups, knowledge institutes and employers. A resident initiative called 'Het Wiel' has been acting as a sounding board for the municipality (City of Utrecht, 2021). All these were consultation processes based on the public participation model spectrum (IAP2, 2018), as the city used the opinions and preferences of various stakeholders to inform their decisions on the direction and contents of the Mobiliteitsplan.

Policy cycle phases decision-making and implementation

Information for public participation during these policy cycle phases has been found in about 10 projects from the inventory of measures presented earlier. For instance, for the redesign of the Ledig Erf and surroundings, many participatory processes have taken place since 2021 via digital questionnaires, neighbourhood and online meetings, street interviews, sounding board group, and conversations with relevant stakeholders, among others. Based on studies and the collected information, wishes and opinions of the stakeholders, a preliminary plan was developed, which was then also subject to consultation, adjusted and made definitive (City of Utrecht, n.d.).

For the measures concerning the expansion of the pedestrian area, a digital questionnaire was distributed in 2021, which received 200 responses. These responses featured mixed reactions to the proposed changes, with some people supporting more space for pedestrians and shoppers, and others opposing the changes and requesting more space where cycling is allowed (City of Utrecht, 2021). Furthermore, when the Mobility Plan 2040 was released for inspection and opinions by the public in 2021, the resident group of the inner city *'Binnenstad 030'* expressed their disapproval of the expansion of the pedestrian area, which, according to them, hinders the accessibility of residents' homes by both car and bicycle and the accessibility to the stores by customers and logistics suppliers (Binnenstad 030, 2021). Another measure which has received mixed responses is the closure of Catharijnesingel to through traffic. During an information market in 2024, some residents expressed their understanding of the measures and the need to reduce the traffic volume, while many others, especially residents who live in the area, have been less positive about the changes (Coopmans, 2024).

[This page intentionally left blank]

06

CASE STUDIES: COMPARATIVE ANALYSIS

COMPARISON PER ASSESSMENT COMPONENT
CHANGES IN THE ASSESSMENT METHODOLOGY
POSITIONING ON THE MATRIX

© Mathew Schwartz · 13 June 2018 · A row of bicycles parked at the Amsterdam train station

Following the meticulous review and analyses in chapter 5, this chapter provides a comparative analysis of the three case study cities regarding their inner city sustainable mobility transitions. The chapter begins with general impressions of the similarities and differences between the cities concerning the landscape developments, urban form and regime characteristics. It then compares the cities per assessment component (programmatic, process, political and temporal) on each mobility policy success factor established in chapter 4. Some changes in the assessment methodology are further elaborated. The three cities are then positioned on the mobility policy success assessment matrix based on the comparative analysis.

LANDSCAPE DEVELOPMENTS AND URBAN FORM

All three cities are experiencing the effects of urbanisation in the face of population growth and travel demand growth. Rotterdam's population is experiencing the slowest growth among the three cities, but it takes up the largest area in hectares and can be considered the most sprawled city and least dense of all three. Concerning typology, all three cities have different urban forms and development histories in the inner city area. Amsterdam has a typical historical city centre (developed before WW2) with a half-circle layout with many canals inside and a canal around it acting as the barrier separating it from other city districts. In the north, it borders the river IJ. Utrecht's inner city is historical, and, similar to Amsterdam, its old part is bordered by a canal. However, the inner city of Utrecht is expanding to the west with some new developments, such as the new city district Beurskwartier. Rotterdam has an old/modern inner city area based on the distinction by Karlsson (2016), which, as explained by the head of area development, *"was bombed in the Second World War and afterwards it was totally empty"*. As a result, the newly developed inner city was built to accommodate the car in the first place with "*a lot of infrastructure for the cars - big boulevards with 2x2 driving lanes*". On the south, the inner city borders the river Maas acting as a big barrier separating it from the south of the city, and on the north – the railway separating it from the northern part of the city. The central station in all three cities is part of the inner city area.

All three cities have experienced the effects of the coronavirus pandemic on travel patterns and GHG emissions from transport. In 2020, all cities experienced a decrease in emissions from transport explained by the decrease in travel. In addition, all cities had income losses due to less revenue from parking tax and experienced project delays. The 'hit' of the pandemic on public transport was another aspect repeatedly appearing in various progress reports with effects, such as decreases in the modal share of PT and financial implications for PT operators. Another similarity between the three is that in recent years, city administrations have been increasingly looking at mobility from a broader interdisciplinary perspective by taking other policy areas into account, such as climate, economy, health and inclusivity. This is also demonstrated in the three policy documents.

REGIME CHARACTERISTICS

Rotterdam has the most fossil fuel-intense modal split of all three cities with the car having the highest modal share in 2023. In comparison, the bike dominates the whole city and the inner city modal splits of Utrecht and Amsterdam. This could be explained by Rotterdam's urban sprawl patterns resulting in longer travel distances. All three policy documents focus on the whole city area with a timespan until 2040. The least rich in content is Rotterdam's RMA and the most – Utrecht's Mobiliteitsplan 2040 with 173 pages. Rotterdam and Amsterdam feature a summary list showing an overview of all planned measures. Utrecht is missing this overview but the MP2040 is the only document containing a preliminary assessment of the potential quantitative impact of the planned measures.

6.1 COMPARISON PER ASSESSMENT COMPONENT

Information obtained through STEEP trends analysis

Information obtained through policy document review

Information obtained through push and pull measures review

Information obtained through regime actors review

PROGRAMMATIC ASSESSMENT

Maximum possible score of (1) per success factor

Mobility policy program is delivered in consideration with other related policy areas

Reviewed factors:
1) mentioning of link/relation to other policy documents
2) mentioning of link/relation to other policy areas/domains

All three policies elaborate on their link to other existing or past policies and other domains. Autoluw lists 12 other policies and programmes with which it aligns and works in parallel with. The RMA is an elaboration of two existing mobility policies on traffic and public transport and contributes to the city's Environmental Vision. That is also the case with MP2040, which is part of the wider Environmental Vision and is a refinement of the city's previous mobility policy. It demonstrates a strong relation to the city's Spatial Strategy and further contributes to national health and climate agreements. Based on all that, it can be concluded that all three cities have sufficiently delivered their mobility policy in consideration with other existing policies and other policy domains, thus, each receiving the highest ***score (1)***.

Amsterdam - score 1 Rotterdam - score 1 Utrecht - score 1

Policy program features mutually supportive goals working towards the achievement of the overarching policy goal

Reviewed factors:
1) presence of an overarching main goal and sub-goals
2) presence of an interconnected/dependent and coherent set of goals

Unlike the RMA, both Autoluw and MP2040 have complementary sub-titles that act as slogans for the policies - *'Amsterdam makes space'* and *'Your street and our city are healthy, attractive and accessible to everyone'*. Autoluw's main goal is to make space to achieve liveability and accessibility. Five interconnected sub-goals are listed that work in unison to achieve the greater goal. MP2040 emphasises the aspects of health and inclusivity in its main goal. Five steps are listed, which are interdependent and not sequential. In contrast, the RMA is initiated as a tactic plan guiding people involved in the definition and implementation of measures on how they should approach the mobility transition, and not as a blueprint document. The main mobility transition approach encompasses volume control, change (efficiency and modal shift) and clean transport. This approach is complemented by four guiding principles which can also be considered sub-goals. Overall, all three policies contain a main overarching goal or approach and a coherent set of mutually supportive and interdependent sub-goals, steps and principles working towards the leading goal. Hence, all three cities receive a ***score of (1)***.

Amsterdam - score 1 Rotterdam - score 1 Utrecht - score 1

Integration of several policy instruments of different nature and scales

Reviewed factors:
1) mentioning of both push and pull measures in policy documents
2) presence of both push and pull measures for the inner city area
3) measures vary in terms of their nature (e.g., target groups, duration, function) and scale of intervention

On the city scale, all documents present a wide array of instruments phased per time period until 2040. They vary in terms of intervention area, target groups, function and policy cycle duration. All three cities list both push and pull measures. However, the starting point varies per city. Rotterdam emphasises the need to tackle the growing city and the accessibility needs of the new homes. The city deploys measures to accommodate the increasing modal share of bikes and PT in the inner city. They use experimentation to test different configurations of the traffic system in the centre. Due to the growth in the share of cycling, Utrecht is experiencing new challenges, such as the overloading of bike routes and the overcrowding of bike parking in the centre. This, coupled with an increasing modal share of active mobility, explains their approach to focus on measures targeting the freeing up of the inner city from unnecessary motorised and bike traffic by diverting it to alternative routes. Amsterdam targets relief on public spaces facing increasing pressure by creating more space in the inner city. These can be linked to the differences in sprawl, density, and urban form in the three cities.

The comprehensive review of the push and pull measures in the inner cities revealed significant similarities. For instance, all three cities deploy public space redesign pull measures, and parking and traffic management/regulation push measures. Recurring measures for all three inner cities include:

- Introduction of 30 km/h speed limits (push);
- Removal of on-street parking (push);
- Introduction of paid parking (push);
- Stricter rules and enforcement of prohibition rules with smart measures (push);
- Redesign of streets/areas towards a car-low or car-free environment (pull); and
- Increasing bicycle parking capacity (pull).

It can be concluded that all three cities (will) deploy both push and pull measures with a wide variety in their nature and scale. All three cities receive a ***score of (1)***.

Amsterdam - score 1 Rotterdam - score 1 Utrecht - score 1

Policy produces positive social impacts (quantitative) in the long-term

Reviewed factors:
1) modal split changes
2) presence of reported positive social impacts
3) impact of measures in the long-term

The reviewed data from monitoring reports reveals that there are significant changes in the modal split development. All three cities experienced a reduction in travel in 2020 and 2021, especially in PT trips because of the pandemic. Other impactful factors include the weather, and the PT staff shortages and strikes in 2023. Therefore, it is difficult to assess whether the modal split impact can be attributed to the implementation of the various measures. Specific measures are certainly helping address challenges in the city and potentially resulting in positive social impacts. For instance, the removal of on-street car parking in Amsterdam has resulted in an increase of the public space available for other uses which can contribute to a better quality of life. The increase of the bike parking capacity in Rotterdam and Utrecht helps address the increasing bike travel demands and tackle challenges resulting from it. However, in Utrecht, for instance, a gap exists between the demand for such facilities and the supply. Next to all that, it cannot be assessed whether these measures have an impact in the long-term, as most of the projects are still in progress or have been completed in the past 2-3 years. Therefore, no observations can be made for the long-term period, such as in 10-20 years. In conclusion, ***no judgement*** can be made on this success factor; thus, it cannot be part of the final assessment.

Policy documents have a clear and straightforward structure

Reviewed factors:
1) clear and straightforward structure – chapters are structured per sub-goal/principle
2) presence of a summary list with the measures

This success factor previously belonged to the political assessment and was entitled *"Policy documents have a clear and straightforward direction which is understood by both civilians and public administration throughout the whole policy cycle"*. However, as not enough information was collected about the level of understanding of the policy direction by civilians and public administration, this factor is retitled and now belongs to the programmatic component. This has been done as enough observations have been made during the policy review in relation to the structure of the policy documents and their comprehensibility.

Autoluw contains an appendix with a summary overview of the planned measures. This is also true for the RMA, but the RMA summary only contains the projects' titles with no further details. However, vision maps are used for each phase in the summary to illustrate the envisioned changes. Utrecht's plan lacks such a summary, which, coupled with the lengthiness of the document, decreases its comprehensibility. The MP2040 is the longest and most elaborate document of all three. The chapters of Utrecht's plan and the RMA are both structured per guiding principle or step of the plan contributing to the overarching goal. This is not true for Amsterdam's Autoluw, which has a slightly chaotic structure. Furthermore, the link back to these goals is often missing throughout the document. Thus, Amsterdam receives a ***score of 0.5*** due to its lack of structure per sub-goal of the plan. Utrecht also receives ***0.5*** points due to the lack of a summary overview of the measures, considering the length of the document. Rotterdam receives a ***score of 1*** due to a clear structure and overview of the planned measures.

Amsterdam - score 0.5 | Rotterdam - score 1 | Utrecht - score 0.5

TEMPORAL ASSESSMENT

Maximum possible score of (2) per success factor

Presence of sufficient and dedicated local funding anticipating the changing needs for sustainable mobility in cities

Reviewed factors:
1) presence of a dedicated mobility budget plan
2) decreasing city assets for mobility measures
3) financial difficulties reported by the interviewees
4) reliance/dependence on external funding sources

All three cities have a budget dedicated to mobility measures, and they report on how this budget has been used in their annual reports. All three cities receive ***a score of (1)*** from a maximum of 2 points for this factor. One of Rotterdam's interviewees reported financial difficulties concerning one project and, as a consequence, its postponement. Despite a rather stable mobility budget throughout the years, since 2022, the mobility budget has become integrated into the wider 'urban development' budget without concrete numbers reported for the theme of mobility. Utrecht's mobility budget has been growing since 2020, but the execution of the planned measures in the Mobility Plan 2040 is highly reliant on external funding from other sources. Both interviewees confirmed this reliance. Amsterdam's planned mobility budget has been declining for the past 2-3 years, and both interviewees mentioned financial challenges as a result of the pandemic and the consequent national budget cuts. Autoluw mentions a need for reliance on external funds, especially for the envisioned long-term PT measures.

Amsterdam - score 1 | Rotterdam - score 1 | Utrecht - score 1

Framing of general policy goals to anticipate changing circumstances on the lower geographical scales

Reviewed factors:
1) main policy goal defined in an abstract/general manner
2) policy sub-goals defined in an abstract/general manner

All three policy documents put forward main and sub-goals, which are defined in a very broad (i.e., abstract) manner, leaving room for flexibility and adjustments to anticipate changing circumstances per measure or geo scale of intervention. There are no concrete numeric and quantitative targets and statements in the titles and descriptions of the goals. Commonly used phrases include 'more', 'less', 'clean', 'safe' and 'healthy'. Hence, all three cities receive a ***score of (2)*** from a maximum of 2 points.

Amsterdam - score 2 | Rotterdam - score 2 | Utrecht - score 2

PROCESS ASSESSMENT

Maximum possible score of (2) per success factor

Presence of enough capacity (personnel) and knowledge throughout the policy cycle

No observations have been made on this success factor due to the lack of sufficient information on this topic both from digital sources and from the interviewees. Hence, this success factor cannot be part of the final assessment.

Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments

No observations have been made on this success factor due to the lack of sufficient information on this topic both from digital sources and from the interviewees. Hence, this success factor cannot be part of the final assessment.

Stakeholders affected by the policy actively collaborated with policymakers throughout the different phases of the policy cycle

Reviewed factors:
1) presence of higher levels of participation than INFORM during policy cycle phases agenda-setting and policy formulation
2) presence of higher levels of participation than INFORM during policy cycle phases decision-making and implementation
3) presence of higher levels of participation than INFORM during policy cycle phase evaluation

All three cities have performed participatory processes. Sometimes, this has been solely at the levels of informing and consulting, while in other cases, consultation, involvement and collaboration have taken place. None have deployed empowerment of the public, meaning that the final decision-making power lies in the hands of the public. Instead, in all cases, the city authority has always had the final say. Other recurring key stakeholders involved in the various policy cycle phases among all three cities include:

- Residents and businesses in and around areas of intervention;
- Visitors and users of areas of intervention;
- Various social interest organisations;
- PT operators;
- Emergency services; and
- Other government authorities.

Utrecht and Amsterdam have organised a public consultation process before releasing their policy documents to gather input from interested parties on the future policies. Rotterdam has not performed any public participation for the cycle phases agenda-setting and policy formulation. All three cities have informed, involved or collaborated with the public during the cycles decision-making and implementation. This has been in the form of gathering people's opinions before a preliminary design has been made, co-design of plans, or consultations on the preliminary designs before they are made final.

With regard to the evaluation of measures, Rotterdam and Amsterdam have informed and consulted with the public for two projects. The assessments were mostly focused on residents' and businesses' experiences with the measures. No evidence of participation was found for Utrecht for this phase, as most of the reviewed measures are still in progress. However, this does not necessarily mean participation during the evaluation will not occur. The public is always kept up-to-date on the progress with the plans. For instance, the Catharijnesingel project envisions an assessment of the effects of the closure in 2025 (City of Utrecht, n.d.). Furthermore, the participatory policy of the city states that the public is always involved in the feedback moments following the implementation regarding their opinions of the participation process in general, of whether the implementation matches the desired outcomes, and the public's satisfaction with the results (City of Utrecht, n.d.). In line with all that, both Utrecht and Amsterdam receive a ***score of (2)*** for involving the public in all crucial phases of the policy cycle, and Rotterdam – a ***score of (1)*** for the lack of participation during the phases agenda-setting and policy formulation.

Amsterdam - score 2 | Rotterdam - score 1 | Utrecht - score 2

Presence of data for monitoring impact and sufficient assessment mechanisms

Reviewed factors:
1) monitoring is envisioned/described in the policy document
2) presence of data for monitoring impact for each year
3) presence of rigorous assessment mechanisms

Autoluw and MP2040 explain how progress with the policies will be monitored. Utrecht's mobility plan even features an in-depth section explaining the concrete indicators which will be monitored and via what types of sources. As both agendas state, annual monitoring reports will be published to support policy choices and changes. On the contrary, the RMA does not elaborate on how monitoring of the measures and the plan will be done.

Amsterdam has published four general progress reports on the Agenda Autoluw, monitoring the same indicators for each year. This is also true for Utrecht's three dedicated progress reports on the MP2040. Data for both cities' key indicators is available for each year, allowing for structured and precise comparisons between the years and progress tracking. Rotterdam has not published monitoring reports dedicated to the RMA. However, progress on a limited number of mobility indicators for the inner city has been reported via the annual account reports during 2019-2021, detailing the progress for all policy fields in the city. Amsterdam and Utrecht both receive a ***score of (2)*** for this success factor, and Rotterdam receives a ***score of (1)*** due to the lack of a dedicated and coherent monitoring mechanism.

Amsterdam - score 2 | Rotterdam - score 1 | Utrecht - score 2

POLITICAL ASSESSMENT

Maximum possible score of (2) per success factor

Society and public administration trust and support the policy direction, and those who have put it forward

Reviewed factors:
1) policy direction and measures face only support and no opposition
2) policy direction and measures face only opposition and no support
3) mixed public responses to policy and measures – presence of both opponents and supporters

In all three cities, the measures of the policies have been facing both support and opposition from the public. For instance, in Amsterdam, some residents organised a protest against the Weesperstraat cut pilot, while another resident coalition has been widely supporting the Autoluw agenda and demanding more drastic measures. In Rotterdam, the Hofplein project has mostly met positive responses, while the 2020 experiments have gathered mostly negative connotations. In Utrecht, the expansion of the pedestrian area and the closure of Catharijnesingel have provoked mixed reactions. On that account, all three cities receive a ***score of 1*** from a maximum of 2 points due to the presence of both support and opposition to the policy.

Amsterdam - score 1 | Rotterdam - score 1 | Utrecht - score 1

Presence of a stable political landscape in the city and political survival of the governing body

Reviewed factors:
1) stability (no significant changes in the political positions of the leading parties in the City Council for the past 6 years)
2) political survival (no major changes concerning the mobility portfolio holders and mobility policy directions)

These two factors were previously separate but have now been combined into one success factor due to their interconnectedness. All three cities have a generally stable development in terms of political ideologies and positions. For instance, in Rotterdam, a right-wing party has been the top-voted one with the majority of the City Council seats since 2014. In Utrecht, the most seats are taken by a centre-left to left green party during the previous and the current mandate. In Amsterdam, the leading party has been changing, but a centre-left position has been generally dominating.

In 2022, Amsterdam and Rotterdam appointed new aldermen responsible for the mobility policy area and both are in the process of delivering new mobility policies. In contrast, Utrecht's mobility portfolio holder has not changed in the past three mandates. Thus, at the moment, Utrecht is not busy preparing a new policy and continues the work on the on-going mobility programmes.

In accordance with all reviewed above, Amsterdam and Rotterdam receive a ***score of 1*** out of 2 due to the changes concerning the portfolio holders and mobility policy directions. Utrecht receives a ***score of 2*** due to its stable political landscape and the lack of changes in the mobility policy direction.

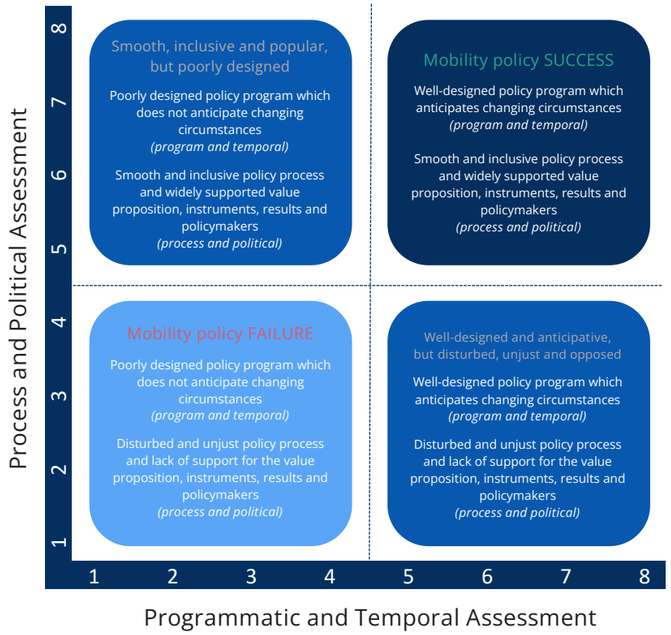
Amsterdam - score 1	Rotterdam - score 1	Utrecht - score 2

6.2 CHANGES IN THE ASSESSMENT METHODOLOGY

As a result of the comparative case study analysis, certain changes are implemented in the assessment mechanism. These changes and the scoring mechanism for each success factor are explained in **Appendix 12**.

For the programmatic assessment component (X axis), no judgement can be made on the success factor *'Policy produces positive social impacts (quantitative) in the long-term'*. Thus, this factor is no longer considered as part of the final assessment. In addition, the success factor *'Policy documents have a clear and straightforward direction which is understood by both civilians and public administration throughout the whole policy cycle'* previously belonging to the political assessment has been retitled to *'Policy documents have a clear and straightforward structure'* and repositioned to the programmatic assessment as it relates to whether the policy has a well-formulated and developed public value proposition. Following these changes, the programmatic assessment component still ends up with four success factors corresponding to it, each allowing for a maximum score of 1. No changes have been applied for the temporal assessment component (X axis), and the maximum score per success factor remains 2.

For the process assessment (Y axis), no observations have been made for two success factors due to the lack of enough information to make a sufficient judgement: *'Presence of enough capacity (personnel) and knowledge throughout the policy cycle'* and *'Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments'*. Therefore, these two success factors are not considered as part of the final assessment. This leaves the process component with 2 remaining success factors, each allowing for a maximum score of 2. Following the paraphrasing and reallocation of one success factor, the political assessment (Y axis) has been left with 3 remaining success factors. Due to their interrelation and to ease the final assessment process, the success factors *'Presence of a stable political landscape in the city'* and *'Political survival of the governing body'* have been merged. This leaves the political component with 2 success factors, each allowing for a maximum score of 2.



All changes considered, each assessment component remains with a maximum possible score of 4, and each axis with a maximum score of 8. However, the characteristics of each quadrant of the final policy success matrix have been slightly adapted (see figure 23). **Appendix 12** details the characteristics of each quadrant.

Figure 23. Mobility policy success assessment matrix used for the final assessment (figure by the author).

6.3 POSITIONING ON THE MATRIX

The tables below show the total score of each city for the X and Y axes of the mobility policy success assessment matrix developed in chapter 4. It can be observed that in terms of the programmatic and temporal success factors (X axis), Rotterdam is doing the best among the three cities. For the process and political factors (Y axis), Utrecht is taking the lead.

	Amsterdam	Rotterdam	Utrecht	Max. possible score
PROGRAMMATIC	3.5	4	3.5	4
TEMPORAL	3	3	3	4
Total score X axis	**6.5**	**7**	**6.5**	8

Table 20. Scores for the X axis of the mobility policy success assessment matrix.

	Amsterdam	Rotterdam	Utrecht	Max. possible score
PROCESS	4	2	4	4
POLITICAL	2	2	3	4
Total score Y axis	**6**	**4**	**7**	8

Table 21. Scores for the Y axis of the mobility policy success assessment matrix.

Based on their final X and Y axis scores, the three cities have been positioned on the matrix (see figure 24). The results show that Utrecht scores highest, followed by Amsterdam and then Rotterdam. Both Utrecht and Amsterdam belong to the quadrant *'Mobility policy SUCCESS'*. Rotterdam, on the other hand, belongs to the quadrant *'Well-designed and anticipative, but disturbed, unjust and opposed'* due to its lower scores on the factors belonging to the process and political assessment components compared with the other two cities. There are certain factors on which all three cities have received full scores, and can be thus considered successful in them, namely:

- Mobility policy program is delivered in consideration with other related policy areas (programmatic);
- Policy program features mutually supportive goals working towards the achievement of the overarching policy goal (programmatic);
- Integration of several policy instruments of different nature and scales (programmatic); and
- Framing of general policy goals to anticipate changing circumstances on the lower geographical scales (temporal).

All those factors belong on the X axis of the matrix making their overall scores on the X axis slightly higher than their scores on the Y axis corresponding to the process and political components.

There are two factors where none of the cities have received full scores which entails that improvement is desired in these areas, namely:

- Presence of sufficient and dedicated local funding anticipating the changing needs for sustainable mobility in cities (temporal); and
- Society and public administration trust and support the policy direction, and those who have put it forward (political).

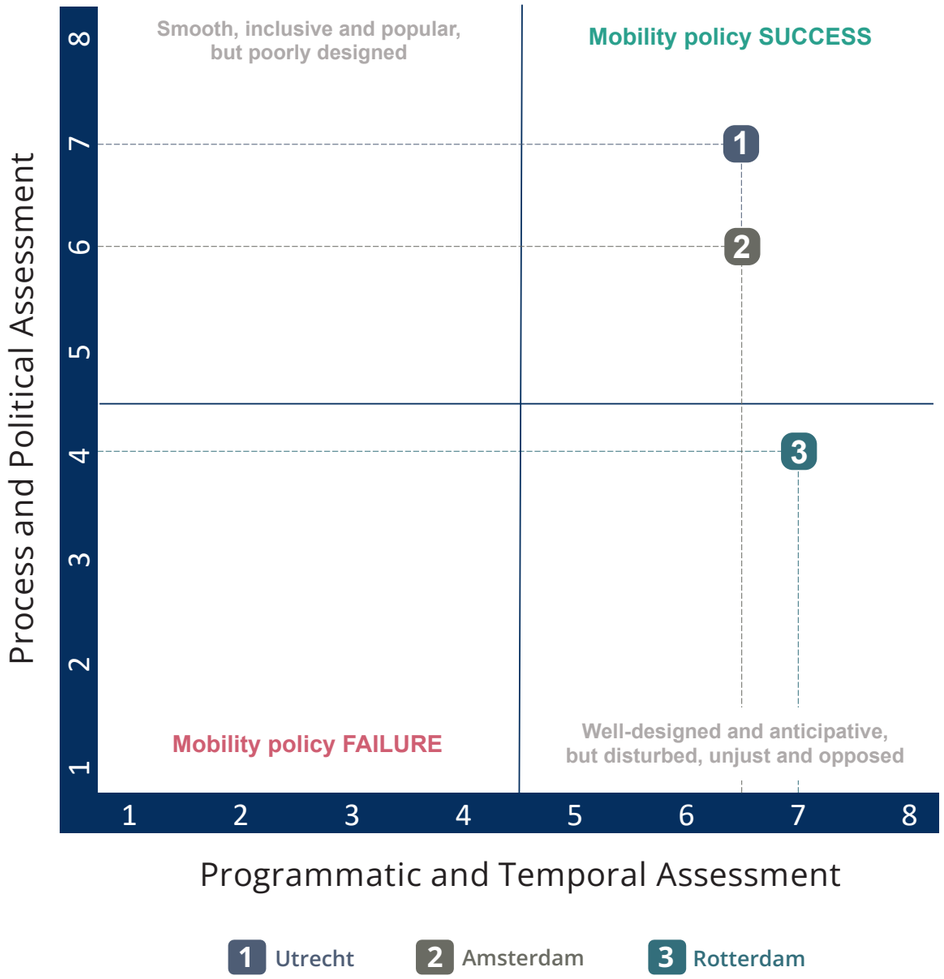


Figure 24. Amsterdam, Rotterdam and Utrecht - positioning on the mobility policy success assessment matrix.

Certain policy instruments have been met with both opposition and support in all three cities. In the case of Amsterdam, the whole policy agenda has even received wide public attention in the form of mixed reactions to it. Therefore, it cannot be considered that the transitions and policies in general have been widely supported by the public, which is one of the characteristics of the *'Mobility policy SUCCESS'* quadrant.

There are two factors where one city excels compared to the other two cities. Utrecht scored highest for the factor *'Presence of a stable political landscape in the city and political survival of the governing body'* (political), and Rotterdam – for the factor *'Policy documents have a clear and straightforward structure'* (programmatic), making Rotterdam the highest scoring city on the X axis, as on all other programmatic and temporal components the three cities scored the same points.

07

CONCLUSIONS AND RECOMMENDATIONS

This chapter concludes this thesis by answering the main question posed in the introduction. It then provides the recommendations for practice, the limitations of this research study and the recommendations for further research based on the research outcomes and the opinions of the interviewed experts.

© Micheile Henderson · 10 February 2020 · Rotterdam Centraal Station

7.1 RESEARCH OUTCOMES

This thesis had the goal to assess the extent to which the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht could be considered *'policy success stories'.* It applied theory from transition, transport, policy and public participation studies. Due to the existing gap in the current policy and transport academic fields lacking an assessment methodology focused on mobility transition policies, it developed a state-of-the-art mobility policy success assessment matrix with 14 corresponding success factors to consider when assessing the success of mobility transitions evoked by dedicated mobility policies. The compilation of the success factors benefitted from theoretical contributions through a literature review and practice-based contributions collected through the expert opinions and experiences (i.e., individual constructions) of the interviewed municipal representatives.

Furthermore, due to the gaps in current transport literature mostly focusing on case studies and assessments at the city-wide level, it enriched the transport academic field with context-specific knowledge by investigating sustainable mobility transitions at a particular level of intervention, namely, the city centres of three Dutch cities. It firstly analysed the landscape exogenous trends impacting the inner city mobility transition regimes of Amsterdam, Rotterdam and Utrecht. Through case study research, it explored the mobility transition regime developments at the inner city level by delving into the most recent mobility policy documents of the three cities, their corresponding push and pull measures and their effects, and the stakeholders and public participation processes. With the findings from the explorations on the landscape and regime levels, it derived insights for the scoring of each city on the identified success factors. The three cities were then compared on each factor of the matrix to gather input for the final assessment, which encompassed placing them on the mobility policy success assessment matrix. Following their placement on the matrix, the main question of this study can now be addressed:

To what extent could the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht be considered 'mobility policy success stories'?

As visible from the matrix, Utrecht can be considered the most successful in terms of its mobility transition with the accompanying policy Mobiliteitsplan 2040. Compared with the other two cities, this is largely due to its higher score of 2 on the political component *'Presence of a stable political landscape in the city and political survival of the governing body'*, where the other two cities have scored 1. Thus, Utrecht is just 1 score higher on the Y axis than Amsterdam.

Amsterdam and Utrecht can be considered more successful in their mobility policies and transitions than Rotterdam, as the port city still belongs in the bottom right quadrant of the matrix with a *well-designed and anticipative policy but a disturbed, unjust and opposed mobility transition and policy process*. Rotterdam has the highest score on the X axis among all three, mainly owing to its higher scoring on the factor *'Policy documents have a clear and straightforward structure'* due to a clear structure and overview of the planned measures in its RMA policy document. Despite being the most successful among all three on the X-axis components, Rotterdam ranks lowest on the Y-axis. This is largely owing to the lack of public participation processes during the cycle phases of agenda-setting and policy formulation and the lack of a dedicated and coherent monitoring mechanism for the RMA agenda.

Amsterdam places 1 point lower on the Y axis than Utrecht and is equally successful as Utrecht on the X axis. On the Y axis, Amsterdam has received 1 point less than Utrecht on the factor *'Presence of a stable political landscape in the city and political survival of the governing body'*. The city has recently appointed a new alderman who will deliver a new mobility policy, which is a significant change in the local mobility political landscape and could mean that Autoluw's priorities and ambitions are disregarded and discontinued.

In light of all that, it can be concluded that none of the three cities has achieved ultimate success with full scores on all the success factors so far. However, none also belong to the quadrant *'Mobility policy FAILURE'*. For that, the next chapter offers more insight into how these cities could increase the success rate of their policy and transition approaches by looking at the identified gaps in their current approach and into practices they should continue pursuing.

7.2 RECOMMENDATIONS FOR PRACTICE

The sections below delve into each city by reflecting on the aspects where they could improve and those they should consider successful, thus, continuing their already established practices with respect to them.

Utrecht

Utrecht ranks the highest among all three cities and can be, therefore, considered the most successful in terms of the on-going mobility transition and its corresponding policy. On the X axis, Rotterdam scores 0.5 points higher, but Utrecht leads on the Y axis, with a 1-point difference from Amsterdam.

There are three factors where Utrecht could improve. In terms of the programmatic component, Utrecht's Mobiliteitsplan 2040 could be improved by offering a concise summary of the planned measures, which could help increase its readability and comprehensibility, considering that this is the longest document among all three reviewed policies. For the X axis components, Utrecht has not received full points for its mobility budget due to its high reliance on external funding sources. Finally, regarding the public's trust and support for the policy, some of the measures are facing opposition, which could, in turn, impact the stability of the local political landscape and the survival of the governing body. However, this has not been the case in Utrecht so far, as the city has scored highest on the political factor *'Presence of a stable political landscape in the city and political survival of the governing body'*. This is explained by a relatively stable political landscape and a mobility portfolio holder who has not changed during the past three mandates indicating the public's support for the mobility policy direction and its governors.

Amsterdam

Amsterdam ranks the same as Utrecht on the X axis, and 1 point lower on the Y axis, positioning the city almost in the middle of the *'Mobility policy SUCCESS'* quadrant. There are four areas of improvement for this city based on the assessment. On the X axis, Amsterdam ranks 0.5 points lower than Rotterdam due to the slightly chaotic structure of Autoluw, which has an appendix with a detailed summary of the planned measures, but those are not structured in relation to the five original sub-goals of the policy in the main body of the document making it confusing for the reader.

Another aspect for improvement is the mobility budget situation, as is the case with the other two cities. Not only is the overall mobility budget declining, but the city is also required to rely on external sources of funding for some of the planned measures in Autoluw. This increases the uncertainty around the implementation of these measures. The changing political direction of the city is another aspect contributing to the uncertainty around the implementation of the originally planned measures. Amsterdam is experiencing a shift in the local political climate due to the changes in the leading political party and the mobility portfolio holder.

Similarly to Rotterdam, Amsterdam is in the process of delivering a new mobility agenda, hampering the potential of Autoluw to pursue the mid- and long-term objectives set in it. In spite of that, this new direction could benefit from the experiences of the city with Autoluw to potentially gather wider public support. Autoluw received extensive public traction with both strong supporters in the face of neighbourhood coalitions demanding even more drastic changes, and opposition in the form of street neighbourhood protests.

Rotterdam

Rotterdam ranks the highest among all cities on the X axis but lowest on the Y axis, making its overall score the lowest and taking away its spot from the quadrant *'Mobility policy SUCCESS'*. There are five areas where Rotterdam could improve to increase its success rates. The most critical of those are the two process factors where Rotterdam scored the lowest among the three cities. Due to the lack of public participation processes (higher-level than just inform) during the agenda-setting and policy formulation phases of the RMA, Rotterdam received 1 point less than Amsterdam and Utrecht on the factor *'Stakeholders affected by the policy actively collaborated with policymakers throughout the different phases of the policy cycle'*. There are also no RMA monitoring reports on the progress with the agenda implementation and its effects, as is the case with Autoluw and MP2040. The definition of indicators to track progress, the availability of data on these indicators allowing for precise comparisons between the years and the existence of a dedicated and coherent monitoring mechanism have been crucial components in the policy evaluation phase. These allow to sufficiently track and evaluate the changes, and potentially, implement adjustments on the policy and measures' directions and support future policy choices. As a consequence, 1 point is taken away from Rotterdam's assessment on the factor *'Presence of data for monitoring impact and sufficient assessment mechanisms'* (max. 2 points).

Similarly to Amsterdam and Utrecht, Rotterdam can further improve on the public's acceptance and support for the policy direction and on the mobility budget situation. Integrating the mobility budget into the wider urban development theme in the city's annual accounts hinders the transparency of how mobility funds have been spent. Finally, despite the rather stable political landscape in Rotterdam, the changes in the mobility portfolio holder are complemented by a new mobility policy direction as well. As established through the interviews, frequent changes in the policy direction could make it more difficult to pursue longer-term systemic change of a policy, as often the corresponding measures (especially those greater in required funds and scale of intervention) take longer than 4 years to be realised and produce effects.

7.3 LIMITATIONS

Three of the fourteen success factors of the mobility policy success assessment methodology were left unexplored in this thesis, namely:

1) Policy produces positive social impacts (quantitative) in the long-term;

2) Presence of enough capacity (personnel) and knowledge throughout the policy cycle; and

3) Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments.

These factors were left without a score for the three cities and not considered as part of the final matrix assessment, as not enough information was obtained to make a sufficient judgement on them. Hence, this thesis could not provide a complete assessment of the cities' overall success. The methodology had to be adapted for the final assessment by leaving out those three factors. It is essential to explore all relevant factors for a complete assessment of the success degree of cities' mobility transitions and corresponding policy directions.

One of the unexplored factors is of great importance, as established through the interviews, namely, the assessment of the quantitative impacts of the policies in the long term. Positive quantitative impacts on indicators such as the modal split could help gather further reinforcement for the measures and their reproduction and continuation as part of a new policy direction. Negative quantitative impacts could help cities identify gaps in the current direction and implement adjustments for future improvements. Despite the obvious need to provide judgement on this factor, this thesis failed to do so for two reasons. Firstly, the investigated policies and measures were formulated and started during a period where major landscape and regime developments have substantially impacted mobility patterns in Dutch cities – the global coronavirus pandemic, the national public transport staff shortages and strikes, and extreme weather conditions. As a result, all cities have reported difficulties in assessing whether the modal split changes during the past couple of years can be attributed to the mobility measures from the policy packages. Secondly, it could not yet be assessed whether these measures have had an impact in the long-term as many of them are still being implemented or have been completed during the past 2-3 years. Thus, no observations can yet be made for the long-term, as classified by the three agendas, in 10-20 years' time.

The other two factors, (2) and (3), require an exploration of the internal working processes in the municipal departments responsible for setting and implementing the mobility policy. Not enough evidence was collected from the interviews and various online sources to provide sufficient observation on those factors. They require a larger-scale investigation into the internal processes, for example, by surveying or interviewing all employees at these municipalities working on the mobility policy.

Next to the unexplored factors, albeit being an important and integral part of the transportation system of cities, the field of city logistics has been mostly left out of the scope of this research to keep the analysis as focused and concise as possible. This has been a conscious choice made by the author of the thesis.

Lastly, in the early stages of writing this thesis, the author planned to organise a focus group with all experts interviewed for this study with two objectives:

- to stimulate a discussion on the results from this thesis and reconfirm interviews and desk research findings;
- to stimulate knowledge transfer and cooperation between the involved city authorities.

However, this was not achieved due to a number of logistical, planning and personal difficulties encountered during the course of writing this thesis.

7.4 RECOMMENDATIONS FOR FURTHER RESEARCH

Considering the limitations, follow-up studies are suggested on the three success factors this thesis failed to capture. Ideally, for the success factors, *'Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments'* and *'Presence of enough capacity (personnel) and knowledge throughout the policy cycle'*, a follow-up study will be undertaken in the near future grouping the two topics. It could be a qualitative study integrating two data collection methods – surveys and interviews with city authority representatives from Amsterdam, Rotterdam and Utrecht involved in formulating and implementing the policies Autoluw, RMA and MP2040. The study will investigate the internal working processes of the relevant municipal departments in relation to the three mobility policies. Another follow-up study is suggested concerning the success factor *'Policy produces positive social impacts (quantitative) in the long-term'*. This study is to be conducted in the distant future (i.e., in a few years' time) when enough evidence is available on the impacts of the inner city mobility measures corresponding to the three policies.

Following these studies, the final assessment of the mobility policies' success can be completed using the findings from this thesis, the study on the internal working processes and the long-term quantitative impacts. However, as emphasised at the beginning of this study, an initially successful change can turn out to be a failure in the long term and vice versa (van Thiel, 2014). Therefore, cities should strive to continuously monitor and evaluate their policy programs, measures and processes to identify areas for improvement and areas needing continued support from future policy directions.

Another topic for future research which could expand on the knowledge from this thesis is *"A comparative analysis of the former and current mobility policy direction of the cities of Amsterdam and Rotterdam"*. As identified, Rotterdam and Amsterdam are in the process of delivering their new mobility policies with the recent arrival of their new city administration. Thus, it could be beneficial for the city authorities to assess the way the current and former policy approaches compare in terms of policy goals and instruments (vision), stakeholders and public participation processes, push and pull measures (e.g., Which measures are continued? Which measures are newly introduced? Which city areas are given priority to? What types of measures are given priority to?), funding and monitoring mechanisms, among others. It could be further interesting to explore the degree to which the differences between the current and former mobility policy approaches can be attributed to the city's political landscape and the changes in the municipal executive representative responsible for the mobility policy area.

Some interviewees also suggested topics that could interest their administrations for further exploration. For instance, the strategic mobility advisor from Rotterdam mentioned that the inner city of Rotterdam is divided into smaller districts. As clarified by the expert, they have significant differences in demographics. Therefore, it could be useful to go a scale lower and analyse for each district the mobility patterns, the locals' perceptions of the mobility transition, and other relevant variables which could impact Rotterdam's pursuit of a mobility transition there.

Another suggestion was provided by the senior public space designer from the city of Utrecht, who stressed the importance of space scarcity in cities and the difficulty in defining how freed-up space from car infrastructure (e.g., removed on-street parking and closure of lanes to car traffic) should be programmed. This urban design question requires, among other aspects, an exploration of the public space functions needs of cities, citizens and local businesses and redesign/reprogram public participatory processes on the street level.

Last but not least, the interviewee from the University of Amsterdam stated that there should not only be a comparison between cities but also between the current mobility transition regime of a city and the regime decades ago. The goal of such a study would be to assess the city's long-term transition progress, also linking to the unexplored success factor relating to the long-term impacts of policy choices.

08

BIBLIOGRAPHY

© Chester Ho · 16 August 2019 · Happy Polish children playing with bubbles in the centre square

A

Amri, M. M., & Logan, D. (2021). Policy responses to COVID-19 present a window of opportunity for a paradigm shift in global health policy: An application of the Multiple Streams Framework as a heuristic. *Global public health, 16*(8-9), 1187–1197. doi:10.1080/17441692.2021.1925942

Angel, S., Blei, A. M., Parent, J., Lamson-Hall, P., Sánchez, N. G., Civco, D. L., . . . Thom, K. (2016). *Atlas of Urban Expansion - 2016 Edition* (Vol. 1: Areas and Densities). New York: New York University. Retrieved from https://www.lincolninst.edu/app/uploads/legacy-files/pubfiles/atlas-of-urban-expansion-2016-volume-1-full.pdf

Arends, J. (2023). *ICT-gebruik bij personen*. Retrieved from CBS: https://longreads.cbs.nl/ict-kennis-en-economie-2023/ict-gebruik-bij-personen/

AT5. (2023, June 22). *Kattenburgers protesteren tegen knip en blokkeren straat: "Het loopt uit de hand"*. Retrieved from AT5: https://www.at5.nl/artikelen/221159/kattenburgers-protesteren-tegen-knip-en-blokkeren-straat-het-loopt-uit-de-hand

Attard, M. (2020). Mobility justice in urban transport - the case of Malta. *Transportation Research Procedia, 45*, 352-359. doi:10.1016/j.trpro.2020.03.026

Autoluw Nu. (n.d.). *About us.* Retrieved from Autoluw Nu: https://www.autoluw.nu/over-ons/

B

Bailey, M. T. (1992). Do Physicists Use Case Studies? Thoughts on Public Administration Research. *Public Administration Review, 52*(1), 47-54. doi:10.2307/976545

Banister, D. (2005). *Unsustainable transport.* London: Routledge.

Banister, D. (2019). Transport for all. *Transport Reviews, 39*(3), 289-292. doi:10.1080/01441647.2019.1582905

Batty, P., Palacin, R., & González-Gil, A. (2015). Challenges and opportunities in developing urban modal shift. *Travel Behaviour and Society, 2*(2), 109-123. doi:10.1016/j.tbs.2014.12.001

Belaïd, F., & Al-Sarihi, A. (2024). Saudi Arabia energy transition in a post-paris agreement era: An analysis with a multi-level perspective approach. *Research in International Business and Finance, 67*(PB). doi:10.1016/j.ribaf.2023.102086

Bende. (2020). *Experiment Oude Westen Gemeente Rotterdam*. Retrieved from Bende Rotterdam: https://benderotterdam.nl/experiment-oude-westen-gemeente-rotterdam/

Berger, G., Feindt, P. H., Holden, E., & Rubik, F. (2014). Sustainable Mobility—Challenges for a Complex Transition. *Journal of Environmental Policy & Planning, 16*(3), 303-320. doi:10.1080/1523908X.2014.954077

Binnenstad 030. (2021, January 15). *Mobiliteitsplan 2040 / Parkeervisie – dien een zienswijze (mee) in!* Retrieved from Binnenstad 030: https://binnenstad030.wordpress.com/2021/01/15/mobiliteitsplan-2040-parkeervisie-zienswijze/

Black, C. S., & Schreffler, E. N. (2010). Understanding Transport Demand Management and Its Role in Delivery of Sustainable Urban Transport. *Transportation Research Record, 2163*(1), 81-88. doi:10.3141/2163-09

Black, W. R. (2010). *Sustainable transportation: Problems and solutions.* New York: Guilford Press.

Black, W. R., & Nijkamp, P. (2002). *Social change and sustainable transport.* Bloomington: Indiana University Press.

Blättler, K., Wallimann, H., & von Arx, W. (2024). Free public transport to the destination: A causal analysis of tourists' travel mode choice. *Transportation Research Part A: Policy and Practice, 187*, 104166. doi:10.1016/j.tra.2024.104166

Böhler-Baedeker, S., & Lindenau, M. (2016). *CH4LLENGE – Addressing key challenges of sustainable urban mobility planning: Publishable final report.* Rupprecht Consult. CH4LLENGE Consortium and Rupprecht Consult Forschung & Beratung GmbH. Retrieved from https://www.rupprecht-consult.eu/fileadmin/migratedRupprechtAssets/Documents/Ch4llenge_final_report.pdf

Boin, A., 't Hart, P., & McConnell, A. (2009). Crisis exploitation: political and policy impacts of framing contests. *Journal of European Public Policy, 16*(1), 81-106. doi:10.1080/13501760802453221

Broaddus, A., Litman, T., & Menon, G. (2009). *Transportation Demand Management*. Eschborn: GTZ. Retrieved from https://city2030.org.ua/sites/default/files/documents/GIZ_SUTP_TM_Transportation-Demand-Management_EN.pdf

Broman, G. I., & Robèrt, K.-H. (2017). A framework for strategic sustainable development. *Journal of Cleaner Production, 140*, 17-31. doi:10.1016/j.jclepro.2015.10.121

Bryman, A. (2016). *Social research methods* (5th ed.). Oxford: Oxford University Press.

Bryson, J. M., Crosby, B. C., & Bloomberg, L. (2014). Public Value Governance: Moving Beyond Traditional Public Administration and the New Public Management. *Public Administration Review, 74*(4), 445-456. doi:10.1111/puar.12238

Budnitz, H. (2019). Sustainable Mobility. In W. Leal Filho, *Encyclopedia of Sustainability in Higher Education* (pp. 1833–1842). Springer, Cham. doi:10.1007/978-3-030-11352-0_67

Buehler, R., Pucher, J., Gerike, R., & Götschi, T. (2017). Reducing car dependence in the heart of Europe: lessons from Germany, Austria, and Switzerland. *Transport Reviews, 37*(1), 4-28. doi:10.1080/01441647.2016.1177799

Bulkeley, H. (2010). Cities and the Governing of Climate Change. *Annual Review of Environment and Resources, 35*, 229-253. doi:10.1146/annurev-environ-072809-101747

C

Cambridge University Press & Assessment. (n.d.). *Teleworking - definition*. Retrieved from Cambridge Dictionary: https://dictionary.cambridge.org/dictionary/english/teleworking

Cambridge University Press & Assessment. (n.d.). *Woonerf - definition*. Retrieved from Cambridge Dictionary: https://dictionary.cambridge.org/dictionary/english/woonerf

Casañ, M. J., Alier, M., & Llorens, A. (2021). A Collaborative Learning Activity to Analyze the Sustainability of an Innovation Using PESTLE. *Sustainability, 13*(16), 8756. doi:10.3390/su13168756

Castillo, H., & Pitfield, D. E. (2010). ELASTIC – A methodological framework for identifying and selecting sustainable transport indicators. *Transportation Research Part D: Transport and Environment, 15*(4), 179-188. doi:10.1016/j.trd.2009.09.002

Cavallaro, F., & Dianin, A. (2020). Cross-border public transport as a driver for tourism in the Alps. *Transportation Research Procedia, 48*, 2446-2461. doi:10.1016/j.trpro.2020.08.262

CBS. (2022, March 29). *Government deficit for 2021 down to 2.5 percent of GDP.* Retrieved from CBS: https://www.cbs.nl/en-gb/news/2022/12/government-deficit-for-2021-down-to-2-5-percent-of-gdp

CBS. (2022, August 26). *Verplaatsingen in de gemeente Utrecht, 2020.* Retrieved from CBS: https://www.cbs.nl/nl-nl/maatwerk/2022/34/verplaatsingen-in-de-gemeente-utrecht-2020

CBS. (2023, April 26). *Bodemgebruik; uitgebreide gebruiksvorm, per gemeente.* Retrieved from CBS: https://opendata.cbs.nl/#/CBS/nl/dataset/70262ned/table

CBS. (2023, December 18). *Gemeenten boeken een overschot van 3,7 miljard euro voor 2022.* Retrieved from CBS: https://www.cbs.nl/nl-nl/nieuws/2023/51/gemeenten-boeken-een-overschot-van-3-7-miljard-euro-voor-2022

CBS. (2023, July 5). *Onderweg in Nederland (ODiN) 2022 - Onderzoeksbeschrijving.* Retrieved from CBS: https://www.cbs.nl/nl-nl/longread/rapportages/2023/onderweg-in-nederland--odin---2022-onderzoeksbeschrijving

CBS. (2024). *Elderly people.* Retrieved from CBS: https://www.cbs.nl/en-gb/visualisations/dashboard-population/age/elderly-people

CBS. (2024, June 19). *Government Finance Statistics; key figures 1995-2023.* Retrieved from CBS: https://opendata.cbs.nl/#/CBS/en/dataset/84114ENG/table?dl=6508F

CBS. (2024). *Inwoners per gemeente.* Retrieved from CBS: https://www.cbs.nl/nl-nl/visualisaties/dashboard-bevolking/regionaal/inwoners

CBS. (2024, March 15). *Over half of Dutch people work from home sometimes.* Retrieved from CBS: https://www.cbs.nl/en-gb/news/2024/11/over-half-of-dutch-people-work-from-home-sometimes

CBS. (2024, August 7). *Population counter.* Retrieved from CBS: https://www.cbs.nl/en-gb/visualisations/dashboard-population/population-counter

Chinellato, M., Staelens, P., Wennberg, H., Sundberg, R., Böhler, S., Brand, L., . . . Gertheis, A. (2017). *Users' needs analysis on SUMP take up.* SUMPs-Up. Retrieved from https://sumps-up.eu/fileadmin/user_upload/Tools_and_Resources/Publications_and_reports/Needs_Assessment/SUMPs-Up_Users_needs_analysis_on_SUMP_take-up-min.pdf

Christodoulou, A., & Cullinane, K. (2019). Identifying the Main Opportunities and Challenges from the Implementation of a Port Energy Management System: A SWOT/PESTLE Analysis. *Sustainability, 11*(21), 6046. doi:10.3390/su11216046

Christidis, P., Navajas, E. C., Brons, M., Schade, B., Mongelli, I., & Soria Ramirez, A. (2014). *Future employment in transport: Analysis of labour supply and demand.* Luxembourg: Publications Office of the European Union. doi:10.2791/489554

City of Amsterdam. (2019). *Amsterdamse Thermometer van de Bereikbaarheid 2019.* Retrieved from https://openresearch.amsterdam/nl/page/87828/amsterdamse-thermometer-van-de-bereikbaarheid-2019

City of Amsterdam. (2019). *Eindevaluatie Pilot Aanpak Verkeersoverlast Oudezijde.* City of Amsterdam.

City of Amsterdam. (2019). *Het gesprek met de stad over de Agenda Amsterdam Autoluw.* City of Amsterdam. Retrieved from https://www.amsterdam.nl/verkeer-vervoer/agenda-amsterdam-autoluw/gesprek-stad/

City of Amsterdam. (2019). *Summary - Agenda for a liveable and accessible city.* City of Amsterdam.

City of Amsterdam. (2020). *Agenda Amsterdam Autoluw.* Amsterdam: City of Amsterdam.

City of Amsterdam. (2021). *Jaarverslag 2020.* Amsterdam: City of Amsterdam. Retrieved from https://www.amsterdam.nl/bestuur-organisatie/financien/jaarverslag-2020/

City of Amsterdam. (2022). *Monitor Autoluw Indicatoren 2020.* City of Amsterdam. Retrieved from https://openresearch.amsterdam/en/media/inline/2022/2/1/monitor_autoluw.pdf

City of Amsterdam. (2023). *Jaarverslag 2022.* Amsterdam: City of Amsterdam. Retrieved from https://www.amsterdam.nl/bestuur-organisatie/financien/jaarverslag-2022/

City of Amsterdam. (2023, March). *Meer ruimte, minder parkeervakken.* Retrieved from Amsterdam Autoluw Magazine: https://amsterdam-autoluw-magazine.readz.com/editie-5-meer-ruimte-minder-parkeerplekken

City of Amsterdam. (2023). *Monitor Autoluw Indicatoren 2021.* City of Amsterdam. Retrieved from https://openresearch.amsterdam/en/media/inline/2023/3/13/monitor_autoluw_febr_2023.pdf

City of Amsterdam. (2023). *Plan van aanpak - Pilot knip Weesperstraat.* Retrieved from https://openresearch.amsterdam/nl/page/94784/plan-van-aanpak---pilot-knip-weesperstraat

City of Amsterdam. (2023). *Terugkoppeling en lessen focusgroepen Pilot Weesperstraat.* Retrieved from https://openresearch.amsterdam/nl/page/106125/terugkoppeling-en-lessen-focusgroepen-pilot-weesperstraat

City of Amsterdam. (2024, April 17). *Verkeer in cijfers.* Retrieved from Onderzoek Amsterdam: https://onderzoek.amsterdam.nl/artikel/verkeer-in-cijfers-2024

City of Amsterdam. (2024, March). *Zo snel mogelijk veiliger met 30 km per uur op de wegen in Amsterdam.* Retrieved from Amsterdam Autoluw Magazine: https://amsterdam-autoluw-magazine.readz.com/editie-7-30km

City of Amsterdam. (n.d.). *30 km/u in de stad.* Retrieved from https://www.amsterdam.nl/30-km-u-in-de-stad

City of Amsterdam. (n.d.). *Amsterdam's city council.* Retrieved from https://www.amsterdam.nl/en/governance/city-council/

City of Amsterdam. (n.d.). *Digital Urban Planning Lab.* Retrieved from Amsterdam: https://www.amsterdam.nl/innovatie/digitalisering-technologie/digitalisering/digital-urban-planning/

City of Amsterdam. (n.d.). *Innovatieagenda 2023: Mobiliteit.* Retrieved from https://openresearch.amsterdam/nl/overview/98096

City of Amsterdam. (n.d.). *Weesperstraat-Valkenburgerstraat en omgeving: minder auto's en groener.* Retrieved from https://www.amsterdam.nl/projecten/weesperstraat-valkenburgerstraat/?vkurl=pilotweesperstraat

City of Amsterdam. (n.d.). *Weteringbuurt en Noorderbuurt.* Retrieved from https://www.amsterdam.nl/projecten/vijzelbuurt/weteringbuurt-noorderbuurt/

City of Rotterdam. (2019). *Startnotitie Rotterdamse MobiliteitsAanpak.* Retrieved from https://rotterdam.groenlinks.nl/sites/groenlinks/files/downloads/newsarticle/Startnotitie%20RMA%20%281%29.pdf

City of Rotterdam. (2020). *Effecten en maatregelen Covid-19.* Retrieved from Wat doet de gemeente: https://watdoetdegemeente.rotterdam.nl/jaarstukken2020/paragrafen/bedrijfsvoering/08-corona/

City of Rotterdam. (2020). *Rotterdamse MobiliteitsAanpak.* Retrieved from https://tda-mobility.org/wp-content/uploads/2021/04/Rotterdamse-Mobiliteitsaanpak-Dutch.pdf

City of Rotterdam. (2020, May 25). *Ruimte voor fietsers rondom de Erasmusbrug.* Retrieved from Persberichten Rotterdam: https://persberichtenrotterdam.nl/persberichten/ruimte-voor-fietsers-rondom-de-erasmusbrug/

City of Rotterdam. (2020). *Verkeer en vervoer - Beheer.* Retrieved from Wat doet de gemeente: https://watdoetdegemeente.rotterdam.nl/jaarstukken2020/programmas/beheer-van-de-stad/verkeer-en-vervoer-beheer/

City of Rotterdam. (2021). *Effecten en maatregelen Covid-19.* Retrieved from Wat doet de gemeente: https://watdoetdegemeente.rotterdam.nl/jaarstukken2021/paragrafen/bedrijfsvoering/08-corona/

City of Rotterdam. (2021). *Uitvoerings programma Mobiliteit.* City of Rotterdam.

City of Rotterdam. (2021). *Verkeersaanpak Maastunnelroute - Bijlage - Eindevaluatie 2020-2021.* Retrieved from https://rotterdam.raadsinformatie.nl/document/10976685/2/

City of Rotterdam. (2022). *Financiële hoofdlijnen van de Jaarstukken 2021.* City of Rotterdam. Retrieved from https://watdoetdegemeente.rotterdam.nl/jaarstukken2021/hoofdlijnen/04-financiele-hoofdlijnen/Financiele-hfdlijnen-ROTD-2205-Voortgang-2021-v07b.pdf

City of Rotterdam. (2022). *Verbonden partijen.* Retrieved from Wat doet de gemeente: https://watdoetdegemeente.rotterdam.nl/jaarstukken2022/paragrafen/verbonden-partijen/

City of Rotterdam. (2022). *Verkeer en vervoer - Ontwikkeling.* Retrieved from Wat doet de gemeente: https://watdoetdegemeente.rotterdam.nl/jaarstukken2021/programmas/verkeer-en-vervoer/verkeer-en-vervoer-ontwik/

City of Rotterdam. (2023). *Financieel beeld 2023.* Retrieved from Wat doet de gemeente: https://watdoetdegemeente.rotterdam.nl/apps/jaarstukken2023/hoofdlijnen/01-voortgang/

City of Rotterdam. (2023). *Onderweg in de Metropoolregio 2018-2022.* Retrieved from https://onderzoek010.nl/news/Onderweg-in-de-Metropoolregio-2018---2022/412

City of Rotterdam. (n.d.). *Digitale Stad.* Retrieved from Rotterdam: https://www.rotterdam.nl/digitale-stad

City of Rotterdam. (n.d.). *Innovaties.* Retrieved from https://www.rotterdam.nl/innovaties

City of Rotterdam. (n.d.). *Veilig vooruit.* Retrieved from https://www.rotterdam.nl/30-kmu-in-rotterdam

City of Rotterdam. (n.d.). *Verkeer op Maastunneltraverse: nu en in de toekomst.* Retrieved from https://www.rotterdam.nl/verkeer-op-maastunneltraverse-nu-en-in-de-toekomst

City of Rotterdam. (n.d.). *Zomerafsluitingen Centrum.* Retrieved from https://www.rotterdam.nl/zomerafsluitingen-centrum

City of Utrecht. (2020). *Jaarstukken 2020 van de Gemeente Utrecht.* Retrieved from Utrecht Jaarverslag: https://utrecht.jaarverslag-2020.nl/

City of Utrecht. (2021, October 15). *Grootste fietsenstalling in Utrechtse binnenstad geopend.* Retrieved from https://www.utrecht.nl/nieuws/archief/nieuwsbericht-gemeente-utrecht/grootste-fietsenstalling-in-utrechtse-binnenstad-geopend

City of Utrecht. (2021, December 22). *Groter voetgangersgebied en meer autovrije straten binnenstad.* Retrieved from https://www.utrecht.nl/nieuws/archief/nieuwsbericht-gemeente-utrecht/groter-voetgangersgebied-en-meer-autovrije-straten-binnenstad

City of Utrecht. (2021). *Jaarstukken 2021 van de Gemeente Utrecht.* Retrieved from Utrecht Jaarverslag: https://utrecht.jaarverslag-2021.nl/

City of Utrecht. (2021). *Mobiliteitsplan 2040.* City of Utrecht. Retrieved from https://omgevingsvisie.utrecht.nl/fileadmin/uploads/documenten/zz-omgevingsvisie/thematisch-beleid/verkeer-mobiliteit/2021-07-mobiliteitsplan-2040.pdf

City of Utrecht. (2022). *Jaarstukken 2022 van de Gemeente Utrecht.* Retrieved from Utrecht Jaarverslag: https://utrecht.jaarverslag-2022.nl/

City of Utrecht. (2023, May 17). *1.000 extra fietsdeals voor inwoners met U-pas.* Retrieved from https://www.utrecht.nl/nieuws/archief/nieuwsbericht-gemeente-utrecht/1000-extra-fietsdeals-voor-utrechters-met-u-pas

City of Utrecht. (2023). *Jaarrekening Baten en lasten.* Retrieved from Utrecht Jaarverslag: https://utrecht.jaarverslag-2023.nl/p57692/resultaat

City of Utrecht. (n.d.). *Aanpak Ledig Erf en omgeving.* Retrieved from https://www.utrecht.nl/wonen-en-leven/verkeer/verkeersprojecten/aanpak-ledig-erf-en-omgeving

City of Utrecht. (n.d.). *Beleid voor samenwerken met bewoners.* Retrieved from https://www.utrecht.nl/bestuur-en-organisatie/beleid-en-omgevingsvisie/beleid-voor-samenwerken-met-bewoners

City of Utrecht. (n.d.). *Bicycle parking Stationsplein.* Retrieved from https://www.utrecht.nl/city-of-utrecht/mobility/cycling/bicycle-parking/bicycle-parking-stationsplein

City of Utrecht. (n.d.). *Binnenstad autoluw maken.* Retrieved from https://www.utrecht.nl/wonen-en-leven/verkeer/verkeersprojecten/binnenstad-autoluw-maken

City of Utrecht. (n.d.). *Catharijnesingel: inrichten als bestemming.* Retrieved from https://www.utrecht.nl/wonen-en-leven/verkeer/verkeersprojecten/catharijnesingel-inrichten-als-bestemming

City of Utrecht. (n.d.). *CO_2 uitstoot.* Retrieved from Utrecht Monitor: https://utrecht-monitor.nl/duurzaamheidsverslag/1-klimaat-en-energie#1.1

City of Utrecht. (n.d.). *Digitale stad.* Retrieved from Utrecht: https://www.utrecht.nl/bestuur-en-organisatie/utrecht-gezonde-stad-van-en-voor-iedereen/digitale-stad

City of Utrecht. (n.d.). *Neude: opnieuw inrichten.* Retrieved from https://www.utrecht.nl/wonen-en-leven/verkeer/verkeersprojecten/neude-opnieuw-inrichten

City of Utrecht. (n.d.). *Straten 30 kilometer per uur maken.* Retrieved from https://www.utrecht.nl/wonen-en-leven/verkeer/verkeersveiligheid/wat-doet-de-gemeente/straten-30-kilometer-per-uur-maken

City of Utrecht. (n.d.). *Voetgangersgebied binnenstad.* Retrieved from https://www.utrecht.nl/wonen-en-leven/verkeer/voetganger/voetgangersgebied-binnenstad

City of Utrecht. (n.d.). *Wie zit er in de raad?* Retrieved from https://www.utrecht.nl/bestuur-en-organisatie/gemeenteraad/wie-zit-er-in-de-raad

CIVITAS. (2015). *CIVITAS Policy Note: The use of social media to involve citizens in urban mobility projects and city planning.* CIVITAS. Retrieved from https://civitas.eu/sites/default/files/civ_pol-an3_m_web.pdf

Coi, G. (2024, May 24). *Mapped: Europe's rapidly rising right.* Retrieved from Politico: https://www.politico.eu/article/mapped-europe-far-right-government-power-politics-eu-italy-finalnd-hungary-parties-elections-polling/

Cokelaere, H. (2024, May 29). *It's not just boomers, young people are voting far right too.* Retrieved from Politico: https://www.politico.eu/article/europe-young-people-right-wing-voters-far-right-politics-eu-elections-parliament/

Commission of the European Communities. (2004). *Towards a Thematic Strategy on the Urban Environment, COM(2004)60.* Brussels: European Commission. Retrieved from https://www.europarl.europa.eu/meetdocs/committees/rett/20040316/com_com(2004)0060en.pdf

Compton, M. E., Luetjens, J., & 't Hart, P. (2019). Designing for Policy Success. *International Review of Public Policy, 1*(2), 119-146. doi:10.4000/irpp.514

Cools, M., Brijs, K., Tormans, H., Moons, E., Janssens, D., & Wets, G. (2011). The socio-cognitive links between road pricing acceptability and changes in travel-behavior. *Transportation Research Part A: Policy and Practice, 45*(8), 779-788. doi:10.1016/j.tra.2011.06.006

Coopmans, M. (2024, July 4). *Bewoners twijfelen over de 'knip' onder Hoog Catharijne.* Retrieved from Binnenstads Krant Utrecht: https://www.binnenstadskrantutrecht.nl/nieuws/bewoners-twijfelen-over-de-knip-onder-hoog-catharijne/34

Council of the EU and the European Council. (2024, June 17). *European Green Deal.* Retrieved from Consilium: https://www.consilium.europa.eu/en/policies/green-deal/

CU 2030. (n.d.). *Moreelsehoek.* Retrieved from CU 2030: https://cu2030.nl/project/moreelsehoek

Curtis, P. (2018). *D5.1. A long term analysis of traffic congestion and car use reduction in major European cities: what policies and measures worked?* CREATE.

D

Daniele, C., Elena, M., & Evangelia, P. (2023). Assessing the role of public transportation to foster city bike tourism. The case of Italy. *Case Studies on Transport Policy, 12*, 101015. doi:10.1016/j.cstp.2023.101015

DCMR. (2023). *CO_2-Monitor Rotterdam 2022.* Retrieved from https://www.dcmr.nl/sites/default/files/2023-09/DCMR_CO2_Monitor_Rotterdam_2022.pdf

Deng, Z., Lin, Y., Zhao, M., & Wang, S. (2015). Collaborative planning in the new media age: The Dafo Temple controversy, China. *Cities, 45*, 41-50. doi:10.1016/j.cities.2015.02.006

Dijk, M., Givoni, M., & Diederiks, K. (2018). Piling up or Packaging Policies? An Ex-Post Analysis of Modal Shift in Four Cities. *Energies, 11*(6), 1400. doi:10.3390/en11061400

Dijkstra, L., Florczyk, A. J., Freire, S., Kemper, T., Melchiorri, M., Pesaresi, M., & Schiavina, M. (2021). Applying the Degree of Urbanisation to the globe: A new harmonised definition reveals a different picture of global urbanisation. *Journal of Urban Economics, 125*. doi:10.1016/j.jue.2020.103312

Docherty, I., Marsden, G., & Anable, J. (2018). The governance of smart mobility. *Transportation Research Part A: Policy and Practice, 115*, 114-125. doi:10.1016/j.tra.2017.09.012

Duff, P. A. (2006). Beyond generalizability: Contextualization, complexity, and credibility in applied linguistics research. In M. Chalhoub-Deville, C. A. Chapelle, & P. A. Duff, *Inference and Generalizability in Applied Linguistics: Multiple perspectives* (pp. 65–95). John Benjamins Publishing Company. doi:10.1075/lllt.12.06duf

Dunn, W. N. (2017). *Public Policy Analysis: An Integrated Approach* (6th ed.). Routledge. doi:10.4324/9781315181226

Dunphy, R. (1997). *Moving Beyond Gridlock: Traffic and Development.* U.S.: Urban Land Institute.

Durand, A., & Zijlstra, T. (2020). *The impact of digitalisation on the access to transport services: a literature review.* The Hague: Ministry of Infrastructure and Water Management. Retrieved from https://english.kimnet.nl/publications/publications/2020/06/29/the-impact-of-digitalisation-on-the-access-to-transport-services-a-literature-review

Dutt, D. (2023). Exploring multi-level interactions in electric vehicle niche evolution in India. *Transportation Research Part D: Transport and Environment, 114*, 103538. doi:10.1016/j.trd.2022.103538

Duursma, L. (2023, June 21). *Opinie: 'Kattenburg is een woonwijk, niet het afvoerputje voor verkeer van de knip in de Weesperstraat'.* Retrieved from Parool: https://www.parool.nl/columns-opinie/opinie-kattenburg-is-een-woonwijk-niet-het-afvoerputje-voor-verkeer-van-de-knip-in-de-weesperstraat~b85986da/

E

EU Urban Mobility Observatory. (2021, February 5). *Oslo – Promoting Active Transport Modes.* Retrieved from Urban Mobility Observatory: https://urban-mobility-observatory.transport.ec.europa.eu/resources/case-studies/oslo-promoting-active-transport-modes_en

European Commission. (2001). *A sustainable Europe for a better world: a European Union strategy for sustainable development COM. (2001) 264 final.* Brussels: European Commission. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52001DC0264

European Commission. (2019). *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: The European Green Deal. COM(2019) 640 final.* Brussels: European Commission. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2019:640:FIN

European Commission. (2021). *Sustainable and Smart Mobility Strategy.* European Commission. Retrieved from https://transport.ec.europa.eu/document/download/be22d311-4a07-4c29-8b72-d6d255846069_en?filename=2021-mobility-strategy-and-action-plan.pdf

European Commission. (n.d.). *Transport and the Green Deal.* Retrieved from European Commission: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/transport-and-green-deal_en

European Environment Agency. (2018). *Perspectives on transitions to sustainability.* Luxembourg: Publications Office of the European Union. Retrieved from https://www.eea.europa.eu/publications/perspectives-on-transitions-to-sustainability/file

European Environment Agency. (2024, June 12). *Transport and mobility.* Retrieved from EEA: https://www.eea.europa.eu/en/topics/in-depth/transport-and-mobility

European Labour Authority. (2023). *The Rise of Teleworking: Improvements in Legislation and Challenges for Tackling Undeclared Work - Output paper from the plenary thematic discussion.* Retrieved from https://www.ela.europa.eu/sites/default/files/2023-12/output-paper-teleworking-March-2023-Plenary.pdf

Eurostat. (2024, February). *Population structure and ageing.* Retrieved from Eurostat: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_structure_and_ageing

F

Fagnant, D. J., & Kockelman, K. (2015). Preparing a nation for autonomous vehicles: opportunities, barriers and policy recommendations. *Transportation Research Part A: Policy and Practice, 77*, 167-181. doi:10.1016/j.tra.2015.04.003

Figee, E., Eigeman, J., Hilterman, F., Kramer, P., van der Loo, M., & Wiggers, A. (2008). *Local Government in The Netherlands.* The Hague: VNG and VNG International. Retrieved from https://www.vng-international.nl/wp-content/uploads/2015/06/Local_Government_in_the_Netherlands.pdf

Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry, 12*(2), 219-245. doi:10.1177/1077800405284363

Foxon, T. J., Hammond, G. P., & Pearson, P. J. (2010). Developing transition pathways for a low carbon electricity system in the UK. *Technological Forecasting and Social Change, 77*(8), 1203-1213. doi:10.1016/j.techfore.2010.04.002

G

Geels, F. W. (2004). From sectoral systems of innovation to socio-technical systems: Insights about dynamics and change from sociology and institutional theory. *Research Policy, 33*(6–7), 897-920. doi:10.1016/j.respol.2004.01.015

Geels, F. W. (2005). The dynamics of transitions in socio-technical systems: A multi-level analysis of the transition pathway from horse-drawn carriages to automobiles (1860–1930). *Technology Analysis & Strategic Management, 17*(4), 445-476. doi:10.1080/09537320500357319

Geels, F. W. (2006). Co-evolutionary and multi-level dynamics in transitions: The transformation of aviation systems and the shift from propeller to turbojet (1930–1970). *Technovation, 26*(9), 999-1016. doi:10.1016/j.technovation.2005.08.010

Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environmental Innovation and Societal Transitions, 1*(1), 24-40. doi:10.1016/j.eist.2011.02.002

Geels, F. W., Kemp, R., Dudley, G., & Lyons, G. (2012). *Automobility in transition? A socio-technical analysis of sustainable transport.* New York: Routledge.

Gemeenteraad van Rotterdam. (n.d.). *Gemeenteraadsleden.* Retrieved from https://gemeenteraad.rotterdam.nl/People/Profiles/b744be9e-e131-4f79-848a-547e57a20dbc

Givoni, M. (2014). Addressing transport policy challenges through Policy-Packaging. *Transportation Research Part A: Policy and Practice, 60*, 1-8. doi:10.1016/j.tra.2013.10.012

Glazener, A., & Khreis, H. (2019). Transforming Our Cities: Best Practices Towards Clean Air and Active Transportation. *Current environmental health reports, 6*(1), 22–37. doi:10.1007/s40572-019-0228-1

Gough, M. Z. (2015). Reconciling Livability and Sustainability: Conceptual and Practical Implications for Planning. *Journal of Planning Education and Research, 35*(2), 145–160. doi:10.1177/0739456X15570320

Gouillart, F., & Hallett, T. (2015). Co-Creation in Government. *Stanford Social Innovation Review, 13*(2), 40-47. doi:10.48558/D85M-MC53

Government of the Netherlands. (n.d.). *Members of the municipal council.* Retrieved from https://www.government.nl/topics/municipalities/members-of-the-municipal-council

Government of the Netherlands. (n.d.). *Tasks of portfolio holders.* Retrieved from https://www.government.nl/topics/municipalities/portfolio-holders/tasks-of-portfolio-holders

Graaf, L., Werland, S., Lah, O., Martin, E., Mejia, A., Muñoz Barriga, M. R., . . . Shrestha, S. (2021). The Other Side of the (Policy) Coin: Analyzing Exnovation Policies for the Urban Mobility Transition in Eight Cities around the Globe. *Sustainability, 13*(16), 9045. doi:10.3390/su13169045

Groth, S. (2019). Multimodal divide: Reproduction of transport poverty in smart mobility trends. *Transportation Research Part A: Policy and Practice, 125*, 56-71. doi:10.1016/j.tra.2019.04.018

Gu, Y., Qian, Z., & Chen, F. (2016). From Twitter to detector: Real-time traffic incident detection using social media data. *Transportation Research Part C: Emerging Technologies, 67*, 321-342. doi:10.1016/j.trc.2016.02.011

Gu, Z., Liu, Z., Cheng, Q., & Saberi, M. (2018). Congestion pricing practices and public acceptance: A review of evidence. *Case Studies on Transport Policy, 6*(1), 94-101. doi:10.1016/j.cstp.2018.01.004

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin, & Y. S. Lincoln, *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.

Gühnemann, A. (2016). *CH4LLENGE Monitoring and Evaluation Manual: Assessing the impact of measures and evaluating.* University of Leeds, Institute for Transport Studies. European Platform on Sustainable Urban Mobility Plans. Retrieved from http://www.sump-challenges.eu/kits

H

Harms, I. M., Burdett, B. R., & Charlton, S. G. (2021). The role of route familiarity in traffic participants' behaviour and transport psychology research: A systematic review. *Transportation Research Interdisciplinary Perspectives, 9*, 100331. doi:10.1016/j.trip.2021.100331

Hecker, J., & Kalpokas, N. (n.d.). *The Ultimate Guide to Qualitative Research - Part 2: Handling Qualitative Data*. Retrieved from Atlasti: https://atlasti.com/guides/qualitative-research-guide-part-2/data-coding

Het Mobiliteitskompas. (n.d.). *Over het kompas.* Retrieved from https://www.hetmobiliteitskompas.nl/over-ons

Hogan, J., & Feeney, S. (2012). Crisis and Policy Change: The Role of the Political Entrepreneur. Risk, Hazards & Crisis in Public Policy, 3(2), 1-24. doi:10.1515/1944-4079.1108

Howlett, M. (2014). Policy Design: What, Who, How and Why? In C. Halpern, P. Lascoumes, & P. Le Galès, *L'instrumentation et ses effets* (pp. 281-315). Paris: Presses de Sciences Po.

Howlett, M., & Rayner, J. (2007). Design Principles for Policy Mixes: Cohesion and Coherence in 'New Governance Arrangements'. *Policy and Society, 26*(4), 1-18. doi:10.1016/S1449-4035(07)70118-2

Howlett, M., & Rayner, J. (2013). Patching vs Packaging in Policy Formulation: Assessing Policy Portfolio Design. *Politics and Governance, 1*(2), 170–182. doi:10.12924/pag2013.01020170

Howlett, M., Ramesh, M., & Perl, A. (2009). Studying Public Policy: Policy Cycles and Policy Subsystems. Canadian *Journal of Political Science, 29*(1), 169-170. doi:10.1017/S0008423900007423

Huber, R. A., & Wicki, M. (2021). What explains citizen support for transport policy? the roles of policy design, trust in government and proximity among Swiss citizens. *Energy Research & Social Science, 75*, 101973. doi:10.1016/j.erss.2021.101973

I

IAP2. (2018). *Core Values, Ethics, Spectrum – The 3 Pillars of Public Participation.* Retrieved from IAP2: https://www.iap2.org/page/pillars

IEA. (2009). *Transport, Energy, and CO_2: Moving Towards Sustainability.* Paris: OECD Publishing. doi:10.1787/9789264073173-en

Ifop. (2024). *Les jeunes et les élections européennes de 2024.* Retrieved from https://www.ifop.com/publication/les-jeunes-et-les-elections-europeennes-de-2024/

Ingram, D. (1987). *Habermas and the Dialectic of Reason.* New Haven: Yale University Press. doi:10.12987/9780300156898

Institute for Manufacturing University of Cambridge. (n.d.). *2x2 matrix.* Retrieved from https://www.ifm.eng.cam.ac.uk/research/dstools/2x2-matrix/

IPCC. (2019). Summary for Policymakers. In H. O. Pörtner, D. C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, . . . N. M. Weyer, *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* (pp. 3–35). Cambridge, UK and New York, NY, USA: Cambridge University Press. doi:10.1017/9781009157964.001

J

Jayaraj, N., Klarin, A., & Ananthram, S. (2024). The transition towards solar energy storage: a multi-level perspective. *Energy Policy, 192*, 114209. doi:10.1016/j.enpol.2024.114209

K

Kanger, L. (2021). Rethinking the Multi-level Perspective for energy transitions: From regime life-cycle to explanatory typology of transition pathways. *Energy Research & Social Science, 71*, 101829. doi:10.1016/j.erss.2020.101829

Karlsson, M. (2016). *What Is a Case Study?* Halmstad University, Academy of Business, Engineering and Science. Halmstad, Sweden: DiVA. Retrieved from https://www.diva-portal.org/smash/get/diva2:1051860/FULLTEXT01.pdf

Karssenberg, H., & Laven, J. (2017). Public Space and Placemaking in NL. In J. Laven, S. van der Ham, S. Veelders, & H. Karssenberg, *The City at Eye Level in The Netherlands* (pp. 29-41). Wageningen, The Netherlands: Uitgeverij Blauwdruk. Retrieved from https://thecityateyelevel.com/app/uploads/2018/07/CAEL_English_Integral.pdf

Kemp, R. (2010). The Dutch energy transition approach. *International Economics and Economic Policy, 7*, 291–316. doi:10.1007/s10368-010-0163-y

Kenworthy, J. R., & Laube, F. B. (1996). Automobile dependence in cities: An international comparison of urban transport and land use patterns with implications for sustainability. *Environmental Impact Assessment Review, 16*(4-6), 279-308. doi:10.1016/S0195-9255(96)00023-6

Kern, F., & Howlett, M. (2009). Implementing transition management as policy reforms: a case study of the Dutch energy sector. *Policy Sciences, 42*(4), 391-408. doi:10.1007/s11077-009-9099-x

Kleingeld, R. (2023). *ICT-gebruik bij bedrijven.* Retrieved from CBS: https://longreads.cbs.nl/ict-kennis-en-economie-2023/ict-gebruik-bij-bedrijven/

Kleinhans, R., Van Ham, M., & Evans-Cowley, J. (2015). Using Social Media and Mobile Technologies to Foster Engagement and Self-Organization in Participatory Urban Planning and Neighbourhood Governance. *Planning Practice & Research, 30*(3), 237-247. doi:10.1080/02697459.2015.1051320

Klijn, E. H., & Koppenjan, J. (2016). *Governance Networks in the Public Sector.* London: Routledge.

Köhler, J., Whitmarsh, L., Nykvist, B., Schilperoord, M., Bergman, N., & Haxeltine, A. (2009). A transitions model for sustainable mobility. *Ecological Economics, 68*(12), 2985-2995. doi:10.1016/j.ecolecon.2009.06.027

Koops, R. (2019, October 19). *Autoluwe binnenstad gaat ten koste van opknappen oude buurten.* Retrieved from Parool: https://www.parool.nl/amsterdam/autoluwe-binnenstad-gaat-ten-koste-van-opknappen-oude-buurten~b3e59914/

Kuss, P., & Nicholas, K. A. (2022). A dozen effective interventions to reduce car use in European cities: Lessons learned from a meta-analysis and transition management. *Case Studies on Transport Policy, 10*(3), 1494-1513. doi:10.1016/j.cstp.2022.02.001

L

Leefbaar Rotterdam. (n.d.). *Veilig en vloeiend verkeer in Rotterdam.* Retrieved from https://www.leefbaarrotterdam.nl/standpunten/

Leong, C., & Howlett, M. (2021). Policy Learning, Policy Failure, and the Mitigation of Policy Risks: Re-Thinking the Lessons of Policy Success and Failure. *Administration & Society, 54*(7), 1379-1401. doi:10.1177/00953997211065344

Lin, Y., & Geertman, S. (2019). Can Social Media Play a Role in Urban Planning? A Literature Review. In S. Geertman, Q. Zhan, A. Allan, & C. Pettit, *Computational Urban Planning and Management for Smart Cities. CUPUM 2019. Lecture Notes in Geoinformation and Cartography* (pp. 69–84). Cham: Springer. doi:10.1007/978-3-030-19424-6_5

Liu, X., & Dijk, M. (2022). How more data reinforces evidence-based transport policy in the Short and Long-Term: Evaluating a policy pilot in two Dutch cities. *Transport Policy, 128*, 166-178. doi:10.1016/j.tranpol.2022.09.022

Liu, X., Dijk, M., & Colombo, C. (2024). Improving multilevel policy mixes for sustainable urban mobility transition. *Environmental Innovation and Societal Transitions, 50*, 100808. doi:10.1016/j.eist.2023.100808

Loorbach, D. (2010). Transition Management for Sustainable Development: A Prescriptive, Complexity-Based Governance Framework. *Governance, 23*(1), 161-183. doi:10.1111/j.1468-0491.2009.01471.x

Loorbach, D., Schwanen, T., Doody, B. J., Arnfalk, P., Langeland, O., & Farstad, E. (2021). Transition governance for just, sustainable urban mobility: An experimental approach from Rotterdam, the Netherlands. *Journal of Urban Mobility, 1*, 100009. doi:10.1016/j.urbmob.2021.100009

López-Ornelas, E., Abascal-Mena, R., & Zepeda-Hernández, S. (2017). Social media participation in urban planning: A new way to interact and take decisions. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-4/W3*, 59–64. doi:10.5194/isprs-archives-XLII-4-W3-59-2017

M

Mah, D. N.-y., van der Vleuten, J. M., Ip, J. C.-m., & Hills, P. R. (2012). Governing the transition of socio-technical systems: A case study of the development of smart grids in Korea. *Energy Policy, 45*, 133-141. doi:10.1016/j.enpol.2012.02.005

Mauree, P. P., & Geneletti, D. (2016). Assessing barriers to effective spatial planning in Mauritius. A combination of SWOT and gap surveys. *Journal of Environmental Planning and Management, 60*(8), 1324-1346. doi:10.1080/09640568.2016.1221796

McConnell, A. (2015). What is policy failure? A primer to help navigate the maze. *Public Policy and Administration, 30*(3-4), 221-242. doi:10.1177/0952076714565416

Mehdizadeh, M., Nordfjaern, T., & Klöckner, C. A. (2022). A systematic review of the agent-based modelling/simulation paradigm in mobility transition. *Technological Forecasting and Social Change, 184*, 122011. doi:10.1016/j.techfore.2022.122011

Mijn Rotterdam. (n.d.). *Verkeersmaatregel 2 pleinen (Kruisplein/Eendrachtsplein).* Retrieved from Mijn Rotterdam: https://mijn.rotterdam.nl/link/project/verkeersmaatregel2pleinen

Mintrom, M., & True, J. (2022). COVID-19 as a policy window: policy entrepreneurs responding to violence against women. *Policy and Society, 41*(1), 143–154. doi:10.1093/polsoc/puab017

Moradi, A., & Vagnoni, E. (2018). A multi-level perspective analysis of urban mobility system dynamics: What are the future transition pathways? *Technological Forecasting and Social Change, 126*, 231-243. doi:10.1016/j.techfore.2017.09.002

Müller, C. (2024). Transition to battery-electric and fuel cell heavy-duty trucks: A multi-level, multi-dimensional approach. *Transportation Research Part D: Transport and Environment, 127*, 104052. doi:10.1016/j.trd.2024.104052

Müller, P., Schleicher-Jester, F., Schmidt, M. P., & Topp, H. H. (1992). Konzepte flächenhafter Verkehrsberuhigung in 16 Städten. *Grüne Reihe, Fachgebiet Verkehrswesen der Universität Kaiserslautern*(24).

N

Nabielek, K., Hamers, D., & Evers, D. (2016). *Cities in the Netherlands: facts and figures on cities and urban areas.* The Hague: Netherlands Environmental Assessment Agency. Retrieved from https://www.pbl.nl/sites/default/files/downloads/PBL-2016-Cities-in-the-Netherlands-2470.pdf

Nemoto, E. H., Korbee, D., Jaroudi, I., Viere, T., Naderer, G., & Fournier, G. (2023). Integrating automated minibuses into mobility systems – Socio-technical transitions analysis and multi-level perspectives. *Technological Forecasting and Social Change, 188*, 122260. doi:10.1016/j.techfore.2022.122260

Nykvist, B., & Whitmarsh, L. (2008). A multi-level analysis of sustainable mobility transitions: Niche development in the UK and Sweden. *Technological Forecasting & Social Change, 75*(9), 1373–1387. doi:10.1016/j.techfore.2008.05.006

O

OECD. (2021). Transformational change #1: From induced demand towards disappearing traffic. In *Transport Strategies for Net-Zero Systems by Design*. Paris: OECD Publishing. doi:10.1787/9b7fd459-en

Onderzoek en Statistiek. (2023, July). *CO_2-uitstoot in 2020, 2021 en 2022.* Retrieved from Onderzoek Amsterdam: https://onderzoek.amsterdam.nl/publicatie/co-2-uitstoot-in-2020-2021-en-2022

Onderzoek en Statistiek. (2024). *Dashboard kerncijfers.* Retrieved from Onderzoek Amsterdam: https://onderzoek.amsterdam.nl/interactief/dashboard-kerncijfers?tab=indicator&thema=bevolking&indicator=BEVTOTAAL&indeling=ggwgebieden&jaar=2024&gebied=GA01&taal=en

Onderzoek en Statistiek. (2024). *Dashboard kerncijfers.* Retrieved from Onderzoek en Statistiek: https://onderzoek.amsterdam.nl/interactief/dashboard-kerncijfers?tab=indicator&thema=bevolkingleeftijd&indicator=BEV65PLUS_P&indeling=ggwgebieden&jaar=2024&gebied=GA02&taal=en

OPEN Rotterdam. (2020, May 15). *Bewoners niet blij met blokkade Kruisplein en Eendrachtsplein.* Retrieved from OPEN Rotterdam: https://openrotterdam.nl/bewoners-niet-blij-met-blokkade-kruisplein-en-eendrachtsplein/

Organizing Engagement. (n.d.). *Spectrum of Public Participation.* Retrieved from Organizing Engagement: https://organizingengagement.org/models/spectrum-of-public-participation/

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action.* Cambridge: Cambridge University Press.

P

Petities NL. (2020). *Stop 'test de toekomst'-initiatief in Rotterdam.* Retrieved from Petities NL: https://www.petities.nl/petitions/stop-test-de-toekomst-initiatief-in-rotterdam?locale=en

Pettirsch, A., Berghaus, M., David, M., & Klee, P.-A. (2023). Holistic, science-based bus acceleration – Combining simulation, computer vision and psychology to develop measures to prioritise public transport in urban areas. *Transportation Research Procedia, 72*, 1177-1184. doi:10.1016/j.trpro.2023.11.575

Piatkowski, D. P., Marshall, W. E., & Krizek, K. J. (2019). Carrots versus Sticks: Assessing Intervention Effectiveness and Implementation Challenges for Active Transport. *Journal of Planning Education and Research, 39*(1), 50-64. doi:10.1177/0739456X17715306

Porrazzo, A., Samson, C., & Freudendal-Pedersen, M. (2022). Gender and mobility planning: The influence of national culture on planning processes. *Case Studies on Transport Policy, 10*(2), 1102-1109. doi:10.1016/j.cstp.2022.03.020

Potter, P. (2024, February). *Gemeentes die uitblinken op Social Media.* Retrieved from Zoeki: https://www.zoeki.nl/bloed-serieus/gemeentes-die-uitblinken-op-social-media/

R

Richardson, J. (2017, May 9). *A Brief Intellectual History of the STEPE Model or Framework*. Retrieved from UCLA: https://pages.gseis.ucla.edu/faculty/richardson/STEPE.htm

Rizos, A. C. (2010). *Implementation of advanced transit traveler information systems in the United States and Canada: practice and prospects.* Massachusetts Institute of Technology. Retrieved from https://dspace.mit.edu/handle/1721.1/59766

Robson, C. (2002). *Real World Research: A Resource for Social Scientists and Practitioner-Researchers* (2nd ed.). Oxford: Blackwell Publishing.

Rodrigue, J. (2020). Transportation, Sustainability and Decarbonization. In J. Rodrigue, *The Geography of Transport Systems* (5 ed.). New York: Routledge. doi:10.4324/9780429346323

Roland Berger. (2021). *GreenTech made in Germany 2021.* Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (BMU). Retrieved from https://www.rolandberger.com/en/Insights/Publications/Green-tech-industry-remains-on-course-for-growth.html

Rotmans, J., Kemp, R., & van Asselt, M. (2001). More evolution than revolution: transition management in public policy. *Foresight, 3*(1), 15-31. doi:10.1108/14636680110803003

Rukmana, D. (2018). Rapid urbanization and the need for sustainable transportation policies in Jakarta. *IOP Conf. Ser.: Earth Environ. Sci., 124*. doi:10.1088/1755-1315/124/1/012017

S

Sagaris, L., Baker, L., & Woodcock, A. (2024). Chapter Eleven - Gender, transport, and health: Emerging trends and gaps in global research. *Advances in Transport Policy and Planning, 13*, 383-438. doi:10.1016/bs.atpp.2023.11.007

Sahertian, T., & Boxem, J. (2024, July 1). *Projecten waarbij de gemeente Amsterdam data verzamelt in de openbare ruimte.* Retrieved from Open Research Amsterdam: https://openresearch.amsterdam/nl/page/107683/projecten-waarbij-de-gemeente-amsterdam-data-verzamelt-in-de-openbare

Sajtos, L., & Magyar, B. (2016). Auxiliary theories as translation mechanisms for measurement model specification. *Journal of Business Research, 69*(8), 3186-3191. doi:10.1016/j.jbusres.2015.12.007

Salas, A., Georgakis, P., Nwagboso, C., Ammari, A., & Petalas, I. (2017). Traffic event detection framework using social media. *2017 IEEE International Conference on Smart Grid and Smart Cities (ICSGSC)*, (pp. 303-307). Singapore. doi:10.1109/ICSGSC.2017.8038595

Scheepers, C. E., Wendel-Vos, G. W., den Broeder, J. M., van Kempen, E. M., van Wesemael, P. V., & Schuit, A. J. (2014). Shifting from car to active transport: A systematic review of the effectiveness of interventions. *Transportation Research Part A: Policy and Practice, 70*, 264-280. doi:10.1016/j.tra.2014.10.015

Schnetzer, S., Hampel, K., & Hurrelmann, K. (2024). *Verantwortung für die Zukunft? Ja, aber - Trendstudie: "Jugend in Deutschland 2024".* Retrieved from https://simon-schnetzer.com/jugendstudien/#jid2024

Selzer, S., & Lanzendorf, M. (2019). On the Road to Sustainable Urban and Transport Development in the Automobile Society? Traced Narratives of Car-Reduced Neighborhoods. *Sustainability, 11*(16), 4375. doi:10.3390/su11164375

Sil, A., Chowdhury, S., & Thoreau, R. (2024). Challenges and barriers for gender-inclusive public transport policies and practice in Delhi, India. *Case Studies on Transport Policy, 16*, 101201. doi:10.1016/j.cstp.2024.101201

Snellen, D., & de Hollander, G. (2017). ICT'S change transport and mobility: mind the policy gap! *Transportation Research Procedia, 26*, 3-12. doi:10.1016/j.trpro.2017.07.003

Sochor, J., & Nikitas, A. (2015). Vulnerable users' perceptions of transport technologies. *Proceedings of the Institution of Civil Engineers - Urban Design and Planning, 169*(3), 154-162. doi:10.1680/jurdp.14.00054

Steer. (2022). *Study on the social dimension of the future EU transport system regarding users and passengers.* Luxembourg: European Commission - Directorate-General for Mobility and Transport. Retrieved from https://transport.ec.europa.eu/transport-themes/social-issues-equality-and-attractiveness-transport-sector/studies/study-social-dimension-future-eu-transport-system-regarding-users-and-passengers_en

Streeck, W., & Thelen, K. A. (2005). *Beyond Continuity: Institutional Change in Advanced Political Economies.* Oxford: Oxford University Press.

Streefkerk, R. (2023, June 22). *Qualitative vs. Quantitative Research | Differences, Examples & Methods.* Retrieved from Scribbr: https://www.scribbr.com/methodology/qualitative-quantitative-research/

Strompen, F., Litman, T., & Bongardt, D. (2012). *Reducing Carbon Emissions through Transport Demand Management Strategies: A review of international examples.* Beijing: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Retrieved from https://www.vtpi.org/Beijing_TDM_2012.pdf

Stumpel, P., van Weperen, S., & van der End, L. (2024). *Monitor Mobiliteitsplan 2040 - cijfers over 2023.* Utrecht: City of Utrecht. Retrieved from https://utrecht.bestuurlijkeinformatie.nl/Reports/Document/d258bcd2-fe43-4405-a527-c00ccc4a4a18?documentId=e05d6d12-afa9-4465-92db-76ced9b0576e

Szigeti, H., Messaadia, M., Majumdar, A., & Eynard, B. (2011). STEEP analysis as a tool for building technology roadmaps. *eChallenges e-2011.* Florence, Italy.

T

Taherdoost, H. (2021). Data Collection Methods and Tools for Research; A Step-by-Step Guide to Choose Data Collection Technique for Academic and Business Research Projects. *International Journal of Academic Research in Management (IJARM), 10*(1), 10-38. doi:hal-03741847

te Brömmelstroet, M., Mladenović, M. N., Nikolaeva, A., Gaziulusoy, İ., Ferreira, A., Schmidt-Thomé, K., . . . Bergsma, B. (2022). Identifying, nurturing and empowering alternative mobility narratives. *Journal of Urban Mobility, 2*, 100031. doi:10.1016/j.urbmob.2022.100031

Tejaswin, P., Kumar, R., & Gupta, S. (2015). Tweeting Traffic: Analyzing Twitter for generating real-time city traffic insights and predictions. *Proceedings of the 2nd IKDD Conference on Data Sciences (CODS-IKDD '15)* (pp. Article 9, 1–4). New York, USA: Association for Computing Machinery. doi:10.1145/2778865.2778874

The Lancet Regional Health - Europe. (2023, December). Securing the future of Europe's ageing population by 2050. *The Lancet Regional Health – Europe, 35*. doi:10.1016/j.lanepe.2023.100807

Travisi, C. M., Camagni, R., & Nijkamp, P. (2006). *Analysis of Environmental Costs of Mobility due to Urban Sprawl - A Modelling Study on Italian Cities.* Amsterdam and Rotterdam: Tinbergen Institute. Retrieved from https://www.econstor.eu/bitstream/10419/86345/1/06-042.pdf

U

UN-Habitat. (2019). *Progress in the implementation of the New Urban Agenda and the 2030 Agenda for Sustainable Development.* Nairobi: United Nations Habitat Assembly of the United Nations Human Settlements Programme. Retrieved from https://unhabitat.org/sites/default/files/2019/05/hsp_ha_1_4_e.pdf

UN-Habitat. (2022). *World Cities Report 2022.* Nairobi, Kenya: United Nations Human Settlements Programme (UN-Habitat). Retrieved from https://unhabitat.org/sites/default/files/2022/06/wcr_2022.pdf

United Nations. (2017). *New Urban Agenda.* United Nations. Retrieved from https://habitat3.org/wp-content/uploads/NUA-English.pdf

United Nations. (2019). *World Urbanization Prospects: The 2018 Revision (ST/ESA/SER.A/420).* Department of Economic and Social Affairs, Population Division. New York: United Nations. Retrieved from https://population.un.org/wup/Publications/Files/WUP2018-Report.pdf

Utrecht Monitor. (2024). *Bevolkingssamenstelling.* Retrieved from Utrecht Monitor: https://utrecht-monitor.nl/bevolking-bestuur/bevolking/bevolkingssamenstelling

Utrecht Monitor. (2024, April 24). *Growth & housing.* Retrieved from Utrecht Monitor: https://utrecht-monitor.nl/english/growth-housing

V

van der Horst, M. (2024). *Raadsinformatiebrief onderzoek en evaluatie pilot Weesperstraat.*

van der Koogh, M., Chappin, E., Heller, R., & Lukszo, Z. (2021). Are We Satisfying the Right Conditions for the Mobility Transition? A Review and Evaluation of the Dutch Urban Mobility Policies. *Sustainability, 13*(22), 12736. doi:10.3390/su132212736

van der Werf, J., Zweerink, K., & van Teeffelen, J. (2016). History of the City, Street and Plinth. In H. Karssenberg, J. Laven, M. Glaser, & M. van 't Hoff, *The City at Eye Level: Lessons for Street Plinths* (pp. 36-47). Delft, the Netherlands: Eburon Academic Publishers.

van der Zee, R. (2018, September 19). *Walk the Lijnbaan: decline and rebirth on Europe's first pedestrianised street.* Retrieved from The Guardian: https://www.theguardian.com/cities/2018/sep/19/walk-lijnbaan-europe-first-pedestrian-street-rotterdam

van Geet, M. T., Lenferink, S., & Leendertse, W. (2019). Policy design dynamics: fitting goals and instruments in transport infrastructure planning in the Netherlands. *Policy Design and Practice, 2*(4), 324-358. doi:10.1080/25741292.2019.1678232

van Kruiningen, M. A. (2020). *Verkeersbesluit experiment Oude Westen in het kader van de RMA.* Rotterdam. Retrieved from https://zoek.officielebekendmakingen.nl/stcrt-2020-25638.pdf

van Thiel, S. (2014). *Research Methods in Public Administration and Public Management* (1st ed.). London: Routledge. doi:10.4324/9780203078525

van Wee, B., Annema, J., & van Barneveld, S. (2023). Controversial policies: growing support after implementation. A discussion paper. *Transport Policy, 139*, 79-86. doi:10.1016/j.tranpol.2023.05.010

Velzel, B. (2023, June 16). *Lawaaidemo bewoners Kattenburg tegen knip Weesperstraat door 'onrechtvaardige' files.* Retrieved from AT5: https://www.at5.nl/artikelen/221033/lawaaidemo-bewoners-kattenburg-tegen-knip-weesperstraat-door-onrechtvaardige-files

Verlinghieri, E., & Schwanen, T. (2020). Transport and mobility justice: Evolving discussions. *Journal of Transport Geography, 87*, 102798. doi:10.1016/j.jtrangeo.2020.102798

Villena-Sanchez, J., Boschmann, E. E., & Avila-Forcada, S. (2022). Daily travel behaviors and transport mode choice of older adults in Mexico City. *Journal of Transport Geography, 104*, 103445. doi:10.1016/j.jtrangeo.2022.103445

W

We Are Social & Meltwater. (2024). *Digital 2024 Global Overview Report.* Meltwater and We Are Social. Retrieved from https://datareportal.com/reports/digital-2024-global-overview-report

Y

Yin, R. K. (2014). *Case study research: design and methods* (5th ed.). Thousand Oaks, California: Sage.

[This page intentionally left blank]

09
APPENDICES

© Georgi Kalaydzhiev · 30 November 2022 · No title

TABLE OF CONTENTS APPENDICES

LIST OF FIGURES APPENDICES

LIST OF TABLES APPENDICES

APPENDIX 1.
RESEARCH QUESTIONS AND RELATION TO CONCEPTUAL FRAMEWORK

MAIN QUESTION

To what extent could the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht be considered 'mobility policy success stories'?

SUB-QUESTIONS

1 Which are the factors contributing to a policy pursuing sustainable mobility transition being labelled a 'success'?

- How does existing literature define policy success in mobility policymaking? – *collection of theory-based success factors*
- How do policymakers and implementers from the cities of Amsterdam, Rotterdam and Utrecht define policy success in mobility policymaking? – *collection of practice-based success factors*
- How could mobility policy success be assessed based on the collected theory- and practice-based success factors? – *development of the mobility policy success assessment matrix*

2 What are the exogenous landscape developments and internal regime dynamics shaping the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht?

Sociotechnical landscape developments

- Which are the Social, Technological, Economic, Environmental, and Political/Planning facilitators and barriers influencing the sustainable mobility transition regime of cities? – *illustrating the sociotechnical landscape through a STEEP trends analysis*
- How are these STEEP facilitators and barriers manifested in the cities of Amsterdam, Rotterdam and Utrecht? – *illustrating the sociotechnical landscape through a STEEP trends analysis*

Case study Amsterdam: internal regime developments and dynamics

Formal rules review (FSSD application):

- Which are the main and sub-goals of Agenda Amsterdam Autoluw? – *Step A. Mobility vision*
- Which are the current problems Autoluw aims to address? – *Step B. Current baseline*
- What are the envisioned Autoluw measures to achieve the policy goals? – *Step C. Building blocks to get from B to A*
- What is the envisioned strategic implementation plan for Autoluw? – *Step D. Strategic plan*

Elements review:

- Which are the push and pull mobility measures corresponding to the Autoluw policy implemented as part of the inner city mobility transition of Amsterdam? – *application of TDM theory*
- What are the monitoring mechanisms for Agenda Autoluw?
- What are the impacts of Autoluw in the inner city so far?

Actors review:

- Which are the key stakeholders involved in the delivery of Agenda Autoluw?
- What has been the degree of public participation during the different Autoluw policy cycle phases? – *application of Spectrum of Public Participation model*

Case study Rotterdam: internal regime developments and dynamics

Formal rules review (FSSD application):

- Which are the main and sub-goals of Rotterdamse MobiliteitsAanpak (RMA)? – *Step A. Mobility vision*
- Which are the current problems RMA aims to address? – *Step B. Current baseline*
- What are the envisioned RMA measures to achieve the policy goals? – *Step C. Building blocks to get from B to A*
- What is the envisioned strategic implementation plan for RMA? – *Step D. Strategic plan*

Elements review:

- Which are the push and pull mobility measures corresponding to the RMA policy implemented as part of the inner city mobility transition of Rotterdam? – *application of TDM theory*
- What are the monitoring mechanisms for RMA?
- What are the impacts of RMA in the inner city so far?

Actors review:

- Which are the key stakeholders involved in the delivery of RMA?
- What has been the degree of public participation during the different RMA policy cycle phases? – *application of Spectrum of Public Participation model*

Case study Utrecht: internal regime developments and dynamics

Formal rules review (FSSD application):

- Which are the main and sub-goals of Mobiliteitsplan 2040 (MP2040)? – *Step A. Mobility vision*
- Which are the current problems MP2040 aims to address? – *Step B. Current baseline*
- What are the envisioned MP2040 measures to achieve the policy goals? – *Step C. Building blocks to get from B to A*
- What is the envisioned strategic implementation plan for MP2040? – *Step D. Strategic plan*

Elements review:

- Which are the push and pull mobility measures corresponding to the MP2040 policy implemented as part of the inner city mobility transition of Utrecht? – *application of TDM theory*
- What are the monitoring mechanisms for MP2040?
- What are the impacts of MP2040 in the inner city so far?

Actors review:

- Which are the key stakeholders involved in the delivery of MP2040?
- What has been the degree of public participation during the different MP2040 policy cycle phases? – *application of Spectrum of Public Participation model*

3 How do the inner city mobility transitions of Amsterdam, Rotterdam and Utrecht compare based on the identified success factors?

- How do the three cities compare in terms of their *urban form* and the *landscape developments*?
- How do the three cities compare in terms of their *regime characteristics*?
- How do the three cities compare on the success factors belonging to the *programmatic* assessment component?
- How do the three cities compare on the success factors belonging to the *temporal* assessment component?
- How do the three cities compare on the success factors belonging to the *process* assessment component?
- How do the three cities compare on the success factors belonging to the *political* assessment component?

APPENDIX 2.
LIST OF INTERVIEWEES

Interviewee name	Position and organisation	Interview format	Interview date and time	Related case study city
Govert de With	Policy Advisor Traffic and Public Space (City of Amsterdam)	Online (Teams)	31 May 2023 (13.00 – 14.00)	Amsterdam
Jesse Bolscher	Strategic Advisor Engineering Bureau (City of Amsterdam)	Online (Teams)	14 June 2023 (11.30 – 12.30)	Amsterdam
Katherine VanHoose	Researcher (University of Amsterdam)	Online (Teams)	5 July 2023 (13.00 – 13.45)	(mostly) Amsterdam (vaguely) Rotterdam (vaguely) Utrecht
Kristiaan Leurs	Strategic Advisor Mobility (City of Rotterdam)	Online (Teams)	31 May 2023 (11.00 – 12.00)	Rotterdam
Jan van de Ree	Head of Area Development Inner City (City of Rotterdam)	Online (Teams)	28 June 2023 (11.30 – 12.30)	Rotterdam
Ronald Tamse	Senior Policy Advisor and Traffic Engineer / Urban Planner (City of Utrecht)	Online (Teams)	13 June 2023 (10.30 – 11.30)	Utrecht
Marjo de Kraker	Senior Designer Public Space Centre Utrecht (City of Utrecht)	Online (Teams)	28 June 2023 (14.00 – 14.45)	Utrecht

Table A2. List of interviewed experts.

APPENDIX 3.
INTERVIEW GUIDES

INTERVIEW GUIDE FOR CITY REPRESENTATIVES FROM AMSTERDAM, ROTTERDAM AND UTRECHT

Master thesis abstract

The master thesis entitled *"Mobility policy success stories? A comparative case study analysis of the inner city mobility transitions of Amsterdam, Rotterdam and Utrecht"* provides an assessment of the extent to which the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht could be considered 'policy success stories'. Through comparative case study research, the thesis compares the inner city mobility transitions of the three cities corresponding to their latest mobility policies, namely, Agenda Amsterdam Autoluw, Rotterdamse MobiliteitsAanpak and Mobiliteitsplan 2040. The thesis applies theory from transition, transport, policy and public participation studies, and presents a state-of-the-art mobility policy success assessment matrix with 14 corresponding success factors to consider when assessing the success of mobility transitions evoked by dedicated mobility policies. Based on the comparative analysis on each of the identified success factors, a final assessment on the three cities' transition 'successfulness' is presented by placing them on the mobility policy success assessment matrix. For the collection of data, semi-structured interviews with policymakers and other experts involved in the transition experiences of the three cities are conducted. The knowledge from this thesis could aid policymakers for the development of successful policies towards sustainable mobility in inner cities.

Keywords

Sustainable mobility transition; inner cities; Dutch context; mobility policy; success

Interviewer: Ekaterina Uzunova (Student Urban and Regional Mobility at Radboud University)

Interviewee: -

Place of interview: Online (Teams)

Date of interview: -

Goal of interview: To gain insights into the policymaking and implementation processes surrounding the *"Title Policy"* and the inner city mobility transition of the city of *"City Name"*.

INTRODUCTION TO THE INTERVIEW (5 minutes)

INTRODUCING THE THEMES (1 minute)

The themes this interview will cover include: a brief introduction to your background, factors contributing to successful policymaking, policy formulation processes, inner city mobility transition measures – implementation and evaluation, anything else you believe could be useful to add.

THEME 1: INTRODUCTION INTERVIEWEE (3 minutes)

This section aims to gather information about your background.

1. Could you please introduce yourself?
2. What is your role in your institution?
3. Could you elaborate on your experience with urban transformation and mobility?
4. What are you currently working on? Which projects are you involved in?

THEME 2: FACTORS CONTRIBUTING TO SUCCESSFUL POLICYMAKING (5 minutes)

This section aims to grasp your opinion on the factors which contribute to successful policymaking in the domain of sustainable mobility transitions.

1. Based on your experience and expertise, what do you consider success/failure in sustainable mobility policymaking?
2. In your opinion and experience, how could a failed policy transform into a successful one and vice versa?

THEME 3: MOBILITY POLICY *"POLICY NAME"* – POLICY FORMULATION (20 minutes)

This section enquires about the processes surrounding the formulation of *"policy name"*.

1. Which policy cycle phases have you been personally involved in?
2. Which are the main goals and challenges this policy addresses?
3. Which are the most significant changes envisioned as part of *"policy name"*?
4. What are the envisioned monitoring mechanisms? Which are the indicators used for the evaluation of 'success'?
5. What have been the public participation processes deployed (if any) during the policy formulation phase of *"policy name"*? What went well and what did not?
6. What has been the public's reaction to the adoption of *"policy name"*?
7. What challenges has your administration faced during the formulation and adoption of *"policy name"*?
8. Which are the main lessons from the policy cycle phase policy formulation?

THEME 4: MOBILITY POLICY *"POLICY NAME"* – POLICY IMPLEMENTATION AND EVALUATION (20 minutes)

This section enquires about the processes surrounding the inner city mobility measures implementation and evaluation corresponding to *"policy name"*.

1. Could you please list and elaborate on a few of the more significant inner city mobility measures implemented as part of *"policy name"* policy instruments package?
2. Which measures have you been personally involved in? What has been your role?
3. Which are the monitoring mechanisms deployed for the inner city measures? Which indicators have been used to measure 'success'?
4. What are the impacts of the already implemented measures (if evidence is already present)?
5. Which are the key stakeholders involved in the implementation and monitoring of the measures?
6. What have been the public participation processes deployed (if any)? What went well and what did not?
7. What has been the public's reaction to the measures?
8. Which challenges has your administration encountered in relation to the implementation and evaluation of the measures of *"policy name"*?
9. Which are the main lessons from the policy cycle phases implementation and evaluation?
10. How far is the city in its inner city mobility transition?

THEME 5: ADDITIONAL INFORMATION (5 minutes)

1. Is there anything you would like to add that could be useful for this research?
2. What are your recommendations for this master's thesis study; in terms of focus, direction, etc.?
3. Do you have recommendations regarding other experts to approach for this research study?

CLOSURE OF THE INTERVIEW (1 minute)

INTERVIEW GUIDE FOR REPRESENTATIVE FROM UNIVERSITY OF AMSTERDAM

Master thesis abstract

The master thesis entitled *"Mobility policy success stories? A comparative case study analysis of the inner city mobility transitions of Amsterdam, Rotterdam and Utrecht"* provides an assessment of the extent to which the inner city sustainable mobility transitions of Amsterdam, Rotterdam and Utrecht could be considered 'policy success stories'. Through comparative case study research, the thesis compares the inner city mobility transitions of the three cities corresponding to their latest mobility policies, namely, Agenda Amsterdam Autoluw, Rotterdamse MobiliteitsAanpak and Mobiliteitsplan 2040. The thesis applies theory from transition, transport, policy and public participation studies, and presents a state-of-the-art mobility policy success assessment matrix with 14 corresponding success factors to consider when assessing the success of mobility transitions evoked by dedicated mobility policies. Based on the comparative analysis on each of the identified success factors, a final assessment on the three cities' transition 'successfulness' is presented by placing them on the mobility policy success assessment matrix. For the collection of data, semi-structured interviews with policymakers and other experts involved in the transition experiences of the three cities are conducted. The knowledge from this thesis could aid policymakers for the development of successful policies towards sustainable mobility in inner cities.

Keywords

Sustainable mobility transition; inner cities; Dutch context; mobility policy; success

Interviewer: Ekaterina Uzunova (Student Urban and Regional Mobility at Radboud University)

Interviewee: Katherine VanHoose (Researcher at University of Amsterdam)

Place of interview: Online (Teams)

Date of interview: 5 July 2023 (13.00 – 13.45)

Goal of interview: To discuss the initial findings from my research study from an academic perspective.

INTRODUCTION TO THE INTERVIEW (5 minutes)

INTRODUCING THE THEMES (1 minute)

The themes this interview will cover include: a brief introduction to your background, role of your institute in the mobility transition, discussion on my research findings so far, anything else you believe could be useful to add.

THEME 1: INTRODUCTION INTERVIEWEE (3 minutes)

This section aims to gather information about your background.

1. Could you please introduce yourself?
2. What is your role in your institution?
3. Could you elaborate on your experience with urban transformation and mobility?
4. What are you currently working on? Which projects are you involved in?

THEME 2: ROLE OF YOUR INSTITUTE IN THE MOBILITY TRANSITION (10 minutes)

This section enquires about the role your institute plays/has played in the mobility transition of Amsterdam.

1. Does your institute actively collaborate with the city authorities in projects/education/research related to the mobility transition of Amsterdam? If yes, what does the University of Amsterdam do to support the authorities in the facilitation of a mobility transition towards sustainable mobility? Has your institute been involved in, for instance, projects related to the Agenda Amsterdam Autoluw?
2. What is the role of youth and education in this transition?

THEME 3: DISCUSSION STUDY FINDINGS (20 minutes)

This section discusses the initial findings from my study.

- Success factors sustainable mobility policymaking
- Inner city mobility transition experiences Rotterdam, Amsterdam and Utrecht – *differences and similarities, progress*

THEME 4: ADDITIONAL INFORMATION (5 minutes)

1. Is there anything you would like to add that could be useful for this research?
2. What are your recommendations for this master's thesis study; in terms of focus, direction, etc.?

CLOSURE OF THE INTERVIEW (1 minute)

APPENDIX 4.
ATLAS.TI CODING OF INTERVIEW TRANSCRIPTS

INTERVIEW CODING METHODOLOGY

All interview transcripts have been coded using the software Atlas.ti. There are 4 project bundles developed: 1 for the two interviews with the City of Amsterdam representatives, 1 for the two interviews with the City of Rotterdam representatives, 1 for the two interviews with the City of Utrecht representatives, and 1 for the interview with the representative from the University of Amsterdam. The table below offers a summary of the coding and project bundles details. It has been chosen to bundle the interviews per city authority due to the similar nature of the conversations held with the experts. The interview with the researcher from the University of Amsterdam remains in a separate file due to the uniqueness of the conversation in comparison to the other interviews.

Project bundle name	Transcript files analysed in bundle	Total codes	Total code groups	Total quotations
Interviews City of Amsterdam Representatives	1) Interview transcript Govert de With *(Policy Advisor Traffic and Public Space)* 2) Interview transcript Jesse Bolscher *(Strategic Advisor Engineering Bureau)*	32	10	128
Interviews City of Rotterdam Representatives	1) Interview transcript Kristiaan Leurs *(Strategic Advisor Mobility)* 2) Interview transcript Jan van de Ree *(Head of Area Development Inner City)*	27	11	154
Interviews City of Utrecht Representatives	1) Interview transcript Ronald Tamse *(Senior Policy Advisor and Traffic Engineer / Urban Planner)* 2) Interview transcript Marjo de Kraker *(Senior Designer Public Space Centre Utrecht)*	33	10	198
Interview University of Amsterdam Representative	Interview transcript Katherine VanHoose *(Researcher)*	23	8	73

Table A4.1. Atlas.ti project bundles and coding details.

The thesis utilises an inductive approach to the relationship between theory and research where theory is the outcome of research (Bryman, 2016). Firstly, the interviews have contributed to the reveal of practice-based factors determining the 'success' of mobility policies, which has, in turn, helped to generate theory for the development of the mobility policy success assessment matrix. Next to that, the interviews have helped gather input for each case study city on the landscape and regime characteristics and developments which, in turn, helped to perform the assessment of each city based on the matrix and derive conclusions on their 'successfulness'.

For this, an inductive reasoning approach to the qualitative data (i.e., the interviews) analysis has been applied. This approach entails starting with finding patterns in the data and instances which appear most relevant to the research enquiry (Hecker & Kalpokas, n.d.). To identify these patterns and instances, codes are applied to quotations in the interviews, which are a category/summary of a larger text segment, in this case, the conversations with the experts. There are cases in all interview transcripts where multiple codes have been applied to the same quotations, indicating a relationship between different codes. Likewise, quotations for which the same codes have been applied, indicates a relationship between different quotations.

For all interviews, firstly, open coding has been performed which features applying codes (i.e., short and descriptive phases or keywords) to quotations in the transcripts. Second, axial coding is performed which features the drawing of connections between the open codes by placing them under code groups representing broader categories that group the open codes together. Third, a code-document analysis is performed via Atlas.ti which helped to illustrate the relationship between code groups and documents. Finally, a link has been established between the derived codes and code groups and the research steps of this study, helping to identify where certain codes and code groups could be used for further analytical interpretations in-text. The sections below summarise the coding process and results per project bundle.

INTERVIEWS CITY OF AMSTERDAM REPRESENTATIVES

Transcript files:
1) Interview transcript Govert de With (Policy Advisor Traffic and Public Space)
2) Interview transcript Jesse Bolscher (Strategic Advisor Engineering Bureau)

The open coding process featured applying a total of 32 open codes to quotations, which are sometimes whole paragraphs and, other times - sentences. For some sentences/paragraphs, multiple codes have been applied. These 32 codes were then grouped into 10 code groups. The process was made easier and clearer using a similar starting code name and colouring. The different code groups correspond to a different colour:

Name			Name	Grounded	Groups
Collaboration with other cities/stakeh...	1	●	Amsterdam historical development	2	[History]
History	1	●	Collaboration with / inspiration from other cities...	5	[Collaboration with other cities/stakeholders]
Introduction interviewee	1	●	Introduction interviewee	7	[Introduction interviewee]
Policies - Autoluw	7	●	Policies - Autoluw - challenges	4	[Policies - Autoluw]
Policies - New vision	6	●	Policies - Autoluw - goals	4	[Policies - Autoluw]
Policies - Other	2	●	Policies - Autoluw - impact	2	[Policies - Autoluw]
Politics in the city	3	●	Policies - Autoluw - measures	11	[Policies - Autoluw]
Recommendations for thesis	2	●	Policies - Autoluw - piloting	6	[Policies - Autoluw]
STEEP trends	5	●	Policies - Autoluw - public opinion	4	[Policies - Autoluw]
Transition and policy success factors	4	●	Policies - Autoluw - public participation	8	[Policies - Autoluw]
		●	Policies - New vision - goals	6	[Policies - New vision]
		●	Policies - New vision - measures	6	[Policies - New vision]
		●	Policies - New vision - piloting	1	[Policies - New vision]
		●	Policies - New vision - potential impact	2	[Policies - New vision]
		●	Policies - New vision - process and actions	10	[Policies - New vision]
		●	Policies - New vision - public participation	4	[Policies - New vision]
		●	Policies - Other - Omgevingsvisie	2	[Policies - Other]
		●	Policies - Other - social domain	1	[Policies - Other]
		●	Politics - administration	8	[Politics in the city]
		●	Politics - finances	8	[Politics in the city]
		●	Politics - public opinion	2	[Politics in the city]
		●	Recommendation for my thesis	1	[Recommendations for thesis]
		●	Recommendation interview contacts	1	[Recommendations for thesis]
		●	Success factor - expert opinion	2	[Transition and policy success factors]
		●	Success factor - political/organisational	5	[Transition and policy success factors]
		●	Success factor - quantitative impacts	2	[Transition and policy success factors]
		●	Success factor - social	1	[Transition and policy success factors]
		●	Trends - 15-minute city	1	[STEEP trends]
		●	Trends - COVID	4	[STEEP trends]
		●	Trends - environmental	2	[STEEP trends]
		●	Trends - interdisciplinarity	12	[STEEP trends]
		●	Trends - social	4	[STEEP trends]

Figure A4.1. Open codes and code groups - interviews City of Amsterdam.

The colour **<black>** is aligned with code group *"History"* and contains the code:
- Amsterdam historical development

The colour **<purple>** is aligned with code group *"Collaboration with other cities/stakeholders"* and contains the code:
- Collaboration with / inspiration from other cities & stakeholders

The colour **<gray>** is aligned with code group *"Introduction interviewee"* and contains the code:
- Introduction interviewee

The colour **<red>** is aligned with code group *"Policies - Autoluw"* and contains the 7 codes:
- Policies - Autoluw - challenges
- Policies - Autoluw - goals
- Policies - Autoluw - impact
- Policies - Autoluw - measures
- Policies - Autoluw - piloting
- Policies - Autoluw - public opinion
- Policies - Autoluw - public participation

The colour **<green>** is aligned with code group *"Policies - New vision"* and contains the 6 codes:
- Policies - New vision - goals
- Policies - New vision - measures
- Policies - New vision - piloting
- Policies - New vision - potential impact
- Policies - New vision - process and actions
- Policies - New vision - public participation

The colour **<orange>** is aligned with code group *"Policies - Other"* and contains the 2 codes:
- Policies - Other - Omgevingsvisie
- Policies - Other - social domain

The colour **<blue>** is aligned with code group *"Politics in the city"* and contains the 3 codes:
- Politics - administration
- Politics - finances
- Politics - public opinion

The colour **<yellow>** is aligned with code group *"Recommendations for thesis"* and contains the 2 codes:
- Recommendation for my thesis
- Recommendation interview contacts

The colour **<turquoise>** is aligned with code group *"STEEP trends"* and contains the 5 codes:
- Trends - 15-minute city
- Trends - COVID
- Trends - environmental
- Trends - interdisciplinarity
- Trends - social

The colour **<pink>** is aligned with code group *"Transition and policy success factors"* and contains the 4 codes:

- Success factor - expert opinion
- Success factor - political/organisational
- Success factor - quantitative impacts
- Success factor - social

The code-document analysis (see table A4.2) shows that the conversation with Jesse Bolscher (Strategic Advisor Engineering Bureau) was mostly focused on the Autoluw policy agenda in comparison to the interview with Govert de With (Policy Advisor Traffic and Public Space), which was mostly focused on the new mobility vision of City of Amsterdam that is currently in development. Both interviewees have mentioned success factors in relation to the on-going mobility transition and the mobility policies, and have referred to some STEEP trends, such as COVID-19 and climate change. The interviewee, Jesse Bolscher, has not mentioned the new mobility vision of the city or the historical development of Amsterdam and has not provided recommendations for this thesis.

	1: Interview transcript - Govert de With -... 69	3: Interview transcript - Jesse Bolscher -... 59	Totals
Collaboration with other cities/stakehol... 1 5	2	3	5
History 1 2	2		2
Introduction interviewee 1 7	1	6	7
Policies - Autoluw 7 37	8	29	37
Policies - New vision 6 24	24		24
Policies - Other 2 3	2	1	3
Politics in the city 3 18	10	8	18
Recommendations for thesis 2 2	2		2
STEEP trends 5 22	14	8	22
Transition and policy success factors 4 10	4	6	10
Totals	69	61	130

Table A4.2. Atlas.ti code-document analysis - interviews City of Amsterdam.

INTERVIEWS CITY OF ROTTERDAM REPRESENTATIVES

Transcript files:
1) Interview transcript Kristiaan Leurs (Strategic Advisor Mobility)
2) Interview transcript Jan van de Ree (Head of Area Development Inner City)

The open coding process featured applying a total of 27 open codes to quotations, which are sometimes whole paragraphs and, other times - sentences. For some sentences/paragraphs, multiple codes have been applied. These 27 codes were then grouped into 11 code groups. The process was made easier and clearer using a similar starting code name and colouring. The different code groups correspond to a different colour:

Name	
Collaboration with other cities/stakeholders	1
History	1
Introduction interviewee	1
Policies - New mobility vision	2
Policies - Other	3
Policies - RMA	3
Policies - Various	5
Politics in the city	3
Recommendations for thesis	2
STEEP trends	4
Transition and policy success factors	2

Name	Grounded	Groups
Collaboration with / inspiration from other cities & stakehold...	8	[Collaboration with other cities/stakeholders]
Introduction interviewee	3	[Introduction interviewee]
Policies - New mobility vision - goals	3	[Policies - New mobility vision]
Policies - New mobility vision - measures	5	[Policies - New mobility vision]
Policies - Other - City Lounge inner city policy	3	[Policies - Other]
Policies - Other - Omgevingsvisie	1	[Policies - Other]
Policies - Other - Verkeerscirculatieplan	5	[Policies - Other]
Policies - RMA - experiments/temporary	6	[Policies - RMA]
Policies - RMA - goals	3	[Policies - RMA]
Policies - RMA - measures	1	[Policies - RMA]
Policies - Various - (potential) impact	4	[Policies - Various]
Policies - Various - current baseline / challenges	18	[Policies - Various]
Policies - Various - goals	8	[Policies - Various]
Policies - Various - mobility measures	20	[Policies - Various]
Policies - Various - public participation	14	[Policies - Various]
Politics - administration	10	[Politics in the city]
Politics - finances	6	[Politics in the city]
Politics - public opinion	9	[Politics in the city]
Recommendation for my thesis	1	[Recommendations for thesis]
Recommendation interview contacts	2	[Recommendations for thesis]
Rottedam historical development	6	[History]
Success factor - collaboration	1	[Transition and policy success factors]
Success factor - political/organisational	2	[Transition and policy success factors]
Trends - environmental	3	[STEEP trends]
Trends - interdisciplinarity	10	[STEEP trends]
Trends - politics	5	[STEEP trends]
Trends - social	2	[STEEP trends]

Figure A4.2. Open codes and code groups - interviews City of Rotterdam.

The colour **<black>** is aligned with code group *"History"* and contains the code:

- Rotterdam historical development

The colour **<purple>** is aligned with code group *"Collaboration with other cities/stakeholders"* and contains the code:

- Collaboration with / inspiration from other cities & stakeholders

The colour **<gray>** is aligned with code group *"Introduction interviewee"* and contains the code:

- Introduction interviewee

The colour **<red>** is aligned with code group *"Policies - RMA"* (referring to Rotterdamse Mobiliteitsaanpak) and contains the 3 codes:

- Policies - RMA - experiments/temporary
- Policies - RMA - goals
- Policies - RMA - measures

The colour **<green>** is aligned with code group *"Policies - New mobility vision"* and contains the 2 codes:

- Policies - New mobility vision - goals
- Policies - New mobility vision - measures

The colour **<orange>** is aligned with code group *"Policies - Other"* and contains the 3 codes:

- Policies - Other - City Lounge inner city policy
- Policies - Other - Omgevingsvisie
- Policies - Other - Verkeerscirculatieplan

The colour **<brown>** is aligned with code group *"Policies - Various"* and contains the 5 codes:

- Policies - Various - (potential) impact
- Policies - Various - current baseline / challenges
- Policies - Various - goals
- Policies - Various - mobility measures
- Policies - Various - public participation

The colour **<blue>** is aligned with code group *"Politics in the city"* and contains the 3 codes:

- Politics - administration
- Politics - finances
- Politics - public opinion

The colour **<yellow>** is aligned with code group *"Recommendations for thesis"* and contains the 2 codes:

- Recommendation for my thesis
- Recommendation interview contacts

The colour **<turquoise>** is aligned with code group *"STEEP trends"* and contains the 4 codes:

- Trends - environmental
- Trends - interdisciplinarity
- Trends - politics
- Trends - social

The colour **<pink>** is aligned with code group *"Transition and policy success factors"* and contains the 2 codes:

- Success factor - collaboration
- Success factor - political/organisational

A new code group is introduced for the Rotterdam interviews compared with Amsterdam labelled *"Policies - Various"* (in brown), as often the interviewees from Rotterdam were referring to policy goals, measures, public participation processes and others without specifying the exact policy to which they belong. The code-document analysis (see table A4.3) shows that both conversations were also dominated by discussions on topics corresponding to this code group. The new mobility vision of Rotterdam which is currently in preparation was mentioned mostly by Kristiaan Leurs (Strategic Advisor Mobility) while the RMA was discussed with both interviewees equally. Both interviewees highlighted important aspects related to the politics of the city and its historical development. Only Kristiaan Leurs mentioned success factors and provided recommendations for this thesis study.

			1: Interview transcript - Jan van de Ree -... 86	2: Interview transcript - Kristiaan Leurs -... 68	Totals
Collaboration with other cities/stakehold...	1	8	3	5	8
History	1	6	3	3	6
Introduction interviewee	1	3	3		3
Policies - New mobility vision	2	8	1	7	8
Policies - Other	3	9	5	4	9
Policies - RMA	3	10	5	5	10
Policies - Various	5	63	46	17	63
Politics in the city	3	25	15	10	25
Recommendations for thesis	2	3		3	3
STEEP trends	4	20	7	13	20
Transition and policy success factors	2	3		3	3
Totals			88	70	158

Table A4.3. Atlas.ti code-document analysis - interviews City of Rotterdam.

INTERVIEWS CITY OF UTRECHT REPRESENTATIVES

Transcript files:
1) Interview transcript Ronald Tamse (Senior Policy Advisor and Traffic Engineer / Urban Planner)
2) Interview transcript Marjo de Kraker (Senior Designer Public Space Centre Utrecht)

The open coding process featured applying a total of 33 open codes to quotations, which are sometimes whole paragraphs and, other times - sentences. For some sentences/paragraphs, multiple codes have been applied. These 33 codes were then grouped into 10 code groups. The process was made easier and clearer using a similar starting code name and colouring. The different code groups correspond to a different colour:

Name		Name	Grounded	Groups
Collaboration with other cities/stakeholders	1	Collaboration with / inspiration from other cities & stakeholders	5	[Collaboration with other cities/stakeholders]
History	1	Introduction interviewee	7	[Introduction interviewee]
Introduction interviewee	1	Policies - Inner city	8	[Policies - Inner City Omgevingsvisie]
Policies - Inner City Omgevingsvisie	8	Policies - Inner city - (mobility) measures	20	[Policies - Inner City Omgevingsvisie]
Policies - Other	6	Policies - Inner city - (potential) impact	5	[Policies - Inner City Omgevingsvisie]
Policies - Various	6	Policies - Inner city - current baseline/challenges	16	[Policies - Inner City Omgevingsvisie]
Politics in the city	2	Policies - Inner city - goals	7	[Policies - Inner City Omgevingsvisie]
Recommendations for thesis	1	Policies - Inner city - piloting/temporary	2	[Policies - Inner City Omgevingsvisie]
STEEP trends	5	Policies - Inner city - public opinion	2	[Policies - Inner City Omgevingsvisie]
Transition and policy success factors	2	Policies - Inner city - public participation	9	[Policies - Inner City Omgevingsvisie]
		Policies - Other - Bestemmingsplan	3	[Policies - Other]
		Policies - Other - MP2040	1	[Policies - Other]
		Policies - Other - Omgevingsvisie	4	[Policies - Other]
		Policies - Other - Omgevingswet	5	[Policies - Other]
		Policies - Other - RSU 2040	3	[Policies - Other]
		Policies - Other - University campus area	2	[Policies - Other]
		Policies - Various - current baseline / challenges	18	[Policies - Various]
		Policies - Various - impact	4	[Policies - Various]
		Policies - Various - mobility measures	17	[Policies - Various]
		Policies - Various - piloting	3	[Policies - Various]
		Policies - Various - public opinion	1	[Policies - Various]
		Policies - Various - public participation	8	[Policies - Various]
		Politics - administration	18	[Politics in the city]
		Politics - finances	13	[Politics in the city]
		Recommendation for my thesis	2	[Recommendations for thesis]
		Success factor - collaboration	2	[Transition and policy success factors]
		Success factor - political/organisational	5	[Transition and policy success factors]
		Trends - 15-minute city	4	[STEEP trends]
		Trends - environmental	2	[STEEP trends]
		Trends - interdisciplinarity	7	[STEEP trends]
		Trends - politics	7	[STEEP trends]
		Trends - social	1	[STEEP trends]
		Utrecht historical development	3	[History]

Figure A4.3. Open codes and code groups - interviews City of Utrecht.

The colour **<black>** is aligned with code group *"History"* and contains the code:
- Utrecht historical development

The colour **<purple>** is aligned with code group *"Collaboration with other cities/stakeholders"* and contains the code:
- Collaboration with / inspiration from other cities & stakeholders

The colour **<gray>** is aligned with code group *"Introduction interviewee"* and contains the code:
- Introduction interviewee

The colour **<red>** is aligned with code group *"Policies - Inner City Omgevingsvisie"* and contains the 8 codes:
- Policies - Inner city
- Policies - Inner city - (mobility) measures
- Policies - Inner city - (potential) impact
- Policies - Inner city - current baseline/challenges
- Policies - Inner city - goals
- Policies - Inner city - piloting/temporary
- Policies - Inner city - public opinion
- Policies - Inner city - public participation

The colour **<orange>** is aligned with code group *"Policies - Other"* and contains the 6 codes:
- Policies - Other - Bestemmingsplan
- Policies - Other - MP2040 *(referring to Mobiliteitsplan 2040)*
- Policies - Other - Omgevingsvisie
- Policies - Other - Omgevingswet
- Policies - Other - RSU 2040 *(referring to Ruimtelijke Strategie Utrecht 2040)*
- Policies - Other - University campus area

The colour **<brown>** is aligned with code group *"Policies - Various"* and contains the 6 codes:
- Policies - Various - current baseline / challenges
- Policies - Various - impact
- Policies - Various - mobility measures
- Policies - Various - piloting
- Policies - Various - public opinion
- Policies - Various - public participation

The colour **<blue>** is aligned with code group *"Politics in the city"* and contains the 2 codes:
- Politics - administration
- Politics - finances

The colour **<yellow>** is aligned with code group *"Recommendations for thesis"* and contains the code:
- Recommendation for my thesis

The colour **<turquoise>** is aligned with code group *"STEEP trends"* and contains the 5 codes:
- Trends - 15-minute city
- Trends - environmental
- Trends - interdisciplinarity
- Trends - politics
- Trends - social

The colour **<pink>** is aligned with code group *"Transition and policy success factors"* and contains the 2 codes:
- Success factor - collaboration
- Success factor - political/organisational

As can be observed, for Utrecht, the code group *"Policies - New vision"* is missing as the city is not in the process of developing a new mobility policy, as are both Amsterdam and Rotterdam. The code-document analysis (see table A4.4) shows that the inner city omgevingsvisie was mostly discussed with the interviewee Marjo de Kraker (Senior Designer Public Space Centre Utrecht). In contrast, Ronald Tamse (Senior Policy Advisor and Traffic Engineer / Urban Planner) has discussed a lot of aspects relating to the policies in the city but often has not specified the exact policies. Both interviewees have discussed aspects relating to the city's history, politics, and STEEP trends and have provided a recommendation for this thesis study. Only Ronald Tamse has touched upon the success factors.

		1: Interview transcript - Ronald Tamse -... 110	2: Interview transcript - Marjo de Kraker... 88	Totals
Collaboration with other cities/stakeholders	1 5	4	1	5
History	1 3	2	1	3
Introduction interviewee	1 7	4	3	7
Policies - Inner City Omgevingsvisie	8 67	3	64	67
Policies - Other	6 18	18		18
Policies - Various	6 51	50	1	51
Politics in the city	2 28	12	16	28
Recommendations for thesis	1 2	1	1	2
STEEP trends	5 20	13	7	20
Transition and policy success factors	2 7	7		7
Totals		**114**	**94**	**208**

Table A4.4. Atlas.ti code-document analysis - interviews City of Utrecht.

INTERVIEW UNIVERSITY OF AMSTERDAM REPRESENTATIVE

Transcript file:
Interview transcript Katherine VanHoose (Researcher)

The open coding process featured applying a total of 23 open codes to quotations, which are sometimes whole paragraphs and, other times - sentences. For some sentences/paragraphs, multiple codes have been applied. These 23 codes were then grouped into 8 code groups. The process was made easier and clearer using a similar starting code name and colouring. The different code groups correspond to a different colour:

Name	
City of Amsterdam	9
City of Rotterdam	1
City of Utrecht	1
Comparison/lessons from other cities	1
Introduction interviewee	1
Recommendations for thesis	1
STEEP trends	4
University perspective	5

Name	Grounded	Groups
City of Amsterdam - administration	9	[City of Amsterdam]
City of Amsterdam - Autoluw	4	[City of Amsterdam]
City of Amsterdam - current baseline/challenges	7	[City of Amsterdam]
City of Amsterdam - finances	2	[City of Amsterdam]
City of Amsterdam - pilots impact	1	[City of Amsterdam]
City of Amsterdam - public opinion	1	[City of Amsterdam]
City of Amsterdam - public participation	4	[City of Amsterdam]
City of Amsterdam - temporary measures	12	[City of Amsterdam]
City of Amsterdam - transition progress	4	[City of Amsterdam]
City of Rotterdam - transition approach	2	[City of Rotterdam]
City of Utrecht - current baseline/challenges	1	[City of Utrecht]
Comparison/lessons from other cities	11	[Comparison/lessons from other cities]
Introduction interviewee	2	[Introduction interviewee]
Recommendation for my thesis	2	[Recommendations for thesis]
Trends - (lack of) interdisciplinarity	4	[STEEP trends]
Trends - COVID	1	[STEEP trends]
Trends - political	3	[STEEP trends]
Trends - social	1	[STEEP trends]
University - collaboration challenges with City of Amsterdam	4	[University perspective]
University - impact measures	2	[University perspective]
University - mobility measures	1	[University perspective]
University - recommendation for City of Amsterdam	4	[University perspective]
University - theory on transition experiments and pilots	4	[University perspective]

Figure A4.4. Open codes and code groups - interview University of Amsterdam.

The colour **<purple>** is aligned with code group *"Comparison/lessons from other cities"* and contains the code:

- Comparison/lessons from other cities

The colour **<gray>** is aligned with code group *"Introduction interviewee"* and contains the code:

- Introduction interviewee

The colour **<red>** is aligned with code group *"City of Amsterdam"* and contains the 9 codes:

- City of Amsterdam - administration
- City of Amsterdam - Autoluw
- City of Amsterdam - current baseline/challenges
- City of Amsterdam - finances
- City of Amsterdam - pilots impact
- City of Amsterdam - public opinion
- City of Amsterdam - public participation
- City of Amsterdam - temporary measures
- City of Amsterdam - transition progress

The colour **<brown>** is aligned with code group *"City of Rotterdam"* and contains the code:

- City of Rotterdam - transition approach

The colour **<orange>** is aligned with code group *"City of Utrecht"* and contains the code:

- City of Utrecht - current baseline/challenges

The colour **<green>** is aligned with code group *"University perspective"* and contains the 5 codes:

- University - collaboration challenges with City of Amsterdam
- University - impact measures
- University - mobility measures
- University - recommendation for City of Amsterdam
- University - theory on transition experiments and pilots

The colour **<yellow>** is aligned with code group *"Recommendations for thesis"* and contains the code:

- Recommendation for my thesis

The colour **<turquoise>** is aligned with code group *"STEEP trends"* and contains the 4 codes:

- Trends - (lack of) interdisciplinarity
- Trends - COVID
- Trends - political
- Trends - social

As can be observed, the interviewee from the University of Amsterdam mostly discussed aspects related to the City of Amsterdam and the perspective of the university in terms of the mobility transition. The transitions of Utrecht and Rotterdam have only been briefly mentioned during the interview. This can be further observed from the code-document analysis (see table A4.5). The interviewee also often compared the situation in Amsterdam with that of other European cities, such as Ghent and London. Four STEEP trends have been mentioned, and a direction recommendation has been provided for this thesis study. Lastly, Katherine VanHoose (Researcher) highlighted the challenges in terms of the university's collaboration with the city in several instances.

			1: Interview transcript - Katherine VanHoose - University of Amsterdam (73)
City of Amsterdam	9	37	37
City of Rotterdam	1	2	2
City of Utrecht	1	1	1
Comparison/lessons from other cit...	1	11	11
Introduction interviewee	1	2	2
Recommendations for thesis	1	2	2
STEEP trends	4	8	8
University perspective	5	15	15
Totals			78

Table A4.5. Atlas.ti code-document analysis - interview University of Amsterdam.

LINK BETWEEN CODING AND RESEARCH STEPS

The table below (see table A4.6) shows the usability of the different code groups per research step of this study. This has been prepared to identify where the interview findings could be used to enrich the desk research in the various research steps.

Research step		Usable code group
STEP 1. Operationalisation		**Transition and policy success factors:** Project bundles Cities of Amsterdam, Rotterdam and Utrecht
STEP 2. Case Study Research	STEEP analysis (landscape)	**STEEP trends:** All project bundles
	Review of formal rules, elements and actors (regime)	**History:** Project bundles Cities of Amsterdam, Rotterdam and Utrecht **Collaboration with other cities/stakeholders:** Project bundles Cities of Amsterdam, Rotterdam and Utrecht **Policies - Autoluw:** Project bundle City of Amsterdam **Policies - RMA:** Project bundle City of Rotterdam **Policies - Inner City Omgevingsvisie:** Project bundle City of Utrecht **Policies - Various:** Project bundles Cities of Rotterdam and Utrecht **Policies - Other:** Project bundles Cities of Amsterdam, Rotterdam and Utrecht **Politics in the city:** Project bundles Cities of Amsterdam, Rotterdam and Utrecht **City of Amsterdam; City of Rotterdam; City of Utrecht:** Project bundle University of Amsterdam **University perspective:** Project bundle University of Amsterdam
STEP 4. Conclusions and recommendations		**Recommendations for thesis:** All project bundles

Table A4.6. Link between coding and research steps.

APPENDIX 5.
SUCCESS FACTORS - GROUPING, ALLOCATION, REALLOCATION AND PARAPHRASING

PROGRAMMATIC ASSESSMENT
Maximum possible score of (1) per success factor

Interdisciplinary policymaking rephrased to

Mobility policy program is delivered in consideration with other related policy areas

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Coherence of policy goals reallocated from 'Degree of innovation' and rephrased to

Policy program features mutually supportive goals working towards the achievement of the overarching policy goal

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Integration of several policy instruments of different nature and *Presence of policy instruments on all city scales, including street level*
grouped into

Integration of several policy instruments of different nature and scales

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Results of the policy are 'visible' in the long-term and *Presence of positive quantitative impacts*
grouped into

Policy produces positive social impacts (quantitative) in the long-term

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

PROCESS ASSESSMENT
Maximum possible score of (1) per success factor

Lack of capacity (personnel) and knowledge rephrased to

Presence of enough capacity (personnel) and knowledge throughout the policy cycle

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Lack of coherence and collaboration between different municipal departments
Lack of clear roles within the organization
Municipal departments working with the same tempo
Conflict among stakeholders involved in the policy cycle
Mismatch between municipal departments
grouped into

Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Involvement of stakeholders in the policy cycle reallocated from 'Process inclusivity' and rephrased to

Stakeholders affected by the policy actively collaborated with policymakers throughout the different phases of the policy cycle

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Lack of assessment mechanisms and *Existence of data for monitoring impact*
grouped into

Presence of data for monitoring impact and sufficient assessment mechanisms

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

POLITICAL ASSESSMENT

Maximum possible score of (1) per success factor

Clear and straightforward policies and *Civilians and public administration understand the policy goals and direction in all policy cycle stages* grouped into

Policy documents have a clear and straightforward direction which is understood by both civilians and public administration throughout the whole policy cycle

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Trust and support for government/policy rephrased to

Society and public administration trust and support the policy direction, and those who have put it forward

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Presence of a stable political landscape rephrased to

Presence of a stable political landscape in the city

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

Political survival of governing party and *Politicians get re-elected* grouped into

Political survival of the governing body

Scoring mechanism:
0 (lowest), 0.5 or 1 (highest)

TEMPORAL ASSESSMENT

Maximum possible score of (2) per success factor

Lack of adequate and dedicated funding rephrased to

Presence of sufficient and dedicated local funding anticipating the changing needs for sustainable mobility in cities

Scoring mechanism:
0 (lowest), 1 or 2 (highest)

Setting general policy goals rephrased to

Framing of general policy goals to anticipate changing circumstances on the lower geographical scales

Scoring mechanism:
0 (lowest), 1 or 2 (highest)

PROCESS INCLUSIVITY

Involvement of stakeholders in the policy cycle reallocated to 'Process assessment'

PACE OF POLICY ADOPTION

No success factors linked to it.

DEGREE OF INNOVATION

Coherence of policy goals reallocated to 'Programmatic assessment'

APPENDIX 6.
STEEP ANALYSIS

SOCIAL BARRIERS

This section features a review of one global trend and one European trend, which have been mentioned in various journal articles and reports in relation to their substantial impact on mobility transitions, among many other policy domains.

Urbanisation and population growth

Based on the World Urbanisation Prospects report by the United Nations (2019), the percentage of urban population worldwide in 2015 was 54% with projections to grow to 62.5% by 2035. In contrast, Europe had an urban population share of 74% in 2015, with growth projections to 79% in 2035.

A new method designed to capture the urban-rural continuum and facilitate better international comparisons was developed in October 2018, namely the Degree of Urbanisation. It was developed by six international organisations and has been endorsed by the United Nations Statistical Commission in 2020 (Dijkstra et al., 2021; UN-Habitat, 2022). The method divides a territory into (Dijkstra et al., 2021; UN-Habitat, 2022, p.35):

- Cities – urban centres with a total population of at least 50,000 in a high-density cluster of grid cells (at least 1,500 inhabitants per km^2);
- Towns and semi-dense area – urban cluster with a total population of at least 5,000 in contiguous moderate-density grid cells (at least 300 inhabitants per km^2); and
- Rural areas – grid cells outside urban clusters with a density of less than 300 inhabitants per km^2.

The methodology further divides cities into four size classes (UN-Habitat, 2022, p.49):

- Small cities - a population between 50,000 and 250,000 inhabitants.
- Medium-sized cities - a population between 250,000 and 1 million inhabitants.
- Large cities - a population between 1 and 5 million inhabitants.
- Very large cities - a population of at least 5 million inhabitants.

The World Cities Report by the UN-Habitat (2022) delves into the degree of urbanisation worldwide and the drivers of it in the different regions of the world. Based on this report, by 1965, the global population was equally distributed among the three types of territories – cities, towns and semi-dense areas, and rural areas. In 2020, about 49% of the population lived in cities, 29% in towns and semi-dense areas, and 22% in rural areas. The share of population living in cities is projected to grow to 58% by the year 2070 (UN-Habitat, 2022). In terms of geographic regions, Europe will experience the smallest increase in city population share among all 9 world regions. The population growth in all three types of territories invariably leads to spatial expansion. Studies have suggested that urban areas are growing at a higher rate than population growth, and population densities have been declining as a result of dispersed patterns of urbanisation aggravating the issue of urban sprawl (Angel et al., 2016; UN-Habitat, 2019).

Historically, the higher concentration of population in cities has been associated with the transformation from agrarian to industrialised societies where unique opportunities for social and economic progress begin to exist. On the other hand, when public institutions are not well-equipped to deal with the challenges posed by this trend, rapid population growth in cities coupled with urban sprawl could result in negative environmental and socio-economic impacts, such as increased energy consumption, higher costs for providing infrastructure (which could lead to an unequal distribution of services), environmental degradation, congestion, crowding, among others (UN-Habitat, 2022).

Studies have reported on the negative impacts urbanisation and sprawl could have in relation to urban mobility (Commission of the European Communities, 2004; Travisi et al., 2006; Rukmana, 2018), as they reinforce the need to travel and increase the private motorised transport dependence, itself leading to increased traffic congestion, travel times and polluting emissions (Graaf et al., 2021; Loorbach et al., 2021). For instance, there is a strong correlation between urban sprawl and vehicle kilometres travelled on daily journeys. The decentralisation of work and residential destinations has led to an increase in distance travelled with consequent economic and emissions costs (Kenworthy & Laube, 1996; Dunphy, 1997).

Urbanisation and population growth - reflection on the three cities

The current population of the Netherlands is 17,993,506 people. It is projected to grow continuously to 20.7 million inhabitants by the year 2070, mainly due to migration and increased longevity (CBS, 2024). Based on the World Urbanisation Prospects report by the United Nations (2019), 93% of the Dutch population resides in urban areas, showing that the Netherlands is a highly urbanised country. Most of the population lives in small and medium-sized cities, resulting from the country's polycentric urban structure, where most urban regions have multiple urban cores located at relatively short distances from each other (Nabielek et al., 2016). The Randstad is the most densely populated area in the Netherlands, comprising the provinces of North Holland, South Holland, Utrecht and Flevoland, including the cities of Amsterdam, Rotterdam and Utrecht (Nabielek et al., 2016).

In 2024, the population of Amsterdam is 931,748, an increase of 15% from 10 years ago (Onderzoek en Statistiek, 2024). The population of Rotterdam in 2024 is 670,610 compared to 2014, when it was 618,357, which shows an increase of 8% for a period of 10 years (CBS, 2024). The population of Utrecht in 2024 is 374,374, which is an increase of 14% for a period of 10 years (Utrecht Monitor, 2024). As observed, the population of Rotterdam is growing at the slowest rate among the three cities. In contrast, Rotterdam takes up the biggest area in hectares of all three. The built-up areas of all three municipalities are growing (see table A6). Occupying the most land, Rotterdam could be considered the most sprawled of the three. This further explains the population density data for the cities. The population density of Amsterdam in 2024 is 4,950 inhabitants per km^2, followed by Utrecht with a density of 3,991, and then Rotterdam with the least dense area with 3,070 inhabitants per km^2 (CBS, 2024). Based on the Degree of Urbanisation classification, all three cities can be considered medium-sized.

Subject	Amsterdam	Rotterdam	Utrecht
Total area (2017) in ha	21,949	32,416	9,921
Built-up area (2000) in ha	7,645	10,229	2,983
Built-up area (2017) in ha	8,244	12,081	4,247

Table A6. Total and built-up area in ha for the municipalities of Amsterdam, Rotterdam and Utrecht (data by CBS, 2023).

Population growth and inner city expansion have been further mentioned as trends impacting the urban mobility system by interviewees from all cities:

> *"The city gets more and more space to expand the city centre to this eastern side of the station. So, the Utrecht centre is growing on the new part, on the western side of the railways. We have this historic city centre on the eastern part of the railways. Together we call it the centre of the city."*
>
> - Senior Designer Public Space Centre Utrecht at City of Utrecht

> *"With the city of Amsterdam growing each year, each year there are more civilians, more visitors. We are having a really hard time to reach our goal."*
>
> - Strategic Advisor Engineering Bureau at City of Amsterdam

> *"Still, if you look back 20 years ago when you ask everyone who lived in Rotterdam to point on the map the city centre and they would point to the Lijnbaankwartier. That is literally 500m by 800m, very small. When you now ask people what is the inner city, they will point out a larger area. Maybe we do not recognise that enough - that it is growing."*
>
> - Strategic Advisor Mobility at City of Rotterdam

> *"I lived in Utrecht for seven years and the transition just in terms of population, you really feel it. When I moved there, it was not that busy... Now, I was there on Saturday. You cannot even walk to Central Station; it is so busy with the amount of people, and you can see that they are trying to catch up. Obviously, population growth is one of the main reasons why you need to change your urban mobility system in the first place. Also, being more aware of liveability and having a healthy urban environment."*
>
> - Researcher at University of Amsterdam

In the case of Rotterdam, both city representatives who were interviewed noted the changes they observe in the way the inner city's built-up area is developing. In the past, as noted by the head of area development in the inner city, the city centre was mostly for "*working, shopping, fun, going out to the pub and the discotheque*". Nowadays, there is a growth in urban dwellings in the inner city demonstrating a change in the land uses of that area and evoking new urban challenges – "*We see that there becomes tension between clubs and housing. We still want to have the clubs in the inner city, but we also want to make it possible for people to sleep during the night. We have some big problems with that going on.*"

Ageing population

Population ageing has been a long-term development in Europe driven by consistently low birth rates and higher life expectancy. In 2023, older people (65 years and over) had a 21.3 % share of the total population. Ten years earlier, in 2013, the share of those aged 65 and over was 18.3%. It is projected that the elderly population in the EU will account for 32.5% by the year 2100 (Eurostat, 2024).

The result of this demographic shift is that the proportion of working-age people is shrinking while the number of retiring people is growing. The shrinking workforce will lead to labour supply shortages, putting increasing pressure on those of working age to provide for the social expenditure required by the ageing population and potentially necessitating the extension of the retirement age in Member States (The Lancet Regional Health - Europe, 2023; Eurostat, 2024). Next, this trend could have significant implications for economic growth, productivity and consumption, government revenue, pension funds, healthcare, and social services (UN-Habitat, 2022; The Lancet Regional Health - Europe, 2023).

In terms of the transport sector, to replace retiring and exiting staff or meet the increased labour demand, on average, 300,000 people need to be hired annually (Christidis et al., 2014). However, the ageing population does not only exert pressure on the labour supply. Older people tend to face mobility issues which need to be addressed to ensure that the transport network remains accessible to them (Steer, 2022). Therefore, in planning, to accommodate the increasing elderly population, cities are beginning to create public spaces, transport and buildings which are accessible to people with restricted mobility (UN-Habitat, 2022). Elderly people are also less likely to be digitally literate or connected, making it more difficult for them to access travel information online and, in general, engage with the increasingly digital transport networks (Steer, 2022).

Ageing population - reflection on the three cities

The elderly population (65 years and over) of the Netherlands stands at 20.5% of the total population in 2024 (CBS, 2024). The Randstad has a relatively young population in comparison to the rest of the country (see figure A6.1).

Of all three case study cities, Rotterdam has the highest share of 65+ population, which amounts to 15.7% in 2024 (CBS, 2024). Next is Amsterdam, with an elderly population of 13.6% in 2024 (Onderzoek en Statistiek, 2024), followed by Utrecht with 10.8% (Utrecht Monitor, 2024).

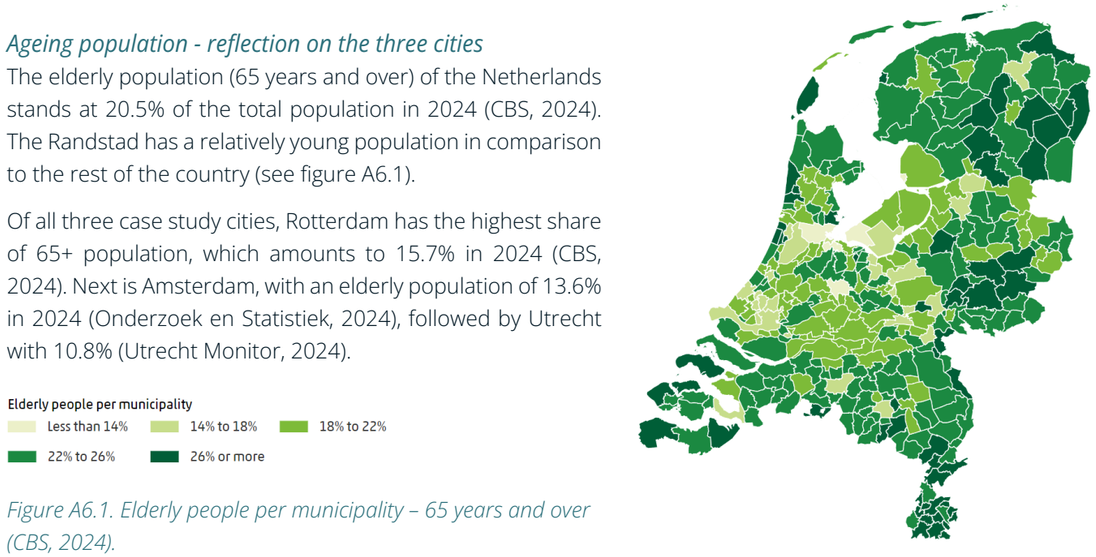


Figure A6.1. Elderly people per municipality – 65 years and over (CBS, 2024).

TECHNOLOGICAL FACILITATORS AND BARRIERS

This section features a review of two global technological trends which are shaping the future of cities and mobility while also posing societal implications when applied in the context of urban mobility and policymaking.

Digitalisation

Cities globally are experiencing a wave of digitalisation reshaping the way citizens live, work, learn and play. In terms of urban planning, digitalisation encompasses a range of smart technological innovations enabling big data collection, large-scale data analytics, machine learning and others. Often, such developments are associated with the smart city paradigm of urban policy (UN-Habitat, 2022). The uptake of environmental technologies (i.e., green tech) is demonstrated by an average growth rate of 7.3% annually of global revenues in environmental technology and resource efficiency (Roland Berger, 2021).

Some of the prominent applications of smart technological innovations in the transport domain include:

- *Artificial Intelligence* – increasingly used by municipalities in the form of virtual agents for issuing parking permits and in road traffic management (UN-Habitat, 2022).
- *Connected and automated vehicles (CAVs)* with vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) technologies integrated (Steer, 2022).
- *Digital Twins* – virtual representations of urban objects at various scales; digital counterparts of the urban fabric used as planning tools (UN-Habitat, 2022).
- *Digitalisation* of information provision (real-time data on-the-go) and payments (Steer, 2022).

With their benefits linked to the transition towards less car dependency, as acknowledged by scholars, the reliance on technological innovations in mobility is likely to continue (Banister, 2019; Groth, 2019). Such innovations, especially those related to providing real-time information during a trip, have often been linked with helping to increase the convenience of transport services (Rizos, 2010; Sochor & Nikitas, 2015). Another example is the provision of shared mobility services, which could increase the accessibility to transport services for those who previously had a low range of options available (Snellen & de Hollander, 2017).

Despite all the benefits, especially in terms of efficiency and convenience, such technologies might bring, they also present some challenges for cities, ranging from cybersecurity threats to rising social exclusion. For instance, technological advancements in the transport system could lead to the exclusion of certain users who are unable to cope with these changes, e.g., due to poor IT literacy or inability to acquire a smartphone (Durand & Zijlstra, 2020; Steer, 2022).

Digitalisation - reflection on the three cities

The Dutch population is highly digitised, as evidenced by various statistics. For example, in 2022, 97% of Dutch people aged 12 or older had access to the internet at home. In the same year, 89% of the Dutch population used a smartphone to access the internet, and 91% of people aged 16 or above owned a smartphone. Within the EU, the Netherlands is the country with the largest share of households with internet access at home – 98% of Dutch households in 2022 (Arends, 2023). In terms of digitalisation and innovations in mobility in the Netherlands, prominently, the Dutch public transport smart card (in Dutch: ov-chipkaart) was rolled out in 2005, followed by the release of the first public transport planning app in 2008, the introduction of a cashless payment system in Dutch buses in 2018, and the first Mobility-as-a-Service pilots in 2020 (Durand & Zijlstra, 2020; see figure A6.2).

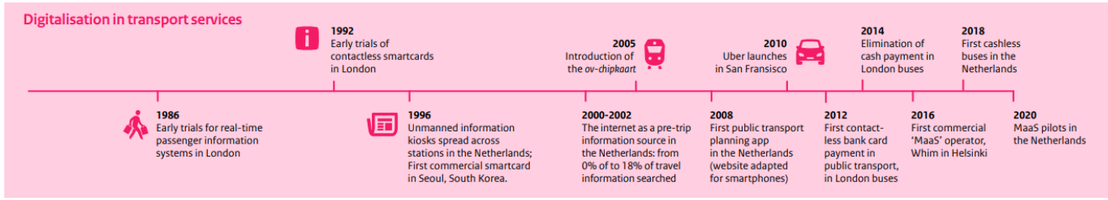


Figure A6.2. Timelines of digitalisation in transport services (with an emphasis on the Dutch situation) (Durand & Zijlstra, 2020).

All three case study cities have a digital agenda they follow, as well as various developments related to urban technological innovations. Amsterdam, for example, has the Digital City Agenda 2023-2026. There are many projects where they use innovation and data to solve urban challenges. A recent publication by the municipality lists a total of 58 projects which have collected or are collecting data in public spaces in Amsterdam (Sahertian & Boxem, 2024). On the open research portal of the municipality, the collection related to the domain mobility in the innovation agenda of the city features a description of 16 projects working on innovations, such as Mobility-as-a-Service, Intelligent Speed Adaptation, self-driving boats, shared mobility, among others (City of Amsterdam, n.d.). They are also working on a Digital Urban Planning Lab where new technologies for urban planning are explored, such as the development of Amsterdam's digital twin, the use of interactive 3D visualisations and augmented reality for digital public participation, 3D modelling of development projects, etc. (City of Amsterdam, n.d.).

Rotterdam works on the digitalisation trend as part of its Digital City Programme. As part of it, they are developing the world's first Open Urban Platform with real-time 3D data, building a 3D digital twin of the city, an app for digital participation on spatial planning matters, and augmented reality applications, among others (City of Rotterdam, n.d.). There is also a map available with the innovation projects taking place in Rotterdam, such as the use of sensors for determining parking occupancy, special laser techniques for measuring one's cycling experience, wireless charging for electric cars, etc. (City of Rotterdam, n.d.).

Utrecht has adopted the Vision Digital City 2021-2025. Utrecht is also developing its 3D model, using augmented reality and 3D visualisations for public participation in public space co-design projects, implementing new lighting technologies on zebra crossings which light up at night when a pedestrian is crossing, smart charging stations, etc. (City of Utrecht, n.d.).

Social media use rise

The use of social media is growing globally. There are more than 5 billion active social media user identities in 2024, which is an increase of 170% compared with 2014, when there were 1.8 billion active social media users (We Are Social & Meltwater, 2024). In the past decade, social media has been increasingly playing a major role in all aspects of modern life, from communicating with family and friends to gathering supporters for political protests. As a result of the rising use of social media, municipalities and other urban stakeholders have obtained access to growing amounts of data harvested from social media platforms (UN-Habitat, 2022), which could support decision-making processes. For instance, several studies suggest that the use of social media could be a cost-effective alternative to traditional data sources to extract information about traffic accidents, real-time traffic conditions, congestion, and other traffic events (Tejaswin et al., 2015; Gu et al., 2016; Salas et al., 2017).

Next to that, social media could represent a new and effective way for city authorities to gain public opinion, distribute and share information and support citizen participation (Kleinhans et al., 2015; López-Ornelas et al., 2017). A CIVITAS policy note shows various examples of how European local governments have been actively using Facebook and Twitter to communicate with citizens in their policymaking processes (CIVITAS, 2015). However, more recent studies suggest that a combination of both online and offline participation is essential to prevent the exclusion of certain social groups and promote an inclusive planning process (Deng et al., 2015; Lin & Geertman, 2019).

At the same time, the growth in social media usage over the years has also contributed to the rise of teleworking, i.e., the activity of working at home while communicating with your office by phone or email, or using the internet (Cambridge University Press & Assessment, n.d.), which was further fuelled by the COVID-19 pandemic. In April 2020, over one-third (39%) of European Union employees indicated that they were working from home, in comparison to only 20% during the pre-pandemic time (European Labour Authority, 2023).

Social media use rise - reflection on the three cities

In 2022, 70% of the Dutch population used social networks like Facebook, Twitter, Instagram or Snapchat, compared to 63% in 2017. Among the elderly population (65- to 75-year-olds), the share of social network users increased from 27% to 48% between 2017 and 2022. The percentage of people who made calls via the Internet also increased from 43% in 2017 to 79% in 2022 (Arends, 2023).

In terms of teleworking, in 2022, 64% of employees were teleworkers. The share of teleworkers is higher in bigger companies (500+ employees) compared to smaller companies (10-20 employees). The share of teleworkers in large companies was 74% in 2022, and 49% in smaller companies (Kleingeld, 2023). The Netherlands is a leader in the field of teleworking among EU member states (CBS, 2024).

The use of social media by city authorities in the Netherlands is widespread in the form of providing information to citizens – sharing updates about events and culture, informing about urban development projects, traffic changes and construction, disseminating info about green city projects, etc. Utrecht stands out as one of the few cities with a strong focus on citizen participation and community building via social media platforms. They use these channels to collect feedback and suggestions from residents on various urban initiatives (Potter, 2024). This has been further confirmed by the interviewed Senior Designer Public Space Centre from the City of Utrecht:

> *"Right now, we do more and more an internet survey and you can find those on Instagram or [...] at least on Utrecht.nl. [...] You can just fill in some inquiry, and they reach sometimes a hundred people, sometimes 5,000 people who give their opinions about plans. It really helps us, because when you just talk about plans with people who live in a neighbourhood, there is often more 'Not in my backyard' reactions. Sometimes you have to do things for the whole city, or for the whole neighbourhood, and the public youth of it is not always in the front of minds of the people who live nearby. Especially, in the centre, it is used by the whole city, it is like a living room for all of Utrecht. [...] These Instagram interviews/inquiries work very well to hear the other sounds of people who do not come to an evening for information, but you can get the opinions in another way."*
>
> - Senior Designer Public Space Centre Utrecht at City of Utrecht

ECONOMIC BARRIERS

This section features only one barrier mentioned by all interviewees as a factor significantly impacting cities' ability to pursue all goals and measures in relation to their mobility transitions.

COVID-19 impacts on budget

In 2020, the Dutch government's revenue was 351,4 billion euros, and its expenditure – 380,9 billion (almost 40 billion euros more than in 2019) (CBS, 2024). This results in a negative balance of 29,5 billion euros. The government's expenditure rose mainly as a result of the support measures to help companies, institutions and families during the coronavirus crisis. For example, the government purchased all sorts of services and goods to combat the coronavirus epidemic, such as tests, vaccines and call centres (CBS, 2022). The negative balance due to higher government spending is a trend that continued throughout 2021-2023. As reported, the last period when the government had a positive balance was 2019 (CBS, 2024).

ENVIRONMENTAL FACILITATORS

This section describes one global factor that has been the major driver of cities pursuing a low-carbon transition of their mobility systems.

Climate change and sustainability

Top priorities on major global agendas nowadays include tackling the climate crisis and keeping the global average temperature change below 1.5 degrees Celsius (e.g., the New Urban Agenda and the UN's 2030 Agenda for Sustainable Development). In the European context, the European Green Deal is the current agenda guiding the European Union towards the achievement of climate neutrality by 2050, delivering on the commitments under the Paris Agreement (Council of the EU and the European Council, 2024). In Europe, 70% of cities are in low-lying areas less than 10 metres above sea level (UN-Habitat, 2022). Most cities in Europe are already experiencing the increase of sea levels, a trend which is projected to continue (IPCC, 2019).

Within these developments, the transport sector plays a significant role in achieving sustainable urban futures. In Europe, for example, it is responsible for nearly 25% of the EU's total greenhouse gas emissions (European Environment Agency, 2024). As a result, an increasing number of cities are adopting climate strategies and action plans which comprise sector targets for mobility (Graaf et al., 2021). The existing worldviews on GHG reduction and the commitments to international low-carbon targets have been mentioned by numerous scholars as important landscape developments supporting the regime change to low-carbon mobility (Foxon et al., 2010; Mah et al., 2012; Moradi & Vagnoni, 2018).

Climate change and sustainability - reflection on the three cities

The CO_2 emissions from transport for the years 2019-2022 for the three cities can be found in the line chart below.

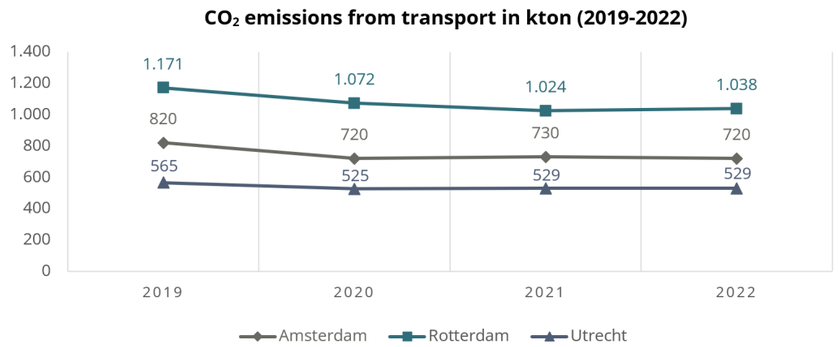


Figure A6.3. CO_2 emissions from transport in kton for the period 2019-2022 for Amsterdam, Rotterdam and Utrecht (data by City of Amsterdam Onderzoek en Statistiek, DCMR, City of Utrecht and Klimaatmonitor).

The emissions from the transport domain in Rotterdam are the highest of all three cities. This could be potentially explained by the more sprawled form of the city in comparison to Utrecht and Amsterdam, resulting in longer distances travelled, and by the modal split. In 2020, all cities experienced a significant decrease in emissions explained by the coronavirus pandemic, which, as reported in the various annual budget documents of the cities, resulted in a decrease in travel (City of Amsterdam, 2021; City of Rotterdam, 2020; City of Utrecht, 2020). Climate change as a trend has been mentioned by two interviewees as a driving force behind the development of the policies targeting sustainable urban spaces and low-carbon mobility:

> *"Now, the first 3 years are finished, and we need to go back to the question of what were we planning, what do we want now. With the new administration and new insights about the housing policy, insights in the developments of mobility, in how the climate is changing rapidly, maybe irreversible, and there is also some things that become in 'fashion'."*
>
> - Policy Advisor Traffic and Public Space at City of Amsterdam

> *"The last couple of weeks have been a proof of that again. We had lots of droughts, so greenery is having a hard time. Some trees lose their leaves a lot earlier in summer than they used to a couple of years ago. If we can accomplish to get more water in the soil and keep it there, we have better use of those trees, and it will be cooler and so we will be in a better place to stay if we can get more greenery in the inner city."*
>
> - Senior Designer Public Space Centre Utrecht at City of Utrecht

PLANNING & POLITICAL FACILITATORS AND BARRIERS

This section explores one global and one European trend, which have been mentioned by the majority of the consulted experts as crucial factors affecting the direction and delivery of mobility policies.

Rise of interdisciplinary research and policymaking

The complexity of sustainable mobility issues has called for greater disciplinarity in the way mobility is researched, planned and assessed. For instance, academic works increasingly link travel demand and transport planning to related fields, including gender, public health (Porrazzo et al., 2022; Sagaris et al., 2024; Sil et al., 2024), and transport justice (Verlinghieri & Schwanen, 2020; Attard, 2020). Similarly, studies are now linking urban mobility planning practices with the use of language (i.e., the narrative) (e.g., Selzer & Lanzendorf, 2019; te Brömmelstroet et al., 2022). Mode choice studies have also been often linked to other disciplines, such as psychology (Harms et al., 2021; Villena-Sanchez et al., 2022; Pettirsch et al., 2023) and tourism (Cavallaro & Dianin, 2020; Daniele et al., 2023; Blättler et al., 2024).

Furthermore, global agendas have been promoting the use of cross-sectoral expertise for the application of integrated approaches to urban planning, such as the New Urban Agenda which states: "*We will ensure coherence between goals and measures of sectoral policies, inter alia, rural development, land use, food security and nutrition, management of natural resources, provision of public services, water and sanitation, health, environment, energy, housing and mobility policies, at different levels and scales of political administration, across administrative borders and considering the appropriate functional areas, in order to strengthen integrated approaches to urbanisation and implement integrated urban and territorial planning strategies that factor them in.*" (United Nations, 2017, p. 23). On the European level, the Sustainable and Smart Mobility Strategy of the European Green Deal stresses the importance of linking sustainable and smart mobility to the UN's Sustainable Development Goals while ensuring policy coherence (European Commission, 2021; line 105).

Rise of interdisciplinary research and policymaking - reflection on the three cities

Almost all the consulted experts made it obvious that the three cities nowadays no longer plan and decide on mobility measures merely from the perspective of traffic planning or engineering. The policy advisor from Amsterdam mentioned that the social aspects surrounding transport have become an important item on Amsterdam's agenda in the past few years, such as the accessibility and affordability of transport modes. The strategic mobility advisor from the City of Rotterdam elaborated in detail on the way the city absorbs the changes in spatial planning and mobility. For instance, the expert stressed that *"mobility is not a goal in itself"*, and that mobility measures are taken always in relation to the bigger goals concerning economy and quality of life in the city: "*Questions about air pollution, health, green 20 years ago were not on the agenda*". This was also mentioned by the senior policy advisor from the City of Utrecht who clarified that "*Mobility on itself is not an issue - mobility is a result of how a city is built up. If you want changes, it is not mobility... It is the whole thing together. No one travels from A to B without a reason*."

The administration of Rotterdam is changing as well, with people from different backgrounds joining the mobility team, such as public administration graduates. The head of area development inner city from Rotterdam noted that the consideration of the different disciplines when planning measures in the city could also be explained by the accumulation of more knowledge in general throughout the years.

The senior public space designer from Utrecht, not specialising in mobility herself, mentioned that they look at public spaces as one whole, with all the uses available at them - "*it is mobility, but also green, and meeting, and garbage cans...*" - and that even if a problem concerns only one of those uses, the "*solutions are always to combine all these aspects, all these functions of the space...*". The senior designer emphasised that this would be the case, especially when it comes to historical cities like Utrecht, where a lot of uses need to fit sufficiently in smaller public spaces.

Instability of political regimes

Across Europe, governmental power is shifting to the right, with some countries even electing far-right political parties as their leaders. As of May 2024, six European countries have hard-right parties in government - Italy, Croatia, Slovakia, Hungary, the Czech Republic and Finland. In France, Belgium, the Netherlands and Austria, hard-right parties are dominating the polls (Coi, 2024).

Increasingly, young voters are also turning to the right-wing parties (Cokelaere, 2024), as observed through various pre- and post-election polls. For instance, a survey among 14-to-29-year-olds in Germany indicates that 14.5% of them would vote for the far-right 'Alternative for Germany', only outnumbered by youth who voted 'I don`t know' (Schnetzer et al., 2024).

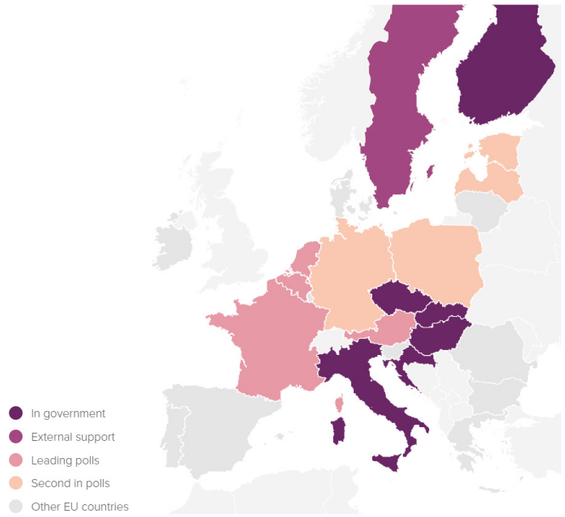


Figure A6.4. Hard-right parties in European governments – polling data as of May 2024 (data by POLITICO research; map by Coi, 2024).

Similarly, data by Ifop (2024) shows that 32% of surveyed 18-to-25-year-olds in France said that they would vote for France's far-right 'National Rally', which came as the first choice among the youth, distantly followed by the far-left 'France Unbowed'. These developments could significantly impact the direction of politics not only on the national levels, but also on the European level, also depending on the results from the European elections in 2024.

APPENDIX 7.
STEEP ANALYSIS - TABLES FROM MAIN BODY

Amsterdam	2019	2020	2021	2022	2023	2024
Budgeted	€6.177	€6.940	€7.949	€7.601	€8.112	€7.056
Expenditure	€6.267	€7.122	€7.868	€7.404	€7.990	x
Balance	€ - 90*	€ - 181**	€80*	€196*	€122*	x

**After reserves withdrawals and releases*
***Excluding withdrawal from the General Reserve of €197.9 million*

Table A7.1. Budget Amsterdam 2019-2024 – budgeted, expenditure and balance (in million euros, x1.000 euros) (data from City of Amsterdam Annual Budget Reports 2019-2024).

Rotterdam	2019	2020	2021	2022	2023	2024
Budgeted	€3.552	€5.239	€4.077	€4.871	€4.410	€4.408
Expenditure	€3.519	€3.948	€4.152	4.388	€4.573	x
Balance	€31*	€86*	€ -27*	€85*	€ - 41*	x

**After reserves withdrawals and releases*

Table A7.2. Budget Rotterdam 2019-2024 – budgeted, expenditure and balance (in million euros, x1.000 euros) (data from City of Rotterdam Annual Budget Reports 2019-2024).

Utrecht	2019	2020	2021	2022	2023	2024
Budgeted	€1.479	€1.783	€1.590	€1.733	€1.816	€1.963
Expenditure	€1.450	€1.623	€1.560	€1.754	€1.887	x
Balance	€82*	€200*	€54*	€34	€ - 17*	x

**After reserves withdrawals and releases*

Table A7.3. Budget Utrecht 2019-2024 – budgeted, expenditure and balance (in million euros, x1.000 euros) (data from City of Utrecht Annual Budget Reports 2019-2024).

APPENDIX 8.
FSSD ANALYSIS - AMSTERDAM, ROTTERDAM AND UTRECHT

AGENDA AMSTERDAM AUTOLUW *(REGIME FORMAL RULES)*

Autoluw's chapter 1 presents background information and statistics on the current mobility situation and links those to the vision's main goals. Chapter 2 presents the perspectives for the city in 2040. Chapter 3 provides the ambitions and details the measures on the topic "*more clean and active modes*" with 7 public transport measures, 2 pedestrian, and 2 cycling. Chapter 4 provides the ambitions and measures on the topic "*making space by cutting down on car journeys*", with 7 network measures, 1 behaviour measure, and 1 city logistics measure. Chapter 5 details the ambitions and measures on "*more space due to fewer parked cars*" with 5 car parking measures and 2 for shared mobility and P+R. Chapter 6 presents how different areas and street typologies will be approached. Chapter 7 provides details on the organisational, communication and financial matters regarding the implementation.

STEP A. Mobility vision

The main goal of the vision is *"more space for a liveable and accessible city"* (City of Amsterdam, 2020, p. 19). This is complemented by a package of 5 sub-goals which ultimately work together towards the achievement of the general goal, namely:

Goal 1. More space for functions associated with passing the time;
Goal 2. More space for amenities;
Goal 3. More space for alternatives to the car;
Goal 4. Cleaner air, less noise nuisance and greater road safety;
Goal 5. Inclusive city.

It is evident that both the main and the sub-goals are phrased in a general manner and do not feature specific numeric goals in their titles. Goals 1-3 call for freeing up space from motor vehicles to give space for other public space uses, such as cycle lanes, sidewalks, green areas, playgrounds and places to relax. That is also in line with the document's general goal and title on its front page: "*Amsterdam maakt ruimte*" (in English: Amsterdam is making space). Goal 4 is linked to other active policy domains and documents in the city, for example, those targeting climate objectives (e.g., Clean Air Action Plan). Still, the reduction of fossil fuel traffic here is mentioned as the major factor. Goal 5 links to the societal aspect of planning for an accessible city where vulnerable population groups are able to access and benefit from the mobility system. The 90-page document has a slightly chaotic structure, as the goals mentioned at the beginning of the document are no longer elaborated on throughout the rest of the document. Instead of structuring the measures around these 5 goals, the document introduces 3 new themes to which these measures belong, namely, more clean and active modes; making space by cutting down on car journeys; and more space due to fewer parked cars. This structure decreases the comprehensibility of the document. Numerical and quantitative goals (e.g., % reduction in car trips) are generally missing from the document. Instead, the document focuses on qualitative descriptions of the general and measure-related goals. Some of the numerical/quantitative goals which have been found throughout the document include:

Chapter 3. More clean and active modes:

- Tackling the lack of pedestrian space on **15** city streets (p.36).

Chapter 4. Making space by cutting down on car journeys:

- The cut of the Van Woustraat leads to more than **70%** traffic reduction (p.47);
- Car circulation measures to prevent through traffic on the Haarlemmer Houttuinen reduce the amount of car traffic on this route by almost **60%** (p.48);
- Reducing the speed limit to **30 km/h** on all residential streets (p.49).

Chapter 5. More space due to fewer parked cars:

- Reducing the demand for parking spots offers the possibility of removing **10,000** parking spaces by 2025 (p.57);
- The issuing of **9,500** fewer parking permits in the city up to and including 2025 will lead to the ability to remove **7,000** parking spaces (p.60);
- P+R Noord (currently 442 spaces) will get approximately **700** additional spaces (p.63).

STEP B. Current baseline

The current baseline is first presented before the beginning of the agenda preface with some figures without elaboration on, for instance, the modal split in 2017, the number of parking spaces, population growth, and car ownership, among others. Then, chapter 1 proceeds with a more in-depth description of facts and figures capturing the current situation in the city. Furthermore, sometimes, throughout the sections where the measures are elaborated, some figures are also featured showcasing the current status.

The current situation overview shows that the city of Amsterdam is growing with projections that by 2032, the city's population will be over 1 million inhabitants. This is complemented by the growing number of tourists visiting the city with a growth of 4% annually (City of Amsterdam, 2020). Concerning transportation, in 2017, the modal split for residents on weekdays was dominated by the bike (35%), followed by walking (24%), the car (19%) equally with public transport (19%), and then other modes (2%). In contrast, visitors' most common choice of transport in 2017 was the car with 46%, closely followed by PT (40%) (City of Amsterdam, 2020).

In 2017, there were 13,000 paid parking spots in the inner city, and out of those, 91% were occupied in the evenings (City of Amsterdam, 2019). The inner city modal split was dominated by the bike (60%), followed by 24% of residents travelling by public transport, and then by car – 16% (City of Amsterdam, 2020).

The agenda stresses the high pressure currently existing on the public space and the need to address this pressure. The amount of space car and car parking infrastructure is taking is approximately 78% of all space dedicated to mobility. The residents themselves also require more space for bike parking (31%), pedestrians (27%) and trees/green (14%), based on a poll enquiring, *"What do you think more space should be reserved for?"* (City of Amsterdam, 2020).

STEP C. Building blocks to get from B to A

From the list with the 27 envisioned measures, 6 measures are divided further into smaller measures which makes up a total of 39 measures. 28 of them are to be executed Now (by 2022), 7 Now and Soon (by 2025), 2 Now, Soon and Later (by 2040), 1 Soon and Later, and 1 Soon. As listed in the English summary of the Agenda Autoluw, some of the most important ones include (City of Amsterdam, 2019):

- Expanding evening and night-time public transport services (night-time metro pilot);
- Free PT travel for children (max. age 11) on Wednesday afternoons and at weekends;
- Shared bicycles at metro stations;
- Reducing the speed limit to 30 km/h on all residential streets;
- Pilot street closure scheme for Weesperstraat;
- Reducing the number of new parking permits issued (already introduced); and
- Encouraging residents to park their cars in (underground) parking garages.

The major goal for the inner city is linked to measures under the theme "*more space due to fewer parked cars*" - parking-free city centre - between Singel and Oudeschans (see figure A8.1). The area-specific measures for the inner city mentioned towards the end of the document include (City of Amsterdam, 2020):

> Eliminate the on-street parking in phases;

> Redesign streets with high-quality materials and more greenery;

> Prevent through car traffic with circulation measures, intelligent access and/or car-free areas.

Figure A8.1. Goal parking-free city centre Amsterdam – targeted area. (figure by the author)

STEP D. Strategic plan

The implementation plan for the agenda is presented in chapter 7 of the document, featuring descriptions of the collaborations and the timeline, the communication strategy, the financing and the evaluation and monitoring.

Three stakeholders are mentioned as key to the agenda's delivery: Amsterdam's residents and businesses, the government and other governmental organisations, and the internal organisation of the city administration. The document references an Appendix *'Het gesprek met de stad'* (in English: The conversation with the city), which further outlines the decision-making process surrounding the agenda (see figure A8.2). Between February and June 2019, a city-wide consultation process took place, which involved conversations with residents, entrepreneurs, experts, policymakers, intermediaries and commuters. The input from all participatory sessions was used to develop the Autoluw Agenda. They included, for example, discussion sessions in each city district, expert consultations with mobility experts, transport companies and entrepreneurs, 264 street interviews and meetups with regional authorities (City of Amsterdam, 2019).

The agenda states that the involvement of residents and businesses in the policy cycle will be continued, for example, during the street redesign processes. Amsterdam Bereikbaar has been mentioned as another key stakeholder: a partnership between Rijkswaterstaat, City of Amsterdam, ProRail, Province of North Holland, Amsterdam Transport Authority, and affiliations with NS and Breikers. The agenda further states that links will be maintained with other local authorities in the Netherlands to prevent the Autoluw measures in Amsterdam from resulting in problems elsewhere (City of Amsterdam, 2020).

Implementing the Autoluw measures will also be done in conjunction with other existing programmes, such as the Action Plan Bridges and Quay Walls and Action Plan Air Quality. A so-called PUMA programme team is responsible for the delivery of Autoluw and responds to the municipal board about the objectives and progress of implementation.

The communication strategy states that public participation processes will continue throughout the implementation, but the degree of participation varies per measure. As stated, no city-wide visibility communication measures will be taken. Instead, the focus will be on targeted communications for the different measures, for important target groups and during different moments.

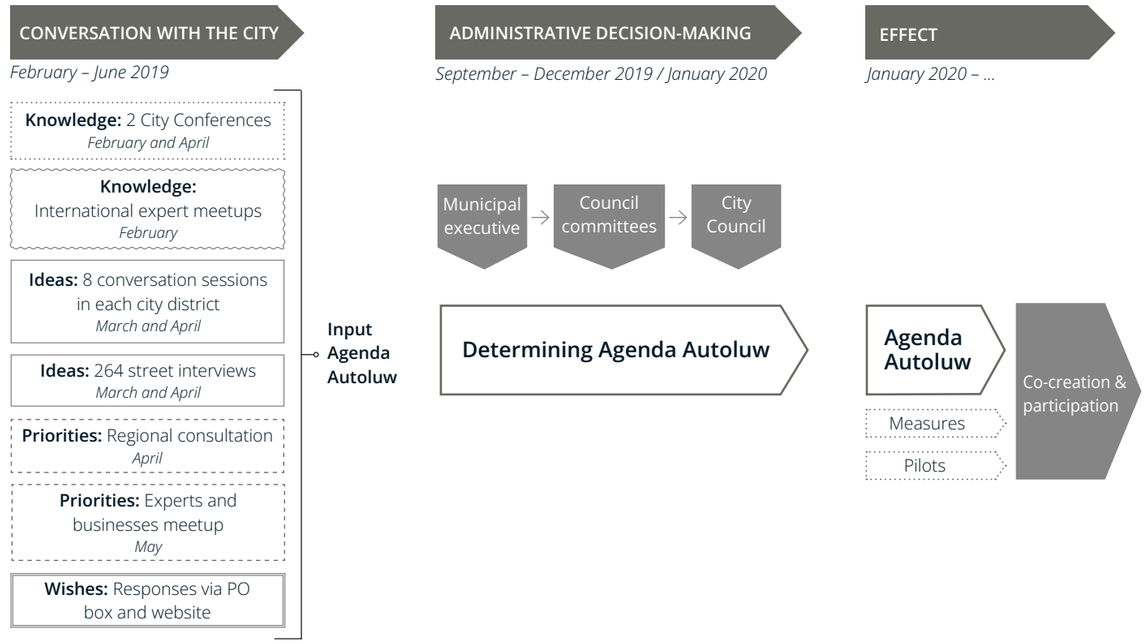


Figure A8.2. Decision-making process Agenda Autoluw Amsterdam (figure by the author, replicated from Appendix "Het gesprek met de stad" ; City of Amsterdam, 2019).

Autoluw programme is projected to cost between €500 and €700 million which concerns both new and on-going measures. For 2020-2023, €40 million has been made available for the short-term measures (Now=until 2022), as well as the preparations for the Soon and Later measures. For some of the long-term measures, especially those related to PT improvements, reliance is required on external sources of funding, such as the regional and national authorities, and EU subsidies (City of Amsterdam, 2020).

The policy document mentions that the following indicators will be monitored:

- Number of eliminated parking spaces;
- Number of parking permits issued;
- Modal split for residents and visitors; and
- Ways freed-up space has been reprogrammed.

As indicated in the agenda, annual reports will be delivered on the progress of the implementation and its effects. Based on those, measures can be adjusted. The last page of the document provides a summary of all other programmes and action plans considered when planning and implementing the Autoluw measures. Various policy disciplines are listed, including policy documents from the regional authorities.

ROTTERDAMSE MOBILITEITSAANPAK *(REGIME FORMAL RULES)*

Chapter 1 of RMA is an introduction with some references to other policy documents and the way the RMA relates to them, and an analysis of some of the challenges associated with population growth and urban density, the environment, urban space and inclusivity. Chapter 2 provides an overview of the current situation in the city concerning mobility with some facts and figures about, for example, car ownership rates, the modal split, and traffic accidents. Chapter 3 presents the four guiding principles of the agenda and elaborates on the types of measures the city will deploy. Chapter 4 explains the perspectives for the city in the long-term for the whole city area, the inner city, and for the different area types (e.g., urban districts and suburbs). Chapter 5 is a one-pager providing an overview of the mobility experiments which will take place in the city. Chapter 6 elaborates on how the agenda will be implemented, distinguishing four periods – measures by 2020, between 2022 and 2025, by 2030, and by 2040.

STEP A. Mobility vision

The document does not feature a short one-statement overarching goal as was the case with Amsterdam. Instead, in the introductory chapter, various ambitions are stated concerning the challenges the city is experiencing. For instance, the goals of accessibility are mentioned in relation to the growing city and the future demand for housing, tackling transport poverty, and a healthy and sustainable approach to transport – better air quality, less CO_2 emissions, and stimulation of clean and healthy transport modes. In chapter 2, based on the conclusions from the current transport situation in the city, the RMA's main approach is outlined as: *"The mobility transition is taking shape through the three V's: Volumebeheersing (volume control - preventing unnecessary kilometres), Veranderen (change – efficiency and modal shift) and Verschonen (clean motorised transport modes)."* The last aspect related to the 'cleaning' of the transport system is elaborated in another approach on Zero Emission Mobility, and the aspects referring to the volume control and change are detailed in the RMA. To achieve this mobility transition, the RMA puts forward four guiding principles (City of Rotterdam, 2020):

1. *More space for pedestrians, cyclists and public transport:*
   - Attractive streets and residential areas where pedestrians, bicycles and public transport have sufficient space.
   - Less through traffic and more space for residents and local traffic.
   - Main routes continue to flow smoothly.
2. *Safe and healthy connections:*
   - Safer traffic and more space for healthy and active forms of mobility.
   - Clarity of which modalities have priority in each street.
3. *Everyone can participate:*
   - More options for travelling on foot, by bike or by public transport for greater freedom in modal choice.
   - More convenience for everyone: comfortable and safe travel, easier transfers.
4. *Vital economic traffic:*
   - Transformation of the logistics system: clean and efficient city logistics.

All principles work in unison towards achieving the desired 3V's mobility transition. The policy further features a dedicated section on the vision for the inner city area where the main goals are to increase the space and opportunity for walking, cycling and using public transport. Similarly to Autoluw, the RMA does not feature many quantitative or numerical specifications concerning the targets. For instance, the city's environmental goals are mentioned in relation to reducing CO_2 emissions – *"Rotterdam has a task to reduce CO_2 emissions by 30% in 2025, and by 49% in 2030"*. However, these are ambitions outlined in other air quality- and climate-related visions.

In the *'Uitvoerings programma Mobiliteit'* (in English: Mobility Implementation Programme), which details the implementation plan for the mobility measures, there are some more concrete goals mentioned in terms of mobility, such as the goals of creating a minimum of 1,000 bicycle parking spaces in the city centre every year and achieving 1,200 less on-street car parking spaces in the centre during the active period of the current administration (City of Rotterdam, 2021).

STEP B. Current baseline

The various trends and developments in the city are outlined in chapters 1 and 2. A major focus is placed on the urbanisation challenge of building 18,000 new homes by 2022 and 50,000 by 2040. This growth comes with several other issues to address, such as the supply of additional services and functions, which would result in an increased demand for transport. Due to the growth of inhabitants, services, tourism and others, the report forecasts that the total mobility in the inner city will grow significantly (City of Rotterdam, 2020).

Some positive trends show that car traffic to, from and in the centre has been declining since 2010 and that this trend will continue. In 2016, the modal share of cars was 42%, dominating the modal split. The forecast shows that by 2040, the modal share of cars will have decreased to 28%. In contrast, the share of PT will increase from 29% in 2016 to 34% by 2040, and the share of bikes - from 29% in 2016 to 38% by 2040 – making the bike the dominant mode in the inner city (City of Rotterdam, 2020). This calls for redistributing the space to accommodate the new sustainable mobility needs.

Additionally, a large part of the car traffic on the central boulevards in the inner city is through traffic which can utilise alternative modes for short-distance trips (< 5 km) or alternative routes for longer-distance trips (5-15 km). About 60% of all traffic accidents occur on streets and boulevards with a speed limit of 50 km/h where through traffic is a large part of the car traffic, and many urban facilities and core shopping areas are concentrated there (City of Rotterdam, 2020).

STEP C. Building blocks to get from B to A

At the end of the document, a list of 37 measures is presented with titles only and maps of where they will be executed – 10 to be performed by 2022, 15 between 2022 and 2025, 8 between 2025 and 2030, and 4 by 2040. The document specifies that these measures are part of the Mobility Implementation Programme, and for their implementation, the principles laid down in the RMA are applied. Many of the projects, especially by 2022, are focused on the inner city area, such as 1) the redesign of city streets, squares and boulevards with a car-low environment (e.g., Coolsingel, Hofplein and Schouwburgplein); 2) the reduction of on-street parking and adding/expanding bicycle parking facilities (e.g., Schouwburgplein and Central Station); and 3) the execution of various experiments (e.g., on the Erasmusbrug to improve flow, space and comfort for cyclists and pedestrians and the closure of several squares to car traffic at Oude Westen). A wide variety of measures are taken in terms of their scale and nature. Some measures focus on a certain area in the city, others target a specific street or square, and others refer to the whole city area (e.g., free public transport for elderly and children). A lot of experimentation and piloting is taking place alongside structural redesign projects. The strategic mobility advisor from Rotterdam specified that experimentation is an approach Rotterdam actively pursues:

> *"In Rotterdam, we still like to say to everyone that everything is possible … That is the image of Rotterdam – the new city and everything is possible. When there is a new concept, we always tell 'Come to Rotterdam and try it!'. For example, the sharing concepts, cycling or moped … we say, 'Please come to Rotterdam'."*
>
> - Strategic Advisor Mobility at City of Rotterdam

STEP D. Strategic plan

Compared with Autoluw, the RMA does not feature a section detailing the collaborations with stakeholders, the communication, monitoring and evaluation processes, and the finances. Only a timeline regarding the different measures is featured, complemented with vision maps for each implementation period. The Mobility Implementation Programme features a more detailed explanation regarding the implementation of the envisioned measures with a concrete timeline for each and the desired outcome. As stated in the RMA, the document is an elaboration of already existing mobility policies, namely, the Stedelijk Verkeersplan Rotterdam (Rotterdam Urban Traffic Plan) and the OV-visie 2040 (Public Transport Vision 2040) and contributes to various core tasks laid down in the Omgevingsvisie (Rotterdam Environmental Vision) (City of Rotterdam, 2020). Furthermore, it contributes to other policy areas related to mobility, as stated in the document, including air and noise pollution, climate resilience, urban public space, greenery, and inclusivity.

UTRECHT'S MOBILITEITSPLAN 2040 *(REGIME FORMAL RULES)*

Chapter 1 provides the introduction to the document with details about its goal, the development process and status. Chapter 2 delves into the city's current situation regarding demographics, employment, mobility and public space. Chapter 3 presents the vision with its objectives, perspectives for 2040, and the mobility approach with five concrete steps: smart zoning, travel differently, networks in order, smart parking and smart steering. Chapters 4 to 8 correspond to each of these steps with details about how they will be applied. A lot of maps are used to illustrate the desired vision for 2040 for each step. Chapter 9 presents an assessment framework linking the vision back to its main goals and a broad phasing of the measures for the short-term (2021-2025), the mid-term (2025-2035) and the long-term (2030-2040). The investment strategy and the required cooperation are also described in this chapter. Chapter 10 provides a quantitative analysis of the policy's potential (forecasted) effects in 2040. Chapter 11 outlines how the policy implementation progress will be monitored and evaluated.

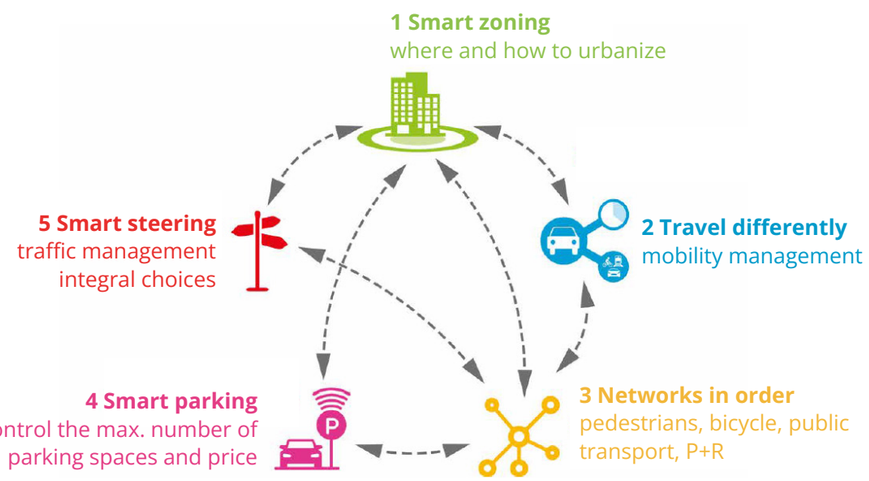


Figure A8.3. The five mobility approach steps of the Mobiliteitsplan 2040 (translated from Dutch; City of Utrecht, 2021).

STEP A. Mobility vision

Before introducing the five main steps of the mobility approach, the document first provides the ten main objectives of the MP, which are based on the existing Ruimtelijke Strategie Utrecht 2040 – RSU (in English: Spatial Strategy Utrecht 2040) (City of Utrecht, 2021). These ten goals are linked to the overall goal of using mobility to fulfil the ambition of *healthy urban living for everyone*, as laid out in the RSU 2040. Based on that, the five concrete steps for achieving the ten goals are listed (see figure A8.3).

Step 1 smart zoning refers to densification within the existing city borders and providing a range of attractive mobility options to increase proximity and reduce travel, traffic and delays. *Step 2 travel differently* refers to encouraging citizens to travel less (e.g., by working from home), at a different time outside the rush hours, and differently – using sustainable mobility options. This step aims at a travel behaviour shift. *Step 3 networks in order* relates to the need for ensuring the availability of alternatives to the car and the accessibility of those for all user groups. The vision mentions that the car is not out of the equation and will continue to be part of the daily mobility system; however, multimodal journeys are encouraged. *Step 4 smart parking* encompasses the need to limit the number of parking spaces in core business and mixed-use areas while ensuring the availability of P+R locations and alternatives to the car. *Step 5 smart steering* relates to the use of integrated and smart traffic management to distribute car parking efficiently, limit nuisance caused by car traffic, and car through traffic in and around the inner city (City of Utrecht, 2021).

As stated in the MP, the steps are interdependent but not sequential (City of Utrecht, 2021). This interdependency speaks for the existence of a coherent package of mutually supportive goals working in unison to achieve the overarching goal. Furthermore, the titles and descriptions of the steps, the ten goals, and the overarching goal lack specifics and are phrased in a general manner, leaving room for changing circumstances. There are no quantitative statements as well. However, in the forecasts for the 2040 horizon, potential quantitative impacts are mentioned, such as:

"If 20% (more than in 2015) of employees work from home in 2040 (1 day per week on average, use for step 2), then 5,600 fewer parking spaces will be occupied. If there is better cycling and public transport accessibility, then only 34% of employees will travel by car (effect of step 3: Networks in order), then another 6,500 parking spaces will become available. In 2040, only 15,800 employees will travel by car and need a parking space. A total of 12,100 parking spaces will then become available […]." - excerpt from Mobiliteitsplan 2040 (City of Utrecht, 2021, p.118).

STEP B. Current baseline

The MP 2040 presents a number of challenges the city faces, necessitating interventions in the urban mobility transport system. For instance, the city's population has been growing with approximately 5,000 inhabitants annually, and this trend is expected to continue, resulting in 450,000+ inhabitants by 2040 (City of Utrecht, 2021).

With respect to mobility, the number of trips is also growing as a result of the population growth. Forecasts predict that there will be approximately 35% more trips in 2040 compared with 2015, and this growth mainly concerns bike and PT trips. It is forecasted that there will be 75% more bike trips in 2040 compared with 2015. This calls for action to prevent the negative consequences of this growth, such as the overloading of the bike routes to the inner city and the Central Station and the overcrowding of the bicycle parking facilities around the station. Some of the bike routes in the inner city are experiencing enormous overcrowding, with Vredenburg being the number one busiest cycle route in the Netherlands (City of Utrecht, 2021). These challenges were confirmed by both interviewees from the city of Utrecht (Senior Policy Advisor and Senior Designer Public Space Centre):

> *"Nowadays, the problems we cope with are all about the enormous growth of cycling and parking of bikes. […] that bicycle parking with 12,500 places. Most, at least working days, it is hardly possible to park your bike there because it is just cramped with bikes. The problem is we need more bicycle parking space around our railway station."*
>
> - Senior Policy Advisor and Traffic Engineer / Urban Planner at City of Utrecht

> *"We enjoy bikes better than cars, but we have gotten to a point where the bicycles are becoming a problem themselves because there are so many of them. On some of the squares, it is hard to walk around because of all the bikes which are parked there. […] Every bit of space we have in the inner city is used for bicycle parking and local government finds it difficult to change that, because it is very expensive to make indoor parking for all those bikes and there are not many places to find where you can store a lot. […] which is not very good for the economy, for pedestrians and especially for pedestrians in wheelchairs or with baby strollers."*
>
> - Senior Designer Public Space Centre Utrecht at City of Utrecht

The modal split for trips to and from the inner city further demonstrates this growth. In 2015, the modal share of bikes was 49%, dominating the modal split, followed by PT with 33% and the car with 18%. Based on the forecast, following the implementation of the MP measures, the 2040 modal shares of the car and PT will drop to 14% and 31%, respectively, while the modal share of bikes will increase to 55%.

STEP C. Building blocks to get from B to A

Per step, there is often a set of very broadly defined measures without concretising particular streets or locations where these changes are envisioned. Vision maps are featured to illustrate the more concrete measures on a vision level. Based on the plans, the inner city is defined as an A zone area where traffic space is scarce, and priority is given to pedestrians and then cyclists. For that, several measures are envisioned in the inner city, such as (City of Utrecht, 2021):

- Redesign of Ledig Erf and Catharijnesingel towards a car-free environment;
- Expanding the pedestrian area;
- Better pedestrian connections between the centre and surrounding neighbourhoods;
- Expanding the indoor bike parking capacity and (temporary) outdoor parking lots;
- Alternative, parallel cycle routes around the city centre;
- An (underground) tram line across the city centre (for the long-term period);
- Alternative routes for through PT travellers around the centre;
- Introduction of paid parking;
- 30 km/h speed limits across zone A; and
- Zero-emission zone for city logistics in the city centre.

Many of these measures focus on relieving the traffic pressure in the inner city by diverting car, public transport and bicycle traffic (especially through traffic without destination centre) to alternative routes. There is a variety in the nature and scales of these projects. For instance, the introduction of paid parking is a regulatory measure, while Catharijnesingel's car-freeing is a design measure. The introduction of paid parking applies to the whole city, while the expansion of the pedestrian area applies to the inner city, indicating the variety in terms of scale. The MP2040 does not mention pilot and experimental (temporary) measures for the inner city area.

STEP D. Strategic plan

The Mobiliteitsplan 2040 offers much detail regarding the processes surrounding the development of the plan, its relation to other policies and domains, the phasing, assessment methods, financial matters, stakeholder cooperation and the monitoring and evaluation of the effects. As stated, the MP 2040 is essentially an extension and refinement of the previous mobility plan of the city Smart Routes, Smart Regulation, Smart Destination (2016). It is part of the wider Omgevingsvisie Utrecht (in English: Environmental Vision) and strongly relates to the RSU. The plan further contributes to achieving the objectives of the Nationaal Preventieakkoord (in English: National Prevention Agreement) concerning health and the Klimaatakkoord (in English: Climate Agreement), which concerns agreements on the national level to combat global warming.

The plan has been drawn up in consultation with residents, various social organisations, businesses, knowledge institutes, provincial authorities, surrounding municipalities and the national government. This participatory process took place in 2019 and 2020 in the form of, for example, digital workshops and working sessions (City of Utrecht, 2021). Other key stakeholders which are mentioned are the U10 network of 16 municipalities in the region of Utrecht, the Province of Utrecht, the Ministry of Infrastructure and Water Management, the Ministry of Economic Affairs and Climate, employers in the field of mobility management, area developers, ProRail, among others.

The total investment required for the plan until 2040 is estimated at around 2.5 to 4 billion euros. A substantial part of this investment will come from other authorities and programmes.

Concerning the monitoring of the effects of the plan, the city uses a wide range of indicators, such as the development of the modal split over time, traffic volumes and flows, parking use (e.g., parking pressure in public spaces), road safety, resident satisfaction, inclusivity of mobility (e.g., walking distances to stops and stations), working from home and others. Information on all these indicators will be reported annually in a mobility monitor report. Based on these reports, the policy direction will be evaluated regularly to support policy choices and changes (City of Utrecht, 2021).

APPENDIX 9.
STAKEHOLDERS AND PUBLIC PARTICIPATION IN AMSTERDAM

Policy cycle		Key stakeholders involved	Means of involvement	Goal(s) of involvement	Degree of participation
Agenda-setting and policy formulation		District city authorities, residents, entrepreneurs	District meetings centre (March and April 2019)	Gather input for the development of policy Agenda Autoluw	**INFORM and CONSULT**
		Experts, businesses and entrepreneurs, commuters, visitors, residents, transport partners in the region, municipal policy officials	City Conferences (Feb and April 2019)		
		Municipalities, transport authorities and the government	Regional consultation (April 2019)		
		Mobility experts, entrepreneurs and transporter providers	Experts and businesses meetup (May 2019)		
		People passing on streets, at squares, etc.	264 street interviews (March and April 2019)		
		Policymakers from NL and abroad	International expert meetups (Feb 2019)		
Policy decision-making and implementation	*Underground parking garage Vijzelgracht (PUSH)*	Residents and businesses of Weteringbuurt and Noorderbuurt	Online design sessions, website	Co-design of street spaces following the removal of on-street parking spots	**INFORM, INVOLVE and COLLABORATE**
	Pilot closure Weesperstraat (PUSH)	- Residents, resident associations, visitors and users of route planners - Businesses, logistics companies, taxi companies, parking garage companies - Social and cultural institutions	Informing via navigation systems and signage, social media, information evenings, newsletters, website, apps, survey, etc.	Inform of the traffic regulation changes	
		- Emergency services, hospitals, GGD - PT operators - Rijkswaterstaat	Meetings; Informed via route planners, internal briefings	Involve in the preparation and implementation of measures	
	Restricted car access Oudezijde area (PUSH)	Residents, businesses and taxi companies	In-person board meetings; Informed via letters, newsletters, website, local media, social media	Involve in a co-design process regarding the package of measures	
	Orange carpet (PULL)	Residents and businesses	Meetings, questionnaires, BouwApp, etc.	Co-design of street spaces following the removal of on-street parking spots	
	Redesign of Prins Hendrikkade (PULL)	Residents, businesses and social and cultural institutions in the area	Information meetings, working site visits from portfolio holder and city district manager, email, WhatsApp and personal conversations	Consultation on draft redesign plans	
	7 km cycle route (PULL)	Residents, businesses, other interest groups	Information meetings, website, etc.	Consultation on draft redesign plans on different streets	

[continues on the next page]

Policy cycle		Key stakeholders involved	Means of involvement	Goal(s) of involvement	Degree of participation
Policy decision-making and implementation	*30 km/h speed limits (PUSH)*	Emergency and health services, PT operators, Police	N/A	Make agreements with them about the scope of the measure	**INFORM, INVOLVE and COLLABORATE**
		Motor vehicle drivers (from Amsterdam and visitors)	Website, news items, video, radio stations, city boards, traffic information apps, social media, local media, etc.	Inform = main target group for the communication campaign	
		Cyclists, pedestrians, residents	Website, news items, video, radio stations, city boards, traffic information apps, social media, local media, etc.	Inform = secondary target group for the communication campaign	
		Educational institutes, young and future divers, children and parents	Campaign materials, teaching materials, etc.	Inform and educate about road traffic	
Policy evaluation	*Pilot closure Weesperstraat (PUSH)*	Survey - anyone in the Netherlands Focus group – residents, businesses, healthcare providers, logistics companies, taxi companies, social and cultural institutions, hotels	Survey and 9 focus groups	Assessment of the experiences with the pilot and derive lessons for future measures	**INFORM and CONSULT**
	Restricted car access Oudezijde area (PUSH)	Residents and businesses	Survey on pilot outcomes and observations	Assessment of the residents' and businesses' perceptions of the pilot and its effects	

Table A9. Stakeholders, means and goals of involvement, and degree of participation per policy cycle - Amsterdam.

APPENDIX 10.
STAKEHOLDERS AND PUBLIC PARTICIPATION IN ROTTERDAM

Policy cycle		Key stakeholders involved	Means of involvement	Goal(s) of involvement	Degree of participation
Policy decision-making and implementation	*Experiment Oude Westen (PUSH)*	Local residents and businesses	Street interviews with passers-by; Discussions with shopkeepers	Input for programming and main design concept Informed of changes	**INFORM, INVOLVE and COLLABORATE**
		Emergency services, RET (public transport operator)	N/A	Collaborate for the preparation and implementation of measures	
	Kruisplein and Eendrachtsplein intersections closure to car traffic (PUSH)	Local businesses, residents and associations, users of the squares	Discussions and information sessions (meetings), online questionnaires and workshops	Co-design of the traffic measure	
	Redesign Schouwburgplein (PULL)	Local businesses, residents and cultural institutions	Online questionnaire, other	Input for the future plans	
	Redesign Hofplein (PULL)	Local residents, businesses, property owners, Organisation BIZ Rotterdam Centre, Vereniging Rotterdam Central District	Online questionnaire, meetings	Input for the future plans	
		RET, ENECO, MRDH, Inspectie Leefomgeving en Transport (ILT)	N/A	Collaborate for the preparation and implementation of measures	
	Redesign Blaak/ Westblaak (project on hold) (PULL)	Property owners and businesses	Discussions	Input for the future plans	
Policy evaluation	*Experiment Oude Westen (PUSH)*	Local residents and businesses	N/A	Evaluation of the experiment's results	**INFORM and CONSULT**
	Experiment Maastunnel (PUSH)	Local residents and businesses	Online questionnaire	Evaluation of the experiment's results	

Table A10. Stakeholders, means and goals of involvement, and degree of participation per policy cycle - Rotterdam.

APPENDIX 11.
STAKEHOLDERS AND PUBLIC PARTICIPATION IN UTRECHT

Policy cycle		Key stakeholders involved	Means of involvement	Goal(s) of involvement	Degree of participation
Agenda-setting and policy formulation		Residents, social organisations, businesses, knowledge institutes, provincial authorities, surrounding municipalities and the national government	Online sessions, physical meetings and workshops, 'Het Wiel' sounding board	Gather input for the development of policy Mobiliteitsplan 2040	**INFORM and CONSULT**
Policy decision-making and implementation	*Expansion of the pedestrian area in the inner city (PULL)*	Residents and businesses in the city centre, other interest groups	Digital questionnaire	Understand residents' wishes for the future of the pedestrian area	**INFORM, INVOLVE and COLLABORATE**
	Redesign Lombokplein (PULL)	Residents, various social associations, businesses, NH Hotel, others	Input via digital questionnaires, physical info meetings, etc. Informed via website, newsletter, social media, etc.	Gather wishes and opinions on the future design and responses to the preliminary plans	
	Redesign Moreelsehoek (PULL)	Residents, businesses and other organisations	N/A	Co-design of redesign plan	
	Redesign Ledig Erf (PULL)	Residents and businesses of the Zuidpoort, visitors of the area, interest groups, emergency services, police, educational institutes, Rijkswaterstaat, NS, others	Neighbourhood meetings, street interviews, online questionnaires, email, social media, etc.	Gather wishes and opinions on the future design and responses to the preliminary plans	
	Redesign Weerdsingel Oostzijde (PULL)	Residents and anyone interested	Digital questionnaires	Gather opinions on the preliminary design	
	Redesign square Neude (PULL)	HORECA businesses, event organisers	Meetings, letters, others	Inform about the new plan and discuss it	
	Adding / expanding bicycle parking facilities CS area (PULL)	City, ProRail and NS	N/A	Collaborate for the development of bike parking facilities in the CS area	
	On-street parking spaces removal (PUSH)	Residents	N/A	Involve in deciding on the new program	
	30 km/h speed limits (PUSH)	Motor vehicle drivers, cyclists, pedestrians, residents	Special signage, social media, other	Inform via communication campaign '030 goes for 30'	
	Closure of Catharijnesingel (PUSH)	Businesses, residents, various social organisations, others	Meetings, info markets, other	Discuss the planned changes	

Table A11. Stakeholders, means and goals of involvement, and degree of participation per policy cycle - Utrecht.

APPENDIX 12.
CHANGES IN THE ASSESSMENT METHODOLOGY

ELIMINATION, REALLOCATION, PARAPHRASING AND SCORING CHANGES

PROGRAMMATIC ASSESSMENT
Maximum possible score remains (1) per success factor

Policy produces positive social impacts (quantitative) in the long-term
No judgement made.
Factor is not considered in the final assessment.

Policy documents have a clear and straightforward direction which is understood by both civilians and public administration throughout the whole policy cycle reallocated from 'political assessment' and rephrased to
Policy documents have a clear and straightforward structure

TEMPORAL ASSESSMENT
Maximum possible score remains (2) per success factor

PROCESS ASSESSMENT
Maximum possible score changes from (1) to (2) per success factor.

Presence of enough capacity (personnel) and knowledge throughout the policy cycle
No observations made.
Factor is not considered in the final assessment.

Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments
No observations made.
Factor is not considered in the final assessment.

POLITICAL ASSESSMENT
Maximum possible score changes from (1) to (2) per success factor.

Policy documents have a clear and straightforward direction which is understood by both civilians and public administration throughout the whole policy cycle reallocated to 'programmatic assessment' and rephrased

Presence of a stable political landscape in the city and *Political survival of the governing body* grouped into
Presence of a stable political landscape in the city and political survival of the governing body

SCORING MECHANISM PER SUCCESS FACTOR

PROGRAMMATIC ASSESSMENT
Maximum possible score of (1) per success factor

Mobility policy program is delivered in consideration with other related policy areas
Reviewed factors:
1) mentioning of link/relation to other policy documents
2) mentioning of link/relation to other policy areas/domains

Scoring mechanism:
If (1) and (2) = TRUE, then SCORE = 1
If (1) or (2) = FALSE, then SCORE = 0.5
If (1) and (2) = FALSE, then SCORE = 0

Policy program features mutually supportive goals working towards the achievement of the overarching policy goal
Reviewed factors:
1) presence of an overarching main goal and sub-goals
2) presence of an interconnected/dependent and coherent set of goals

Scoring mechanism:
If (1) and (2) = TRUE, then SCORE = 1
If (1) or (2) = FALSE, then SCORE = 0.5
If (1) and (2) = FALSE, then SCORE = 0

Integration of several policy instruments of different nature and scales
Reviewed factors:
1) mentioning of both push and pull measures in policy documents
2) presence of both push and pull measures for the inner city area
3) measures vary in terms of their nature (e.g., target groups, duration, function) and scale of intervention

Scoring mechanism:
If (1), (2) and (3) = TRUE, then SCORE = 1
If (1) or (2) or (3) = FALSE, then SCORE = 0.5
If (1), (2) and (3) = FALSE, then SCORE = 0

Policy produces positive social impacts (quantitative) in the long-term
Reviewed factors:
1) modal split changes
2) presence of reported positive social impacts
3) impact of measures in the long-term

No judgement on factor, thus, eliminated from the final assessment.

Policy documents have a clear and straightforward structure

Reviewed factors:
1) clear and straightforward structure – chapters are structured per sub-goal/principle
2) presence of a summary list with the measures

Scoring mechanism:
If (1) and (2) = TRUE, then SCORE = 1
If (1) or (2) = FALSE, then SCORE = 0.5
If (1) and (2) = FALSE, then SCORE = 0

TEMPORAL ASSESSMENT

Maximum possible score of (2) per success factor

Presence of sufficient and dedicated local funding anticipating the changing needs for sustainable mobility in cities

Reviewed factors:
1) presence of a dedicated mobility budget plan
2) decreasing city assets for mobility measures
3) financial difficulties reported by the interviewees
4) reliance/dependence on external funding sources

Scoring mechanism:
If (1) = TRUE; and (2), (3) and (4) = FALSE, then SCORE = 2
If (1) = FALSE or (2) = TRUE or (3) = TRUE or (4) = TRUE, then SCORE = 1
If (1) = FALSE; and (2), (3) and (4) = TRUE, then SCORE = 0

Framing of general policy goals to anticipate changing circumstances on the lower geographical scales

Reviewed factors:
1) main policy goal defined in an abstract/general manner
2) policy sub-goals defined in an abstract/general manner

Scoring mechanism:
If (1) and (2) = TRUE, then SCORE = 2
If (1) or (2) = FALSE, then SCORE = 1
If (1) and (2) = FALSE, then SCORE = 0

PROCESS ASSESSMENT

Maximum possible score of (2) per success factor

Presence of enough capacity (personnel) and knowledge throughout the policy cycle

No observations on factor, thus, eliminated from the final assessment.

Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments

No observations on factor, thus, eliminated from the final assessment.

Stakeholders affected by the policy actively collaborated with policymakers throughout the different phases of the policy cycle

Reviewed factors:
1) presence of higher levels of participation than 'inform' during policy cycle phases agenda-setting and policy formulation
2) presence of higher levels of participation than 'inform' during policy cycle phases decision-making and implementation
3) presence of higher levels of participation than 'inform' during policy cycle phase evaluation

Scoring mechanism:
If (1), (2) and (3) = TRUE, then SCORE = 2
If (1) or (2) or (3) = FALSE, then SCORE = 1
If (1), (2) and (3) = FALSE, then SCORE = 0

Presence of data for monitoring impact and sufficient assessment mechanisms

Reviewed factors:
1) monitoring is envisioned/described in the policy document
2) presence of data for monitoring impact for each year
3) presence of rigorous assessment mechanisms

Scoring mechanism:
If (1), (2) and (3) = TRUE, then SCORE = 2
If (1) or (2) or (3) = FALSE, then SCORE = 1
If (1), (2) and (3) = FALSE, then SCORE = 0

POLITICAL ASSESSMENT

Maximum possible score of (2) per success factor

Society and public administration trust and support the policy direction, and those who have put it forward

Reviewed factors:
1) policy direction and measures face only support and no opposition
2) policy direction and measures face only opposition and no support
3) mixed public responses to policy and measures – presence of both opponents and supporters

Scoring mechanism:
If (1) = TRUE, then SCORE = 2
If (3) = TRUE, then SCORE = 1
If (2) = TRUE, then SCORE = 0

Presence of a stable political landscape in the city and political survival of the governing body

Reviewed factors:
1) stability (no significant changes in the political positions of the leading parties in the City Council for the past 6 years)
2) political survival (no major changes concerning the mobility portfolio holders and mobility policy directions)

Scoring mechanism:
If (1) and (2) = TRUE, then SCORE = 2
If (1) or (2) = FALSE, then SCORE = 1
If (1) and (2) = FALSE, then SCORE = 0

CHANGES TO THE MOBILITY POLICY SUCCESS ASSESSMENT MATRIX

Mobility policy success assessment matrix after methodological changes (strikethrough text in red):

Figure A12. Changes to the mobility policy success assessment matrix.

These changes have been made due to the lack of judgement on whether the policies produce positive social impacts (quantitative) in the long-term and due to the lack of observations concerning the internal organisational aspects within the municipality itself corresponding to the success factors *'Presence of enough capacity (personnel) and knowledge throughout the policy cycle'* and *'Municipal departments involved in the policy cycle collaborate, have clear roles, work with the same tempo and have a matching understanding of the policy goals and instruments'*.

Quadrant 'Mobility policy SUCCESS'
Policies in this quadrant can be labelled 'successful' and have the following characteristics (adapted from Compton et al., 2019):

- Well-designed policy program which anticipates changing circumstances *(program and temporal)*
- Smooth and inclusive policy process and widely supported value proposition, instruments, results and policymakers *(process and political)*

In this quadrant, policies would have received an overall score higher than 4.5 (> 4.5) for the programmatic and temporal assessment success factors and the factors belonging to process and political assessment.

Quadrant 'Mobility policy FAILURE'

Policies in this quadrant can be labelled 'failed' and have the following characteristics (adapted from Compton et al., 2019):

- Poorly designed policy program which does not anticipate changing circumstances *(program and temporal)*
- Disturbed and unjust policy process and lack of support for the value proposition, instruments, results and policymakers *(process and political)*

In this quadrant, policies would have received an overall score lower than 4.5 (< 4.5) for the programmatic and temporal assessment success factors and the factors belonging to process and political assessment.

Quadrant 'Smooth, inclusive and popular, but poorly designed'

Policies in this quadrant are neither a success, nor a failure as they have the following characteristics (adapted from Compton et al., 2019):

- Poorly designed policy program which does not anticipate changing circumstances *(program and temporal)*
- Smooth and inclusive policy process and widely supported value proposition, instruments, results and policymakers *(process and political)*

In this quadrant, policies would have received an overall score lower than 4.5 (< 4.5) for the programmatic and temporal assessment success factors, and higher than 4.5 (> 4.5) from all factors belonging to process and political assessment.

Quadrant 'Well-designed and anticipative, but disturbed, unjust and opposed'

Policies in this quadrant are also neither a success, nor a failure as they have the following characteristics (adapted from Compton et al., 2019):

- Well-designed policy program which anticipates changing circumstances *(program and temporal)*
- Disturbed and unjust policy process and lack of support for the value proposition, instruments, results and policymakers *(process and political)*

In this quadrant, policies would have received an overall score higher than 4.5 (> 4.5) for the programmatic and temporal assessment success factors, and lower than 4.5 (< 4.5) from all factors belonging to process and political assessment.

[This page intentionally left blank]

[This page intentionally left blank]

"WHEN A CITY STREET STOPS BEING HOSTILE TO HUMANS AND THE ENVIRONMENT, YOU GET A PLACE WHERE COMMUNITIES BOND, BUSINESSES FLOURISH, AND CULTURE THRIVES."

- Lior Steinberg, Co-Founder of Humankind

Radboud University