

Social Innovation in Environmental Sustainability

Figueroa, Maria J.; Greiffenberg, Caroline; Akinyi, Elizabeth E.; Lund, Anker Brink; Behrendt, Christian; Krlev, Gorgi; Navrátil, Jiří; Placier, Klara; Cavola, Francesca; Turini, Alex; Cancellieri, Giulia

Document Version

Final published version

Publication date:

2016

License

CC BY-NC-ND

Citation for published version (APA):

Figueroa, M. J., Greiffenberg, C., Akinyi, E. E., Lund, A. B., Behrendt, C., Krlev, G., Navrátil, J., Placier, K., Cavola, F., Turini, A., & Cancellieri, G. (2016). *Social Innovation in Environmental Sustainability*. European Commission. ITSSOIN - Impact of the Third Sector as Social Innovation - Project Deliverables No. 6.4

[Link to publication in CBS Research Portal](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

If you believe that this document breaches copyright please contact us (research.lib@cbs.dk) providing details, and we will remove access to the work immediately and investigate your claim.

Download date: 04. Jul. 2025

Social Innovation in Environmental Sustainability

Deliverable 6.4 of the project:
“Impact of the Third Sector as Social Innovation” (ITSSOIN),
European Commission – 7th Framework Programme

16 October 2016



Suggested citation

Figueroa, M.; Greiffenberg, C.; Akinyi, E.; Brink, A.; Behrendt, C.; Krlev, G.; Navrátil, J.; Placier, K.; Cavola, F., Turini, A.; Cancellieri, G. (2016). Social Innovation in Environmental Sustainability. Deliverable 6.4 of the project: “Impact of the Third Sector as Social Innovation” (ITSSOIN), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research.

Acknowledgements

We would like to thank our partners of the EU-sponsored project “ITSSOIN – Impact of the Third Sector as Social Innovation” for their extensive support in preparing this report. The partner network consists of the *University of Heidelberg* for Germany, *VU University Amsterdam* and the *Netherlands Institute for Social Research* for the Netherlands, *London School of Economics and Political Science* for England, *Università Commerciale Luigi Bocconi* for Italy, *Copenhagen Business School* for Denmark, *ESSEC Business School* for France, *Masaryk University* for the Czech Republic, *Universidade da Coruña* and *Universidad de Oviedo* for Spain, and the *Stockholm School of Economics* for Sweden.

ITSSOIN

ITSSOIN is a research project funded under the European Commission’s 7th Framework Programme responding to a call to investigate “The impact of the third sector on socio-economic development in Europe”. The project is a research collaboration between 11 European institutions led by the University of Heidelberg and runs from 2014-2017.

| | |
|----------------------|--|
| Date: | 16 October 2016 |
| ITSSOIN deliverable: | No. 6.4 |
| Authors: | Figueroa, M.; Greiffenberg, C.; Akinyi, E.; Brink, A.; Behrendt, C.; Krlev, G.; Navrátil, J.; Placier, K.; Cavola, F., Turini, A.; Cancellieri, G. |

Lead partner: Copenhagen Business School, Denmark
Participating partners: University of Heidelberg, Germany; Università
Commerciale Luigi Bocconi, Italy; Masaryk
University for the Czech Republic,
Contact person: Georg Mildenberger
Centre for Social Investment, Heidelberg
University
georg.mildenberger@csi.uni-heidelberg.de
+49 - 06221 - 54119-59

Content

| | |
|--|-----------|
| 1. Executive summary | 1 |
| 2. The social innovation stream across Denmark, Czech Republic, Germany and Italy . 3 | |
| 3. Methods | 5 |
| 3.1. Interviews process: selection and recruitment | 8 |
| 3.2. Types of interview, recording and transcription and coding | 11 |
| 3.3. Presentation of interview guide and other sorts of data collection | 12 |
| 4. Country perspectives on the social innovation stream | 13 |
| 4.1. Copenhagen | 14 |
| 4.1.1. Specific focal points and milestones of the SI | 14 |
| 4.1.2. Central actors and their primary roles in advancing the SI stream | 22 |
| 4.1.3. Dynamism in the field | 26 |
| 4.1.4. Stratification and (de-)commodification in the field | 28 |
| 4.2. Germany/Frankfurt | 29 |
| 4.2.1. Specific focal points and milestones of the SI | 29 |
| 4.2.2. Central actors and their primary roles in advancing the SI stream | 32 |
| 4.2.3. Dynamism in the field | 35 |
| 4.2.4. Stratification and (de-)commodification in the field | 37 |
| 4.3. Czech Republic/ Brno | 38 |
| 4.3.1. Specific focal points and milestones of the SI | 38 |
| 4.3.2. Central actors and their primary roles in advancing the SI stream | 41 |
| 4.3.3. Dynamism in the field | 42 |
| 4.3.4. Stratification and (de-)commodification in the field | 43 |
| 4.4. Milan | 44 |
| 4.4.1. Specific focal points and milestones of the SI | 44 |
| 4.4.2. Central actors and their primary roles in advancing the SI stream | 49 |
| 4.4.3. Dynamism in the field | 50 |
| 4.4.4. Stratification and (de-)commodification in the field | 51 |
| 4.5. Country comparison and synthesis..... | 51 |
| 5. Merged country perspectives on actor characteristics | 54 |
| 5.1. Sector affiliation of major actors | 54 |
| 5.2. Social needs orientation (H 1.1) | 56 |
| 5.3. Organisational value sets (H 1.2) | 57 |
| 5.4. Internal organisational culture (H 1.3) | 59 |

| | | |
|-----------|---|-----------|
| 5.5. | External organisational openness (H 1.4) | 60 |
| 5.6. | Transaction costs in detecting societal challenges and know-how (H 1.5) | 62 |
| 5.7. | Embeddedness in social/local context (H 1.6) | 63 |
| 5.8. | Resource diversity (H 1.7) | 64 |
| 5.9. | The role of voluntary engagement (H 1.8) | 66 |
| 5.10. | ‘Unengaged’ forms of volunteering (if applicable) (H 1.9)..... | 67 |
| 5.11. | Linkage between advocacy work and service provision (H 1.10) | 68 |
| 5.12. | Independence from external pressures (H 1.11)..... | 70 |
| 6. | Innovation Properties | 71 |
| 6.1. | Innovation trajectories and dynamism (disruptiveness of the innovation)..... | 71 |
| 6.1.1. | Copenhagen | 71 |
| 6.1.2. | Frankfurt..... | 73 |
| 6.1.3. | Brno..... | 73 |
| 6.1.4. | Milan | 74 |
| 6.1.5. | Synthesis..... | 74 |
| 6.2. | ‘Strength’ of the innovation: country-specific particularities..... | 75 |
| 6.2.1. | Copenhagen | 75 |
| 6.2.2. | Frankfurt..... | 75 |
| 6.2.3. | Brno..... | 75 |
| 6.2.4. | Milan | 76 |
| 6.3. | Synthesis of comparative analysis..... | 76 |
| 7. | Lessons learned and way ahead | 80 |
| 8. | References | 84 |
| 9. | Appendix | 88 |
| 9.1. | Copenhagen Appendix..... | 88 |
| 9.2. | Frankfurt Appendix..... | 94 |
| 9.3. | Brno Appendix | 99 |

1. Executive summary

“A bike is not a means of transportation from A to B, but also a social instrument”.

This document delivers the results of the case study elaborated within the ITSSOIN project investigating impacts of Third Sector as Social innovation within the area of Environmental Sustainability. The stream of innovation identified in the area of Sustainability in Cities is *sharing space in cities for bicycle mobility*. The report provides empirical indication of the collective impact of civil society, market and state actors upon their City's innovativeness in sharing space for bicycling. Sharing city space is a widespread stream of innovation in environmental sustainability of significance in most European cities. Promotion of bicycle use and sharing space for bicycle mobility in cities play a strong part in contemporary international policy narratives about sustainable cities.

The questions guiding this empirical work are what are the key actors and what is their role advancing this stream of innovation?; What mechanisms in the actors' interplay contribute to innovativeness in this field? What can be learnt from the different status of this innovation in each of the four considered cities? How do these cities compare in relation to the roles civil society actors play vis a vis state and market? What kind of influence do actors exert in the evolution up to the current status of this stream of innovation? The empirical work compares four pre-selected cities Copenhagen, Brno, Milan and Frankfurt, which represent illustrative cases informing ITSSOIN hypothesis and the theoretical considerations presented in early deliverables.

The methodological approach traces the practices, influences and narratives, the who?, what?, and how? of the processes leading to the present stated status of the stream of innovation for each city. Data and material were collected by partners via direct interviews with key actors and secondary desk review of official published documents, reports and webpages. This information helped producing: a mapping of the key actors, understanding of their roles and of the scope of their activities, while tracing the evolution of activities back to the last couples of decades. The mapping of actors and their key activities guides the selection of key actors for deeper interviews. The analysis produces a thick story for each city, which traces the evolution of the innovation, and identifies moments of contention, the influence of the actors and the type of narratives that are produced over time. The analysis coded the responses according to three categories of influence from the actors in interplay: political, socio cultural and strategic-material-infrastructural. The city comparison reflects how at different times actors contributed in greater or lesser degrees to these three areas of influence. Consideration of these areas of influence helped to reach conclusions about the relative contributions of actors.

The picture emerging from each city highlights a dynamic interplay of the actors in processes and practices that together we observe as adding up to build the narratives, presenting new claims and exposing new materials/designs and phenomena. We observe how this narratives and claims emerging tend to accumulate over time forming what we argue here constitutes a value system which itself condenses the form of impact this innovation stream provides.

In the comparative analysis, Copenhagen emerged as the city with the most vibrant stream of innovation in sharing space for bicycling of the four cities. Copenhagen demonstrates effectively that the more narratives and claims presented by actors or generated in their interplay, the greater the infusion of life and the value created in the stream of innovation. The

other three cities, Frankfurt, Milan and Brno illustrate streams of innovation with circulation of fewer narratives. The comparison between cities indicates the strength of dynamic relation among actors, such that their interplay in progression over time is what generates a value system which proves the consequences of innovativeness in this stream of social action. We point at the configuration of a Value system constituted of the meanings, practices, services, materialities, institutionalizations, new agencies, civil and uncivil claims, opportunities, promises, tasks, and objectives which simultaneously coalesce and set feedbacks, creating loops that can reinforce, but sometimes also undercut the value system and the innovativeness generated in the sharing space for bicycling.

The value system created in the present stream of innovation can only be defined contextually. The generic part of the value system applicable to all cities is how the relational interplay of its elements can explain actions of each of the other acting elements. In other words, we are not attributing a line of causality to the impact of the stream of innovation. Instead we describe this as a relational interplay or a systemic interplay and a process of value creation as the impact of this stream of innovation. We propose that with this approach we can show that the impact of social innovativeness in this specific field of action is: the creation of a value system supporting the stream innovativeness for sharing space for bicycling use.

Copenhagen exemplifies the existence of positive feedback loop value system for sharing space for bicycles. There, the created value system attracts high innovativeness from all actors, and can constantly generate improvements to the stream of innovation and enhance the overall system performance. The downside is that within Denmark, this stream innovativeness is potentially not reproducible in other localities to this same degree. This is because, in this area Copenhagen acts as a magnet to the most talented and energetic individuals, businesses and leadership in Denmark on sharing space for bicycling. As one interviewed expert put it, it produces a see/saw effect with the rest of the country.

The social innovativeness impact in the form of a strong value system also well-developed but less rich in narratives exists in Frankfurt, where innovativeness in the field is more advanced with active involvement of state. The solid experience of creating a safe system demonstrated in the Frankfurt model has a great chance of replication across Germany for its practical approach, however the attraction of the value system to increase bike ridership has stabilized and the narratives are not producing the ebullient effect as in Copenhagen.

In Milan, the value system of innovativeness is led by a new government in cooperation with the business sector. Both tapping in branding a fashionable youth culture and medium stratification, Milan has the market and the state as the primary innovating actors in the field, even when the safety conditions for fast biking volumes are more limited than in the previous two cities. Milan innovativeness in this area has a good chance to be replicated in other cities in Italy, but with undeveloped safe conditions for safe biking being created, the level of ridership is not bound to increase strongly.

In Brno, the value system for sharing space for bicycling is challenged by historical narratives questioning what is the meaning of sharing in a transitioning to market in a post-socialist time, when people are more than willing to use automobiles if they can afford it?. A second challenge is posed by concrete physical/geographic conditions which may limit the expansion of biking volumes to high levels observed in flatter cities. The stream of Innovativeness in Brno is the most incipient of the four cities and is led by the state with mixing degrees of support from civil

society and market. The business sector in Brno although incipient is ready to capitalize and make inroads replicating innovative approaches from cities like Prague and Vienna, but is counting on a less than supportive environment from the general population. The report final comparative qualitative analysis of organizational traits provides a basis to reconnect to the larger ITSSOIN Qualitative comparative Analysis that will take place following the end of this empirical chapter. The comparative material discussed here condenses how the occurrence of specific factors at the organizational level and traits of the organization can be linked to the organization's declared degree of contribution to the stream of innovation.

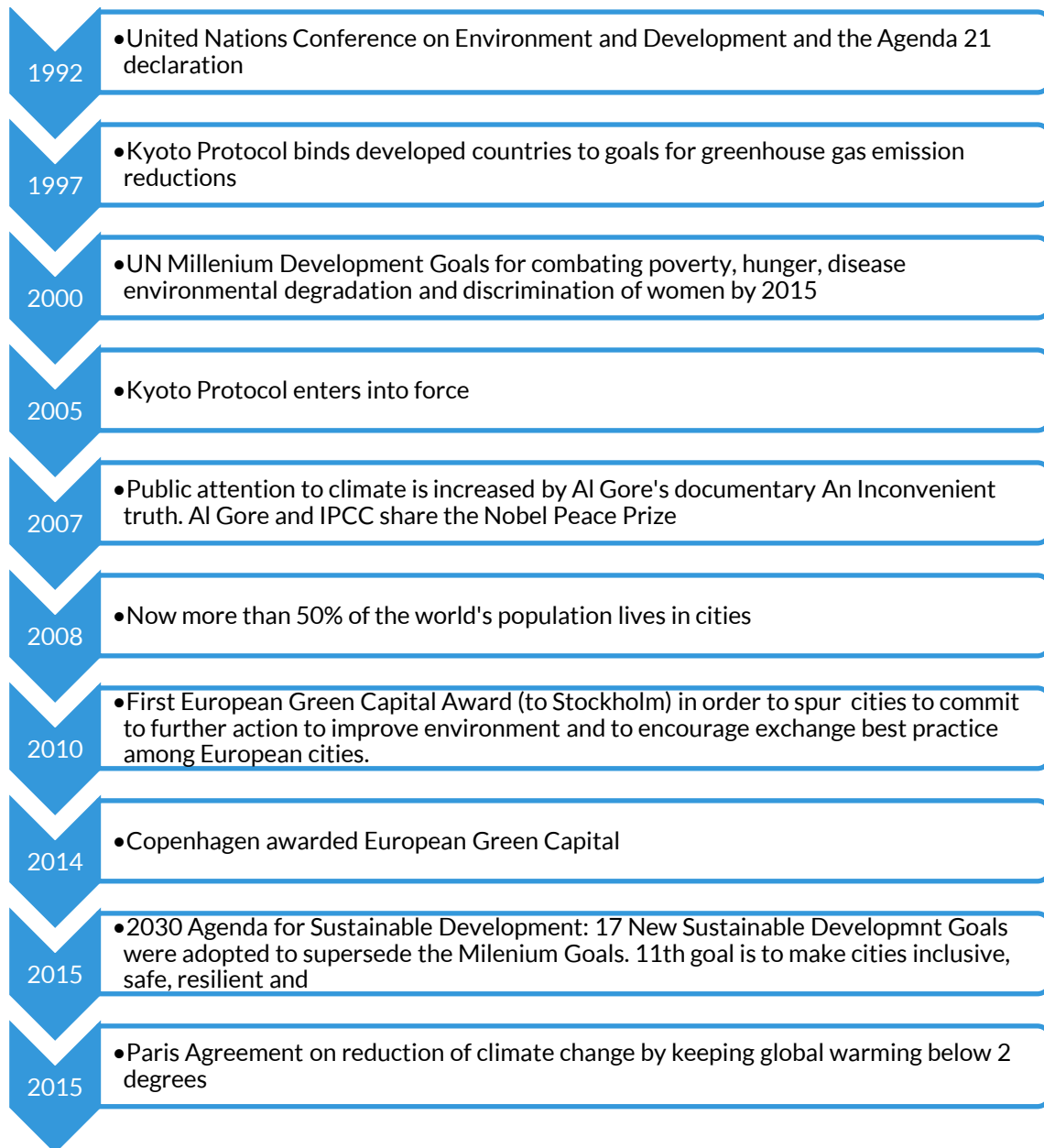
2. The social innovation stream across Denmark, Czech Republic, Germany and Italy

Environmental sustainability encompasses a wide array of social innovation activities of increasing significance in Europe and the rest of the world. Sustainability in cities is one of the most important areas within this field. Within cities the stream of social innovation here identified has wide spread significance for sustainability in European cities and beyond. The stream belongs to the field of urban mobility and sustainable forms of transportation, topics at the hearth of sustainability in cities.

Bicycles are simply the tool or mechanism around which we discuss and delimit a field of social innovativeness. Bicycles are an environmentally friendly form of transportation which, when utilized in high volumes and in combination with other forms of public transport and non-motorized forms of transportation, can create multiple environmental, social and economic benefits, indeed greatly contributing toward achievement of urban sustainability goals.

At the European and international level the benefits and opportunities for cities of promoting bicycling and other forms of soft mobility are well understood and increasingly promoted. The number of research and advocacy reports and projects offering a well of recommendations to all level of public and private city decision-makers in this area, produced at regional, international and local level, has multiplied over the last decade (Figure 1).

Figure 1: Last twenty years of key international milestones in Environmental Sustainability



Despite this, the pattern of physical expansion of most cities in Europe, during this same period, only reveals decision investments in infrastructure and urban landscape planning that predominantly seeks to accommodate larger volumes of motorized forms of mobility in support of consumption patterns and behavioral preferences of the population that also favor increasing use of motorized modes.

The use of bicycles pre-dates the invention and popularization cars in cities. Bicycles were and are a popular means of transport. However, the early presence of bicycles sharing in cities space gradually gave way to the circulation of cars and other motor vehicles. Motorized vehicles provide a faster, bigger and more powerful means of transportation. But with more power and

speed also come specific requirements of greater utilization of urban space that needs to be granted.

Cities across the world have been reshaped to favor prioritization of use of space for motor vehicles circulation. Over time this physical infrastructural development evolved into a systemic foundation structurally locked in, that limits and constrains possibilities for sharing space with lower speed, softer, unprotected transport modes like bicycles and walking pedestrians. These limitations are necessary to guarantee safe circulation of bodies and machines. But they usually become part of a trade-off that secures comfort and space for parking and greater speed, as a privilege that car owners can enjoy, while the space for safe circulation of other modes is compromised or left unprotected.

Bringing the level of bicycles use up in cities to reach traffic volumes that are more in accord with sustainability objectives requires innovative thinking and solutions for ways to share the limited densely occupied space of the European urban environment. Innovativeness of this sort in cities could spring from state, market or civil society actors in society in fruitful interplay. But can this be achieved? What actors can take lead in advancing such innovation? Can this be the result of actions advanced by one single actor in a line of causal relationships? If not, what can be said of the interplay of power, influences and interrelation between actors and how they relate to dynamism of this stream of innovation in a given city?

A general observation that motivates our comparison is that of those European cities that historically never completely turned away from bicycles, such as Copenhagen and Amsterdam, are also the ones that today exhibit the stronger and more advanced forms of social innovativeness in their bicycle systems in Europe and without doubts in the world. They have developed not only the advanced supporting infrastructure system capable of supporting high volumes of bicycle traffic throughput in the middle of the city, but also and perhaps more importantly, these cities have developed a strong supporting “value” system that promotes innovative ways of safely sharing urban space for the use of bicycles. This report elaborates further in how this is being achieved.

The report addresses questions that can help us understand the role and the interplay of state, market and civil society actors, their contributions in discourses, policies activities and themes, and the ways in which they have carried out these over time. Also, the ways in which each of these has contributed -creating or detracting - from formation of a value system around bicycle use in the city. We will seek to argue that greater innovativeness and potential for disruptiveness in this particular stream of innovation will be enhanced when a strong value system around bicycle use exists and when is nurture and kept alive in many forms. This is an area where the traits of civil society organizations can serve them best in delivering refine and disruptive forms of innovativeness.

3. Methods

Sharing urban space for bicycling in cities is in the present study the stream of innovation to be analyzed in order to find some answers to these many questions. We will draw attention to it in our empirical work with the comparison of four pre-selected countries and cities. The preselection of countries and cities took place in earlier ITSSOIN stages and material already published. The country selection report, documented the reasons for the selection of the four countries (Anheier, Krlev, Mildemberger, & Preuss, 2015) and, the Field description report justified the focus on sustainability in cities and provided the basis for the selection of the four

cities (Brno, Copenhagen, Frankfurt and Milan) (Figuerola, 2015). In short, these four cities stood out comparatively to criteria such as: geography (population, overall density), the city's economic vitality with respect to the nation and the number of examples and level of experimentation and social innovativeness observed within each city.

In what follows we will be comparing Copenhagen, Frankfurt, Milan and Brno and delivering an empirically grounded indication of the social innovativeness in the field of sharing bicycle use in these four cities. The questions guiding the empirical analysis are:

- What is the current state of the stream of innovation of sharing bicycle space in each of these cities and how do these cities compare?
- What has been the role of actors from state (e.g. policies), market (e.g. services) and civil society (e.g. volunteers, advocacy) to bring the stream of innovation to its present state in each city?
- What themes or discourses have been generated over time and how have they contributed or deterred the evolving of the innovation stream into becoming widespread?

In addressing these questions we followed a process tracing method in which we mapped key actors and events, before selecting key experts and initiating a process of interview. We followed with a process of transcription, coding and analysis of material and, a process of comparative analysis, thick narrative and time-line production guiding the writing of this review. Our approach traced back two decades events and status observed about the social innovation at present time. Our focus was on tracing how, and by whose influence narratives leading the stream came to be constituted. We in short traced events linked to a certain typology of influence (socio-cultural, political, systemic/infrastructural) and extracted from this understanding their collective meaning in the form of narratives that come to form the core of a value system over time. A central part of our methodology was the interview process and the framework used in the analysis of results.

We begin collecting information that allowed us to set a basic understanding of the current status of sharing urban space for bicycling in each city. We gain knowledge of the current status and begin to find the answer for the who?, what?, when? and the how? , that made arriving at this status possible in these four cities. We seek to understand the evolution of events today as they emerged over time, the main actors, services, discourses, policies and themes that most significantly define the status of this stream of innovation in its present condition.

The social innovativeness that characterizes the current situation is described beyond the quantification of existing kilometers of bicycle lanes in place, the traffic throughput numbers, or bicycle passenger kilometers generated in the concerned cities. These data is important and will be used as part of the system/infrastructural logic of influence by actors that will be most helpful to support the observation that the four cities are indeed positioned very distinct places in the level of development of a safe space for sharing bicycle use.

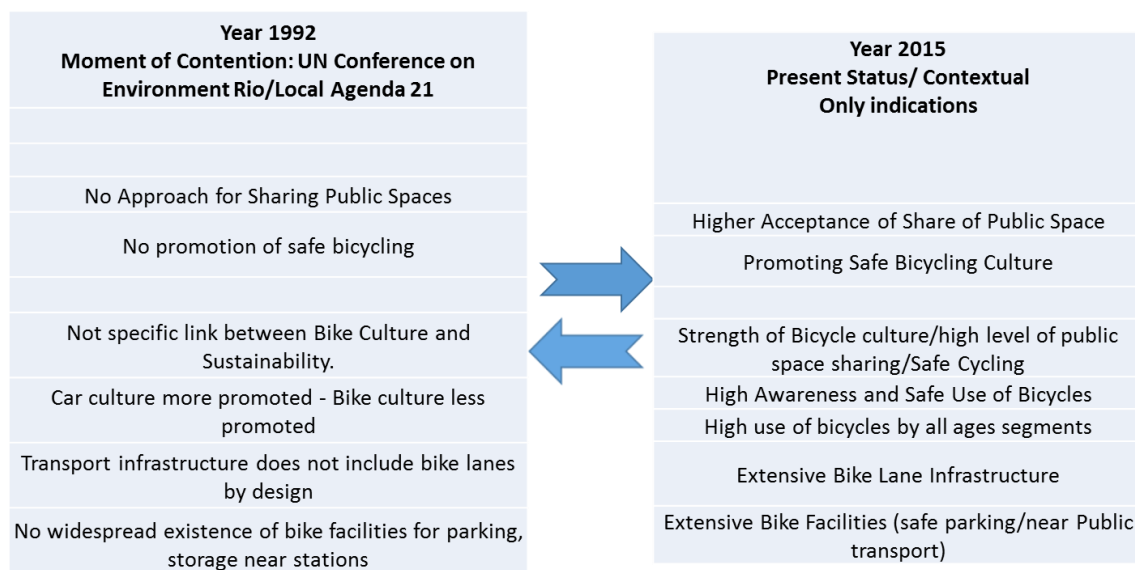
Beyond the system/infrastructural components, innovativeness in sharing space for bicycling in all four cities will be further analyzed by focusing in the scope and type of activities by different actors in the field. We will gather examples with observations advanced in the expert interviews on how organizations from state, market and civil society are bringing about new forms of sharing urban space to facilitate safe movement of children, elderly, women with

children, pedestrians in general, and what type of actions (political- socio-cultural) best describe this. Examples can be mentioned in the form of organizations that advocated creation of safe pedestrian pathways, bike routes, shared streets between fast moving cars and slow moving pedestrians and bicyclist. These initiatives and organizations may be localized and driven by social innovators but by referring to them under the “sharing space” stream the cases can be studied in the four cities in more concrete form.

Therefore belonging to this stream of innovativeness we included all activities and actors participating in expanding use of bicycles in the year 2015 in the four cities. The descriptive set describing the current status therefore includes the actors and their activities for example promoting bicycle culture, use of bicycles in the city, expanding service that bicycles provide going beyond pure transportation motives (moving from point A to point B with a propose); to using bicycles for recreational purposes, sport, tourism, health and more generally in relation to improving quality of life issues.

The information gathered on the current status picture of the innovativeness in sharing bicycle in each city, oriented the following parts of the methodology. In guiding our approach we decided to focus on finding the status of the stream of innovation in the year 2015 (see Figure 2 below); and then follow this conditions and how they emerged, tracing them back for the previous two decades.

Figure 2: Points of departure and end guiding the process tracing approach



The year 1992 was established for it created a similar moment of contention for all four countries and cities, since is the year of the UN Conference on the Environment in Rio de Janeiro, when Sustainable Development was emerging at the international level and subsequently the emphasis on the role of cities, participation and sustainable transportation emerged. This allowed focus on how the international narratives have been implemented. The interview process which we describe in the following section.

3.1. Interviews process: selection and recruitment

Our base background interview partners were selected on basis of results from our previously explained desktop research and literature reviews on each city in which key actors in the field of sharing public space for bicycle use were identified. While discovering key actors and experts through this process we have further used the snowball-method to uncover more and more documents and actors regarding the SI stream. Based on desktop research and interviews we have thus added interviewees to the list gradually. Table 1 presented below offers the names and affiliations of all our interviews. A total of 32 experts were interviewed.

Table 1: Interviewed Experts names by city and affiliations

| City | Name | Affiliation | Position | Sector | Contact |
|-------------|---|---|--|----------|--------------|
| Cope/ DK | Niels Tørsløv (Expert) | The Danish Road Directorate | Head of Section | Public | Face-to-face |
| Cope/ DK | Thomas Sick Nielsen (Expert) | The Danish Road Directorate | Senior Scientist | Public | Face to face |
| Cope/ DK | Malene Freudendal- Pedersen (Expert) | Roskilde University | Associate Professor | Academia | Telephone |
| Cope/ DK | Per Homann Jespersen (Expert) | Roskilde University | Associate Professor | Academia | Telephone |
| Cope/ DK | Ole Kassow | Cycling Without Age | Founder, Director | Third | Face-to-face |
| Cope/ DK | Claus Knudsen | Bicycle Innovation Lab | Director | Third | Face-to face |
| Cope/ DK | Lasse Schelde | Bicycle Innovation Lab | Founder | Third | Face-to-face |
| Cope/ DK | Alexander H. Frederiksen | Donkey Republic | Founder Simplicity in bike-sharing | Market | E-mail |
| Cope/ DK | Helene Lundgaard | Capital Region | Senior Researcher | Public | Face to face |
| Fra/ DE | Prof. Dr. Susanne Schäfer (Expert) | University of Applied Sciences Frankfurt | Professor | Academia | Telephone |

| | | | | | |
|-------------|--|--|--|---------|--------------|
| Fra/ DE | Rüdiger Bernhard | IVM/Meldeplattform Radverkehr - traffic management, mobility management | Commissioner | Public | Face-to-face |
| Fra/ DE | Jens Wöbbeking & Despina Leonidou | City of Frankfurt - Department of Mobility- and Traffic | Assistants to general management | Public | Face-to-face |
| Fra/ DE | Bertram Giebeler | ADFC Frankfurt (bicycle organisation) | Media spokesman of ADFC Frankfurt | Third | Face-to-face |
| Fra/ DE | Norbert Sanden | ADFC Hessen | Executive director of ADFC Hesse, responsible for different bicycle projects (bike+ business) | Third | Face-to-face |
| Fra/ DE | Florian Stolte | DBRent | Head of Product Management, DB Rent GmbH | Private | Telephone |
| Fra/ DE | Dennis Steinsiek | Nextbike | Mobility Consultant | Private | Telephone |
| Fra/ DE | Joachim Hochstein | City of Frankfurt - Radfahrbüro | Manager of Radfahrbüro | Public | Face-to-face |
| Fra/ DE | Dr. Hans- Jörg von Berlepsch | City of Frankfurt - traffiQ | Executive Director of traffiQ | Public | Face-to-face |
| Fra/ DE | Georgios Kontos | Regionalverb and Frankfurt/Rh einMain | Commissioner of bicycle traffic | Public | Face-to-face |
| Brno/ CZ | Vladimír Bielko | Brno City Municipality | Senior manager | Public | Face-to-face |

| | | | | | |
|-----------------|----------------------------|---|---|---------------------------------|------------------------|
| Brno/ CZ | Michal Šindelář | Brno na kole | Chairman and spokesman | Third | Face-to-face |
| Brno/ CZ | Anna Bromová | Rekola | Head of organization | Third | Face-to-face |
| Brno/ CZ | Anonymous Interviewee | Alternativní dopravní studio (ADOS) | Head of organization | Private | Face-to-face |
| Brno/ CZ | Robert Kotzian (Expert) | Brno City Municipality | Ex-deputy for technical area of Brno City Municipality | Public | Face-to-face |
| Milan/ Italy | Antonio Bisignano (Expert) | Municipality Milan/ Comune di Milano | Chief of Staff to Deputy Mayor for Transport/ Environment | Public | Face to Face |
| Milan/ Italy | Fabio Lopez (Expert) | Municipality Milan | Director of Bike Mobility Division | Public | Face to face via Skype |
| Milan/ Italy | Valerio Montieri | FIAB Milano Ciclobby | Architect and Technical Manager of- | Third | Face-to-face |
| Milan/ Italy | Marco Mazzei | "MassaMarmocchi | Volunteer critical mass activist | Third (grassroots organisation) | Face-to-face |
| Milan/ Italy | Erminia Falcomatà | Lombardy Region | Director of Roads Infrastructure and Cycle Net | Public | Telephone/ E-mail |
| Milan/ Italy | Elena Jachia | Fondazione Cariplo | Environment Area Director | Private | Telephone |
| Milan/ Italy | Roberto Peia | Urban Bike Messengers and Upcycle-cycle bar | Founder | Private | Face-to-face |
| Milan/ Italy | Antonio Bisignano | Rossignoli Bike Shop | Director | Private | Telephone/ E-mail |

| | | | | | |
|-----------------|-----------------------|---|----------------------------|-------|----------------------|
| Milan/ Italy | Ereminia Falcomatá | Genitori Antismog – Antismog Parents | Communicatio n Director | Third | Telephone/ E-mail |
|-----------------|-----------------------|---|----------------------------|-------|----------------------|

The procedure of selection of interviewees was based on an initial identification of the key actors in the field from private, public and the third sectors. The experts were selected on basis of their knowledge on the broad development of the area of bicycles and bicycle culture. The key actors across sectors were selected on basis of their relative relevance for events within the SI stream according to our extensive desk research, literature review and interviews with experts.

The recruitment process began with a formal e-mail or phone call to selected informants inviting them to participate in an interview. At this step the informants were informed about the project and its goals. Hereafter the interviews were scheduled, to take place either by telephone or face-to-face. In some cases (Denmark and Germany) the interviewees received a version of the interview guide in order to make it possible for them to prepare for the interview. In Milan and Brno the interviewees did not see the questions before the interview, but received information on the project and its scope.

3.2. Types of interview, recording and transcription and coding

Across the four cities examined within this study experts and organisational actors were interviewed in different manners but all interviews were based on semi-structured interview guides. Experts were interviewed in an open and explorative mode to be able to gain their perspectives on the stream of innovation and key actors. The organisational actors however, were interviewed in a stricter manner, to obtain more specific information on the motivations of the organisation, its goals, problems and so on. In Copenhagen, Frankfurt and Milan all interviews were recorded, and in Brno four out of five conducted interviews were recorded because one of the interviewees did not consent to the acquisition of recordings, therefore the whole meeting was documented in form of written notes.

To identify the actors' areas of influence within the stream of innovation we defined three dimensions (socio-cultural, political, systemic-infrastructure) which were later used as codes. These three dimensions served in the following way: first as coding categories to work through the interview transcription: second, to go beyond the strict demarcation of state, market and civil society actors into a more agile set of acting possibilities for the three set of actors; and third, for gaining a similar angle that could help in the comparative analysis between cities, to discuss what the scope of action and influence of the different actors have been in light of the innovation. Under socio-cultural dimension we gathered all references made about actors' practices impacting socio-cultural aspects in the stream of innovation, e.g. how different actors play parts towards the creation of a bicycling culture, the innovative actions promoting bicycling impacts in new lights of what creates a good life. Under the political dimension we gather all practices advanced to institutionalize, standardize, make new policies, informing or implementing policy decisions concerning the innovation. Finally, under the systemic/infrastructure dimension we collected all the practices that relate to physical and material improvement of conditions and services created in the evolution of the stream of innovation. Following these elements, preparation of a timeline of events for each city helped

also in observing the thematic changes and emerging narratives and how they have evolved in the field.

The interviews were partly transcribed and translated. Hereafter the interviews were coded according to the three dimensions explained above. In Frankfurt the transcribed material was coded using Atlas.ti and in Copenhagen and Milan Nvivo 11 was used. In Brno the coding was not executed by help of coding programs. Coding of all transcripts and recordings was made into ready-made templates prepared according to the three specific focal points and milestones being examined as well as organisational characteristics.

The interviews were coded to help tracing the process of the SI stream in each city by uncovering milestones and key actors. We have constructed timelines to visualize the process of sharing space for bicycles and promotion of bicycle culture in relation to environmental sustainability. We followed the process of observing how actors contributed to the three different forms of processes: socio/cultural milestones, political logic milestones and systemic logic milestones reinforcing themes over time and creating/adopting narratives. The socio/cultural milestones are for example new practices, new ways of doing things and new ideas. The Political logic milestones are for example rationales regarding new legislation and new understandings and rationales used economy, health, safety, as well as forms of prioritizations and presence of leadership. The systemic logic milestones are for example new products, and materiality such as infrastructure, parking and facilities. We hence produced timelines for each city uncovering the processes.

Lastly, key organisations/actors responded to a more focused set of interview questions and survey regarding specific organisational traits defined in the ITSSOIN hypothesis. The answers were coded in accordance with the Common guide for ITSSOIN case work. The QCA-questions uncover the mechanisms at play by the organisations' and their contribution to the stream of social innovations. The QCA questions are the basis for production of truth tables distributed in fuzzy sets (Ragin 2000,2008). We have hence used a simple form of fuzzy set that uses five numerical values. 1 is fully in; 0,75 is more in than out; 0,5 is neither-nor; 0,25 is more out than in; and 0 is fully out. We have 'translated' these result categories to answers ranging from very high through high, medium, low and no level of the organizational properties presented in the hypotheses.

3.3. Presentation of interview guide and other sorts of data collection

Interview guide: experts

The interview guides that were used for experts focused on milestones in the process from 1992 to today regarding initiatives to sharing space for bicycles and promotion of bicycle culture. The experts were also asked to describe the economic, cultural and political framework conditions for the milestones. Furthermore the experts were asked to point to key actors and characterize interactions between different actors. Finally the experts were all asked specifically about importance of the civil society for the process, because the role of third sector organisations constitutes the focus of analysis. The expert consultations contributed to identification of important milestones of shared biking as well as uncovered other important sources used for further analysis of the stream. In Milan and Frankfurt the experts were approached with the same interview guide as the organisations, though the interview manner was more explorative.

Interview guide: organisational actors

The interviews were split in two sections. The first section was semi-structured and has some open questions regarding the organization's' goals and history among other things. The second section of the interview is a survey with questions that relate directly to the ITSSOIN hypotheses. The organisational actors were asked to evaluate to which degree they complied with each of the hypotheses. Both sections help produce a nuanced picture of the organisations. (Organisation Interview guide is provided in Appendix)

Collection of other sources of data

On basis of the interviews we collected the pieces of legislation and policies that the experts and organisational actors referred to us. In the process of retrieving these documents we were also open to other sources of information that seemed to be linked to the documents in question. Based on interviews conducted with experts and organizational actors, the list of key sources (such as national and regional strategies, policies and other documents) was extended. The interviews were beneficial not only because of the information obtained about the milestones, actors and the social innovation itself, but also because they confirmed our preliminary identification of focal points of the stream as well as choices of sources used.

Table 2 Examples of Documents corresponding to two of the countries, list for Frankfurt and Brno added in appendix form.

| City | Type of document | Name of policy |
|------|--|---|
| Cop | Local strategy, Municipality of Copenhagen | From Good to the World's Best (2011) |
| Cop | Local policy, Municipality of Copenhagen | Eco-Metropolis (2007) |
| Cop | Local Policy, Municipality of Copenhagen | Metropolis for People (2009) |
| Cop | Legislation, national law in Denmark | Færdselsloven (Road Traffic Act) |
| Cop | Local policy, Municipality of Copenhagen | KBH 2025 Klimaplan (2012) |
| Cop | Local policy, Municipality of Copenhagen | Trafik- og Miljøplanen (2005) |
| Cop | Legislation, national law in Denmark | Act on Climate (2014) |
| Mi | Municipality plan of Milan | Sustainable Mobility Urban Plan (2012) |
| Mi | Municipality plan of Milan | Sustainable Mobility Urban Plan (2015) |
| Mi | Regional Law | Law n.7/2009-Lombardy Region |
| Mi | Lombardy Region plan | Regional Plan for Cycle Mobility (2014) |

4. Country perspectives on the social innovation stream

This section present a detailed description of the social innovation stream of sharing space for bicycles and promotion of bicycle culture in Copenhagen, Frankfurt, Milan and Brno. The greater emphasis is in how they stand today, and with reference to events that may have spurred the process that led up to the current situation. The four cities will be presented one by

one. The structure of the city sections will match the before described coding strategy of investigating the stream of social innovation and present cultural milestones, political logic milestones, and systemic and legislative milestones. In the presentation of milestones in the development of sharing space for bicycles and promotion of bicycle culture we seek to uncover who or what was responsible for driving the stream of innovation the way it went. After the presentation of cultural, political and systemic processes the section we present the central actors and central incidents in the field as well as the organisations' role in advancing the stream of sharing space for bicycles and promotion of bicycle culture. In conclusion to each of the city sections the dynamism of the field as well as stratification and (de-) commodification in the field is to be discussed. Following the presentation of the four cities will be presented a country comparison and synthesis.

4.1. Copenhagen

4.1.1. Specific focal points and milestones of the SI

Socio-cultural processes (practices, discourses)

Before going into detail on milestones in the socio-cultural area of the stream of innovation it is important to note that in Denmark biking has been at the core of mobility habits for a long time. What we will focus on in the presentation of milestones is sharing space for bicycles and promotion of bicycle culture in connection to environmental sustainability. But there is a pre-history that seems to invoke on this specific relation. In Denmark every child learns to ride a bike as part of their upbringing. This means that people who were brought up in Denmark always knew how to ride a bike long before environmental sustainability became a matter of concern. As one interviewee notes:

"Every Dane had a bike, and everybody learned to ride a bike as a child. We had an established biking culture" (Cop. Interviewee 1).

This can be seen as an important pre-condition for the development of the stream of Social Innovation in environmental sustainability of sharing space for bicycles and promotion of bicycle culture. An interviewee thinks that:

"Denmark and Netherlands have a cultural tradition of learning to bike from a very young age. Biking is part of basic upbringing. This means that bikes are a convenient form of transportation – because people actually know how to bike" (Interviewee 2).

The interviewee explains that:

"The way that we talk about biking is as a natural part of mobility and not just as a spare time activity. There is hence a very special understanding of biking in Denmark" (Cop. Interviewee 2).

In line of this argument about biking being a normal and everyday form of mobility practice another interviewee also thinks that:

"The fact that famous people and the royal family began to be seen biking around the city also promoted the use of bikes in everyday life".

Because everybody knows to bike and because it is easy to bike in Copenhagen an interviewee thinks that:

“In Copenhagen people bike because it is easy. People don’t bike because they have environmental agendas or the like, most people bike because it is easier to bike than drive a car or take the bus. And therefore in Copenhagen everybody bikes. People bike in their work clothes. You don’t need special clothes. And this gives a very democratic bicycle culture” (Cop. Interviewee 7).

There are two socio-cultural themes that are important for the development of sharing space for bicycles and promotion of bicycle culture in relation to environmental sustainability: **sharing economy** and **the liveable city**. These are socio-cultural tendencies that cannot be placed in specific time or ascribed to specific actors. Rather, they are international and national streams of ideas that have invoked on promotion of bicycle culture and sharing space for bicycles. According to one interviewee

“sharing has become a fancy notion. As such for example sharing bikes were not important, but the signaling effect was important because it was in line with international tendencies and ideas that pushed the orientations of people’s practices” (Interviewee 4).

One example of the notion of sharing came to Copenhagen was when the first free bike sharing system was initiated by municipality of Copenhagen in 1995 (Dansk Arkitektur Center, 2014). The Municipality of Copenhagen still provides a bike sharing system but it is no longer free. Moreover there are now also private actors in Copenhagen who work with bike sharing. Donkey Republic is a little company that provides an app-based sharing system that is based on a special bike lock that can be localized and opened by help of the app. Private people can hence share their bike with other citizens through the lock and the app (Ovacik, 2015). The theme of sharing space is being used actively at the third sector organisation Bicycle Innovation Lab where they develop innovative biking projects. They think that sharing space is linked to how biking is a better choice for city mobility because bikes take up less space than cars:

“In a growing city with more people and longer distances we have to face the question of space. We have not faced this problem until now, we have tried to make space for all the different types of mobility. But given the pressure today we have to actively engage in deciding whom we want to share space with. We cannot give space to everybody - we have to prioritize. And we here at Bicycle Innovation Lab want to inform and inspire politicians so that they will make choices that prioritize cyclists and public transportation” (Cop. Interviewee 7).

The other theme that is important apart from sharing is the ideas about the liveable city. According to an interviewee:

“there has been an international cultural and economic tendency to talk about the liveable city. When big cities compete in attracting big companies and successful consultancy firms they are aware that these companies care about mobility possibilities as well as art, culture and education” (Interviewee 2).

This new focus on whether cities meet the lifestyle choices that citizens make is also central in another interviewee’s understanding:

“Citizens’ demands change and hence a shift from focusing on cars to focusing on bikes is linked to a notion of the city as a place where people live their lives - and not just work at a factory or study before escaping to a more calm life outside the city” (Interviewee 1).

Another interviewee also agrees that there has been some cultural changes in the way that Copenhageners use the city, and hence new ideas on what a city should provide began to develop:

“From the beginning of the 90’ies people started using the public room actively in their daily life, by sitting on squares and in streets which are no longer just transit zones” (Interviewee 3).

Sharing space and the good urban life are values that people orient their lifestyles towards, and biking is a natural part of ideas about the good city and biking matches the value sets that people orient their everyday practices towards. Concern for environmental sustainability is part of the formation of this value set. One interviewee explains the relation between increased bicycling and a concern for environmental sustainability:

“If you do not believe in global warming then you are probably not motivated for biking at all, but lifestyle thinking is the most important. I think it is convenience and practicality that motivates people to change their lifestyle. The fact that the bike is 40 percent faster as a means of urban transport is an evident factor” (Interviewee 4).

Political logic development (prioritization, political leadership)

The political development in Copenhagen has seen both processes of political awareness and processes of political strategy. Processes of awareness as well as strategy regarding sharing space for bicycle and promoting bicycle culture seem to be rooted in three different political logics for practice: **reducing CO2 emissions**, and **promoting a livable city** and **improving health in order to increase effectivity**.

In 1996 Copenhagen saw a political awareness of the importance of bicycling. With the initiation of the Bike Accounts (Cykelregnskaber) the municipality of Copenhagen collected knowledge on copenhageners’ biking habits as well as their experiences of cycling in Copenhagen:

“In 1996 the municipality started making so-called Bike Accounts specifying how the Copenhageners use their bikes and what they think about the biking facilities and other matters relevant for biking in the city. These numbers and the development of i.e. the degree to which people feel safe when cycling in traffic, of the amount of people using their bike for everyday transportation were important politically” (Interviewee 3).

The political awareness of sharing space for bicycles was thus informed by the bike accounts that summarized cyclists’ experiences from biking the streets of Copenhagen. Citizens’ wishes and concerns regarding biking in the city were also at the core of the municipality of Copenhagen’s Plan for Traffic and Environment in 2004. Back in 2002 the City Council of Copenhagen initiated the plan for traffic and environment and held public meetings with citizens. Part of this plan was concerned with the improvement of biking lanes and establishment of new bike routes, at the request of the city council and in order to preserve the environment (Økonomiudvalget, 2004).

In 2002 the Municipality of Copenhagen presented the first policy on biking, Bike Policy 2002-2012, and the purpose of the policy was:

“both to highlight cycling as an environmentally friendly and efficient mode of transportation” (Københavns Kommune, 2002).

The political prioritization of sharing space for bicycles and promotion of bicycle culture took a leap forward with the political agreement of a first bike program (Cykelpakke) in 2006 that allocated 35 million DKK to bike projects, such as building biking lanes, improving existing biking lanes and building of new routes, in the municipality in 2006 and 50 million DKK in 2007 (Københavns Kommune, 2006). This was an important milestone in the area of political logic of the stream of social innovation:

“The first municipal bike program was initiated in 2006. This was the first time a significant amount of money was deposited for biking lanes, and this made many different bike project possible in the following years” (Interviewee 3).

In the same period as this radical improvement of the bike mobility network the municipality of Copenhagen published two pieces of policy that presented strategies for city planning that would meet environmental needs as well as livability needs of the city:

“In 2007 the municipality published a local strategy, Eco-Metropolis. This piece of policy presented four parameters for the future development of the city, among these was the goal to make the city CO2 neutral in 2025. Another important document was Metropolis for People (2009) presented goals and parameters for the local city planning, and was very inspired by the work of architect Jan Gehl. Gehl was concerned with the life in the streets and open spaces of the city” (Interviewee 3).

In EcoMetropolis biking is presented and conceptualized as a tool for reducing CO2 emissions in the city and hence the strategy is to improve the biking infrastructure of the city in order to make more people bike:

“Cyclists already contribute to holding down CO2 emissions from traffic compared to other major cities. When we achieve our goal of 50 % of Copenhageners cycling to work, we will reduce CO2 emissions by a further 80,000 tonnes per year in the traffic of Copenhagen. We would like the new cyclists to be car drivers discovering the many advantages of cycling: no time wasted in traffic jams, better health, less CO2 emissions and cheaper transport” (City of Copenhagen 2007).

The key people behind these important political steps in the direction of sharing space for bicycles and promotion of bicycle culture were Klaus Bondam, Mayor of Technics and Environment, and Ritt Bjerregaard Lord Mayor in Copenhagen:

“Integrating security in city planning started when Ritt Bjerregaard and Klaus Bondam took office in Copenhagen (2005/2006). Safe routes and priority to bikes by large traffic intersections are relatively new developments the last 10 years. Bjerregaard and Bondam established the Bike Secretariat in the Municipality of Copenhagen and this was a very important office in regard to investigating and changing the infrastructure of biking in Copenhagen. Among other things this office made sure that intersections were planned in a way that gave cyclists good opportunities, instead of the old regimen that put cyclists’ opportunities to save time after cars’, because biking was used to be thought of solely as a spare-time activity” (Interviewee 1).

At a national level 2009 was an important year as well:

“In January 2009 the strategy laid ground to a broad agreement “A green transport policy” between the Government and most of the Danish parliament (Government et.al, 2009). 93 billion DKK was put into an Infrastructure Fund and more than two thirds was planned to finance investments in public transport. This agreement is the first governmental strategy for the CO2 emissions reductions in Denmark” (Vad Mathiesen & Kappel 2013).

As part of this agreement the first national Bike Funds was established:

“The first national Bike Funds was established in 2009 as a political settlement across the aisle. It was part of the Green Transport Agreement of 2009” (Interviewee 3).

The political strategies for prioritizing sharing space for bicycles and facilitating the use of bikes in Copenhagen were hence rooted in concerns for the environment and at the same time took measure to improve the livability of the city. In 2010 the city of Copenhagen employed a new city architect, Tina Saaby. She worked to improve the city's open spaces and mobility patterns in order to improve environment and city life:

“The City Architect has had a focus on the active use of urban open space. Her focus has not been on cycling as such, but she has focused on soft mobility as pedestrians and cyclists because this form of mobility does something special for the open urban space. Cars they pollute the air, they are noisy and the space that is occupied by cars cannot be used for other things. Hence you cannot create an open space where people can stay and hang out, and this means the planning of the city's infrastructure prioritize other form of mobility” (Interviewee 2).

A third parameter that has pushed the political agenda regarding biking is that - apart from environment and livability - biking contribute significantly to the economy. An interviewee explains how this argument is put forward by the Capital Region when they initiate bike projects and allocate money to build new infrastructure:

“The Region's political arguments that are put forward on basis of the Bike Account numbers are that the region's workplaces experience a decrease of 1 million sick leave days per year. On this basis efficiency and productivity increase and this produces a 1,5 billion DKK surplus in terms of tax income” (Interviewee 3).

The latest municipal policy on biking for 2011-2025 aims at making Copenhagen the World's best bicycle city. In the policy it is stated that the plan is part of:

“the vision of Copenhagen as Climate Capital . Good conditions for Cycling is also an important element of the objective of a good life and the goal of making Copenhagen CO2-neutral by 2025. Good conditions for biking are also part of the city's health policy” (Københavns Kommune, 2011).

In 2012 the municipality of Copenhagen, represented by the Lord Mayor and the Mayor of Techniques and Environment, published the Copenhagen 2025 Climate Plan for reaching the goal of making Copenhagen CO2 neutral by 2025. Here biking takes an important place with regards to environment, quality of life in the city, green growth as well as private and public economy (Københavns Kommune, 2012).

In 2014 Copenhagen was awarded the European Green Capital Award (European Commission European Green Capital, 2014a). The attention granted to Copenhagen in this regards inspired the city to initiate the project “Sharing Copenhagen” where the goal is to share the ideas and solutions of Copenhagen with other cities that wish to become greener (European Commission European Green Capital, 2014b). “Sharing Copenhagen” presents five themes of action and interests and during 2014 the city organized events under the five headings: “Good Urban Life of the Future”, “Resource Effectiveness and Sustainable Consumption”, “The Blue and Green City”, “Green Mobility” and “Climate and Green Transformation” (City of Copenhagen, 2014).

The political rationales that push the bike agenda in Copenhagen and result in both awareness and political strategies aim at protecting the environment, creating livability and safety, and improving health and productivity. The stream of innovation has thus seen a focus on shared

streets and mobility spaces with regard to biking but also public transportation and pedestrians. The focus that there has been in Copenhagen on improving the space utilization for bike mobility is an important step in the process of social innovation stream of sharing space for bicycles and promotion of bicycle culture in relation to environmental sustainability.

Systemic/legislative changes (materiality, design and infrastructure)

In Copenhagen the **traffic systems** and **infrastructure** make space for bikes. This is done in several ways. For example an interviewee explains that:

“Today traffic lights are designed to match the flow of cyclists rather than cars. When that happened people were overwhelmed and very happy. This has been a development that we have adopted from Amsterdam where the trend started (and in Amsterdam when it rains the traffic light shifts to green when a cyclist is approaching). In Copenhagen the development of traffic lights has not been fully installed over the city. It is still the cars that are prioritised, but we see a new dynamic” (Interviewee 4).

Traffic lights in Copenhagen are thus developed to that match cyclists’ tempi (City of Copenhagen, 2011).

One interviewee further explains important changes of the traffic systems:

“What happened was that we learned to make use of the gaps and intervals of non-used space and time. We hence packed traffic in a new way so that we could make use of this extra time and space and “give” it to the cyclists. Hence car traffic was not negatively affected, but cyclists were positively affected by these new traffic arrangements. Cyclists had advantages and cars maintained status-quo. We have learned to utilize the extra unused time and space and packed traffic in a new way so that cyclists advantaged from it. We became SMART” (Interviewee 5).

Traffic systems and designs of intersections of the city’s road network has thus undergone small changes in terms of the space and the time that is being given to the cyclists. Between 2004 and 2014 the mean speed on bike increased from 15,3 km/h to 16,4 km/h (Københavns Kommune, 2014a). The relation between cars and bikes is an interesting matter in this context. The space is shared with bicycles but this does not mean, that space is being taken away from the cars; rather new space is being created by way of new traffic light designs and road designs.

An interviewee thinks that

“Municipality of Copenhagen does not fight against car traffic, but does fight for bike traffic and pedestrian mobility. In Denmark we don’t have an open critique of car traffic, because cars are still seen as a valuable and necessary means of transportation. Instead the municipality has improved biking traffic without mentioning the relation between prioritizations of cars as opposed to bikes” (Interviewee 2).

This relation between cars and bikes is important in terms of how we can understand sharing space. The way that cars and bikes are taking up space in the streets has been changed in a way that puts bikes on the same footing as cars, but that does not minimize the space for cars. This is also seen in the Danish Road Traffic Act:

“The Road Traffic Act includes bikes, and this makes bikes of equal importance as cars in the traffic legislation” (Interviewee 2).

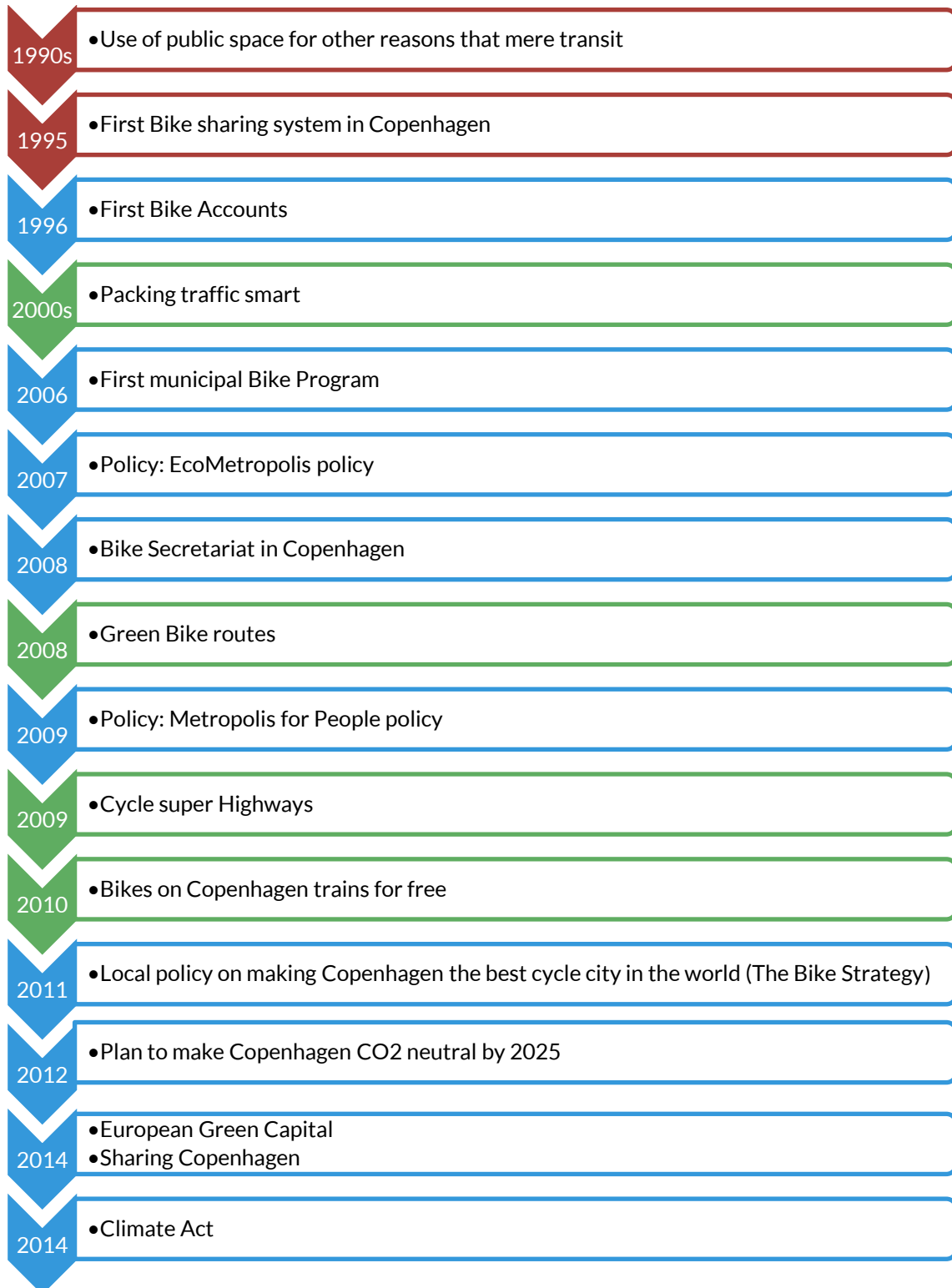
Other changes in the materiality of the city are the new infrastructure projects such as cycle paths and biking routes. From 2004 to 2014 the network of biking lanes has gone from covering 329 km to 368 km. (Københavns Kommune, 2014a). In 2008 a new biking route that traverses the city from the north to the south was built as a pilot project. It has been a great success and has inspired other biking routes. The routes are mostly running through green areas and quiet places, and hence the vast majority of the routes are on actual cycle paths, but at some points the path runs alongside roads and traffic. The long route that traverses the city is called The Green Route and is 10 kilometers long. The route makes it possible for cyclists to almost avoid any interaction with cars along the way of their trip through the city (Københavnegrøn, n.d). Another infrastructure project is the Cycle Super Highways that will facilitate commuters to travel over large distances in a quick and easy way with only very few obstacles. These cycle highways are supposed to form an alternative to car mobility and is targeted at people who cover five kilometres or more on their daily route. In 2009 the municipality of Copenhagen invited the municipalities of the region to create a network of bicycle commuter routes, the so-called Cycle Super Highways. 18 municipalities and the Capital Region joined the project and with state funding (allocated to improve cycling conditions) the partners established a project secretariat. Today 23 municipalities participate in the project of the Cycle Super Highways (Supercykelstier, n.d.).

Furthermore the municipality has built several bike bridges in Copenhagen the last 10 years. The bridges connect the cycle network of Copenhagen and traverses both water and regular traffic. The new bike/pedestrian bridges are: the three bridges of Holmen (Trangravsbroen, Proviantbroen and Inderhavnsbroen) that crosses the water of the Copenhagen Canals, the Cykelslangen that is built 6 meters above ground traffic, and Cirkelbroen that connects the harbour areas of Christianshavn in central Copenhagen (Riis, 2015).

Another systemic change that supported sharing space for bicycles was when it became free to bring a bike on the Copenhagen train-lines in January 2010. Since it was made free of charge the number of people who take their bike on the train has increased rapidly. This means that more people choose to combine biking and taking the train when going to work, instead of driving a car (DSB, 2011).

A recent legislative event was the announcement of the first act on climate in Denmark in 2014. The act establishes an overall framework for Denmark's climate policy in order to facilitate a transition to a low-carbon society in 2050. The act establishes an advisory body, the Climate Council, that has to support political decisions. One of the areas of expertise of the council's members is transport (Klima-, Energi og Bygningeministeriet, 2014). The Act aims to establish an overall strategic framework for Denmark's climate policy in order to transition to a low-carbon society by 2050, ie a resource-efficient society with an energy supply based on renewable energy and significantly lower greenhouse gas emissions from other sectors, which also supports growth and development. The Act also contributes to transparency and publicity about the status, direction and momentum for Denmark's climate policy.

Figure 3: Copenhagen Milestones: Cultural changes (RED), Political changes (BLUE) and Systemic changes (GREEN)



4.1.2. Central actors and their primary roles in advancing the SI stream

State sector

Municipality of Copenhagen

The Municipality of Copenhagen is an important actor. From 2006 the Lord Mayor and the Mayor of Environment and Techniques initiated new and ambitious bike policies of Copenhagen and secured money for the building of new biking lanes. The Municipality has an office in the section of the Environmental and Techniques that primarily works with bike initiatives, the Bike Secretariat, and moreover the Municipality conducts the Bike Accounts every second year. The Municipality is actively engaged in the development of the city's spaces and infrastructure, and has a focus on how to integrate bikes better into the city. Part of this task is building the new bridges for bikes and pedestrians around the city. The City of Copenhagen also developed the "I bike Copenhagen" app which is an open source bicycle navigation app that helps cyclists navigate and plan the fastest and easiest routes through Copenhagen. Another innovative project initiated by City of Copenhagen is the concept of "good cyclist karma". The concept is supposed to motivate cyclists to take care of each other in traffic, making space at the biking lanes and help other cyclists. The concept promotes positivity and nice driving on Copenhagen biking lanes through campaigns, posters and stickers in public space (Cykelistforbundet, 2015).

The Municipality initiated the The Bike Super Pathways (Cykelsuperstier.dk) project in 2009 which has since been developed by the Capitol Region and 22 cooperating municipalities. The goal of the project is to build a grid of high-speed bike paths with as few intersections as possible and with air and repair stations on route to boost bicycle commuting on distances longer than five kilometres. In an agreement from 2012 the Government decided to support this initiative on a national scale with 189 million DKK (Government et.al, 2012). The subsidy can be obtained in combination with local co-funding.

The Danish Road Directorate (Ministry of Transport and Buildings)

The Road Directorate administers the National Bike Funds that support bike projects all over the country and The Road Directorate's office in Copenhagen plans traffic and parking in the city. Hence this is an important actor in the field of sharing space for bicycles and bicycle culture.

The Capital Region

The Capital Region has produced a regional Bike Accounts like the ones in Municipality of Copenhagen. The Region also support the work with the Cycle Super Highways.

Market Sector

Donkey Republic

In 2015 the Copenhagen based company Donkey Republic launched a bike sharing system that can be used through an app and a special lock. Donkey Republic is the first actor to initiate a bike sharing app service in Copenhagen. The project is still very small-scale and Donkey Republic cannot be seen as a key player in the field.

Copenhagenize

Copenhagenize is a blog and part of the Copenhagenize Design Company and has been running since 2007. From the beginning the blog has presented photos and commentaries about bicycle culture of Copenhagen by the initiator Michael Colville-Andersen. At the blog it is described that:

“In the early days of the blog, Copenhagenize was the sole voice for advocating everyday cycling without fancy gear and carbon-fibre wonderbikes. In late 2007 there were hardly any other bicycle blogs that weren't focused on racing or recreational cycling” (Colville-Andersen, 2011).

The blog has had great success and Colville-Andersen is travelling around the world spreading the ideas of the Copenhagen bicycle culture through protos. Colville-Andersen also began the Copenhagenize Design Company which is a consultancy firm that advises cities how to design and integrate bicycle infrastructure. This is not a key actor, but it can be said to play a role in the field, since the discourse of Copenhagen as a bike city is promoted outside the country.

Copenhagenize has impact on the image that Copenhagen has in other countries, but the actor cannot be seen as a key driver of the SI stream in Copenhagen, rather Copenhagenize taps into the ideas and tendencies, and communicate these to an audience outside the country.

Biomega

Biomega was founded in 1998 and is a brand that designs city bikes and has its headquarters in Copenhagen. Martin Skibsted is co-founder of Biomega. The brand is special because it has tried to make urban biking very smart by designing luxurious bikes.

The company states that it wants to create:

“a paradigm shift in the way society imagines transportation by making urban ‘furniture for locomotion’, developing city bikes so beautiful that they compete directly with cars and imbue our cities with new meaning” (Biomega, n.d).

In this way Biomega is promoting and innovating bicycle culture in Copenhagen as well as in the rest of the world.

Biomega cannot be seen as a key actor driving the SI stream. Rather, the case is that Biomega taps into the tendencies of biking being fancy, and on this basis there is a possibility of selling luxurious bikes.

Third sector

Danish Cyclists' Federation

The organization is a membership organisation that works to create better safety and better experiences for cyclists in Denmark. The Danish Cyclists' Federation has a Copenhagen office, where they work to improve biking conditions in Copenhagen and arrange bike trips around the city. An innovative approach is the campaign “We Bike to Work” that motivates workplaces and their employees to bike to work in order to improve health, save money and take care of the environment. In Copenhagen more than 17.000 employees participate (Cykelistforbundet, 2015). The Danish Cyclists' Federation has a section called the Cycling Embassy of Denmark. This section offers presentations, lectures, workshops, and guided bike tours in the major cycle

cities around Denmark. The Embassy's services target professional planners in public administrations and private companies, local and national policy makers, students, researchers, and civil society organisations (Cycling Embassy of Denmark, n.d).

Bicycle Innovation Lab

Bicycle Innovation Lab is a project that was started in the local public office for environment, Miljøpunkt Amager, in 2011. In Miljøpunkt Amager they plan sustainable mobility and environment-related project in the local area of Amager. Bicycle Innovation Lab was started by an employee in the office, because the project was granted funding from the national Bike Fund. With 3 million DKK it was made possible to start up Bicycle Innovation Lab. The project had 1,5 employees and apart from the salaried staff there were many volunteers, so that at a daily basis there would be between 5 and 7 people working with Bicycle Innovation Lab projects (Cop. Interviewee 6). The project hence started in the regi of the local environment office, which is supported by the local committee, but it was funded by the national Bike Fund. After the funding was used the organisation was, and still is, based on membership fees from members of the organisation.

Bicycle Innovation Lab has started several projects. The Bicycle Library is a bike sharing concept where members can lend bikes and try out different types of bikes such as cargo bikes, electric bikes and the like. The organisation has also created an exhibition of ideas, experiences and pictures from Copenhagen as a bike city , "The Good City". The exhibition is an international traveling exhibition. Bicycle Innovation Lab also gives presentations and talks and arrange workshops and tours on the topic of innovation and biking and mobility. By way of the Bicycle Library the organisation tries to promote bicycle culture and change the mobility patterns of citizens' everyday lives:

"The idea behind our Bicycle Library was to find a way to give people the possibility to try out an alternative means of mobility than driving in cars. It can be very hard to challenge car-ownership, because for distances that are longer than five kilometre people will choose a motor vehicle. We wanted to expand this radius and make people willing to bike distances longer than five kilometres. A realistic alternative to cars, and an alternative to collective transportation, is a bike that makes cycling 20-25 kilometres possible. And these bikes are available at the Bicycle Library" (Cop. Interviewee 7).

What Bicycle Innovation Lab is trying to do is to raise awareness of other means of transportation than cars, by providing the service of the Bicycle Library. The concept of bicycle libraries has been successful and has thus spread to other cities:

"The idea of the Bicycle Library has spread to Helsingør and also Malmö, Stockholm and other cities" (Cop. Interviewee 7).

We can from this quote conclude that Bicycle Innovation Lab is advancing the stream of Social Innovation by expanding their Bicycle Library to other cities in Denmark and Sweden. Bicycle Innovation Lab also focus on business and the organisation seek to promote bike use in the business world through the creation of a mobile Bicycle Library:

"Apart from private people we also focus on companies. We hence developed a mobile Bicycle Library. We moved the Library out to the companies and gave the employees the possibility of trying out bikes to and from work" (Cop. Interviewee 7).

The organisation also engages in advocacy activity where they try to influence politicians and decisions:

“During the first period of this project an example of our will to be more creative and innovative than the Danish Cyclists’ Association was that despite the general political opinion on biking helmets, we dared to take a more confronting stance. We wanted to point out that in the places around the world where helmets are mandatory the share of people who bike has dropped for this reason. Instead we think that people should be encouraged to bike and that we should support people in this” (Cop. Interviewee 7).

The Bicycle Innovation Lab hence works to push the bicycle agenda and they want to change the mind-sets of the existing way of thinking about security for bicycles in the urban space. In this way the Bicycle Innovation Lab is advancing the stream of Social Innovation at the level of political logics by amending the prevalent understanding of security and sharing of the urban space between types of mobility:

“Our position is rooted in the fact that looking at security for cyclists, what is dangerous is in fact the cars and not being a cyclist as such. Hence we think that focus should be on the cars and on regulating cars, instead of regulating cyclists’ actions by making helmets mandatory” (Cop. Interviewee 7).

Cycling Without Age

Cycling Without Age was started by Ole Kassow in 2013 and it is primarily providing a service, bike rides, which is linked to ideas of mobility and quality of life:

“It started three years ago because an elderly man living in a nursing home next to where I live kept catching my eye when I biked past him in the morning or evening. I felt that there was something sad about him being in this same place all the time, because his age meant that he had a very limited mobility. And I wanted to change that, and I rented a rickshaw and I came by the nursing home and asked if I could take him out on a ride” (Cop. Interviewee 8).

The organisation is built on the concept of taking elderly citizens who live at nursing homes out in the city by a rickshaw bike. While riding the bike the elderly people and the person driving the rickshaw talk and tell stories about the things they see in the city and the experiences that they have had. The project is hence about mobility and about well being and about belonging to the city:

“A person’s elderly home might not be close to where the person has lived his or her life and hence being able to take people to these places is very important for making these people remember their life and feel at home in their own city” (Cop. Interviewee 8).

The reason why Kassow started the project was not an aim at creating a big and successful organisation that provides important services to elderly citizens:

“My own empowerment takes root in my indignation. I was concerned that so many old people are lonely and have a bad quality of life, and that as a consequence they are heavily medicated. Everybody who feels indignation about something they also have a power to act, and they can choose to act and do things differently” (Cop. Interviewee 8).

In 2013 the project received funding from the Municipality of Copenhagen, and the money was used for buying rickshaw bikes to the nursing home. The project depends on the municipalities in Denmark to buy bikes for the elderly care homes, but the service itself is performed by

volunteer 'riders' who ride the bikes with the elderly passengers. It is the volunteers who themselves plan and execute the trips, by way of an online platform. The organisation is hence driven by the volunteers who sign up and share knowledge. Ole Kassow himself and the other employees at the organisation push the agenda of Cycling Without Age in Denmark as well as in other countries:

"We have an online platform where we share knowledge and where we put resources on i.e. insurance and concepts. We want to make it possible for people to help each other. And we also go to other countries to teach and share knowledge with our colleagues there. I have been in 15 countries and my partner here in Denmark has been to 5 countries" (Cop. Interviewee 8).

Kassow has held TED talk in 2014 and this has helped to spread the concept of Cycling Without Age all over the world.

Cycling Without Age is primarily providing services, bike trips, and is not engaged directly in advocacy activities. Having said that the organisation do engage in advocating for biking as a means of well being and improvement of quality of life. By promoting the Cycling Without Age concept in other cities and countries the service and its purpose is expanded nationally and internationally through municipalities and elderly care networks.

4.1.3. Dynamism in the field

In Copenhagen 63% of Copenhageners bike to their workplaces or education places, and 45% of all the people who come to work or study in Copenhagen commute by bike. The number of people who bike to work or education in Copenhagen has increased from 36% in 2004 to 45% in 2014 (Københavns kommune, 2014b).

The dynamism of the field shows that more and more people bike. At the same time more and more organisations from all sectors are joining in and supporting the biking agenda. An interviewee says that:

"We in the Danish Cyclists' Federation have experienced that there are an increased number of actors in the field of biking and promotion of bicycle culture. I.e the Danish Cancer Society, the Danish Heart Association, the Danish Diabetes Society as well as many municipalities (Copenhagen, Odense, Aarhus), commercial actors like Gehl Architects, the Ministry of Foreign Affairs' ambassadors around the world. And Cycling Without Age is an important actor, also for promoting the bicycle culture of Denmark to other countries" (Interviewee 3).

What makes people bike?

When realizing that more and more people bike it is interesting to question what has caused this development. An interviewee notes that

"The desire for bikes cannot be explained by built infrastructure that facilitates biking. It must be explained by a change in lifestyle patterns" (Interviewee 4) .

Contrary to this comment another interviewee thinks that built infrastructure is what is really making people use bikes:

"The latest evaluation of the public Bike Funds that invested one billion DKK to the building of 250 km biking lanes shows that in places with newly built biking infrastructure the percentage of people who bike has increased with 24 percent" (Cop. Interviewee 3).

These two different explanations of why more and more people bike or support sharing space for bicycles tells us that there is an ongoing discussion on whether the process of sharing space for bicycles and promotion of bicycle culture stems from cultural tendencies and lifestyle demands or from systemic changes such as more built infrastructure. The increase in the number of people who bike and support sharing space for bicycles cannot be explained by a single set of events and processes, but has to be comprehended in light of the variety of processes that have been described in the sections of cultural, political and systemic changes.

Whom does the inspiration for changes come from?

An interviewee thinks that:

“I do not think that local politics and local initiatives and interests have helped to push the biking agenda of Copenhagen (...) the ideas does not com from the citizens. The inspiration comes from politicians, mayors and talented public servants. Apart from that also the Danish Cyclists’ Federation has been a good player in pushing the agenda” (Interviewee 5).

This quote tells us that changes stem from the political level. This analysis is backed up by another interviewee:

“The development of cycling is to a great extend pushed, I think, by ‘heroes’ in the public directorates and boards and the Municipality of Copenhagen. This started back in the 80’ies” (Interviewee 1).

Having said that this interviewee also thinks that civil society plays a role to push the official agencies through advocacy:

“The Danish Cyclists’ Federation has always had a great impact because of their advocacy activities. It is a very active organisation and it formulated many wishes and proposals for the formal policy development. And Bicycle Innovation Lab is also an important organisation. They all work to push the agenda of cyclists” (Interviewee 1).

Yet another interviewee stresses the importance of the Municipality, because the work that has been done here has a strong influence on the citizens:

“Copenhagen Municipality is a very important actor in pushing this agenda. I think that there is a tendency to underestimate the importance of city planners who find ways to start new projects and one step at a time they change the mobility network and improve the possibilities for biking (...) Danish Cyclists’ Association is also important, and also Bicycle Innovation Lab is an important actor in the discussion (Interviewee 2).

Actors from the public sector seem to be of importance to the development of the SI stream, especially in terms of building infrastructure. Third sector actors are seen as important for advocacy activities and engagement in the discussion. Market sector actor actors do not play an important role for the SI stream in Denmark.

Disruptive changes

The innovation of sharing space for bicycles has evolved gradually in Copenhagen. Actors such as Municipality of Copenhagen and the Danish Cyclists’ Federation have worked to promote bicycling culture and sharing space for bicycles. The infrastructure in Copenhagen has gradually become better and better for cyclists, and safety has been enhanced. These actors have thus aimed at improving the mobility space for cyclists for several decades now, and 10

years ago the political will in the city parliament to improve biking in Copenhagen resulted in a leap forward in terms of infrastructure and other bike-related projects and initiatives.

When we turn to look at the work that the organisations Bicycle Innovation Lab and Cycling Without Age are doing we discover some disruptive and radically new tendencies in the field. The two organisations are rethinking bike-use as more than a mere instrument for mobility that can be a green, healthy, effective instrument for mobility. An interviewee points to a tendency towards thinking of bike-use not just as a means of green and healthy transportation but also as a socially innovative force:

“Cycling Without Age is an important civil society actor. This project is about mobility but it is just as much about all the things that biking is apart from a mere form of mobility. Biking in this project is about social life and promoting the quality of life for elderly through biking” (Interviewee 3).

Bicycle Innovation Lab has promoted bike use in the business world through their mobile Bicycle Library. Hence they have promoted work-related bike-use instead of the use of cars at the Danish Broadcast Corporation. The fact that biking enters the business world extends the interest for biking and sharing space for bicycles, as the latter sometimes play an important role for the corporations' everyday activities.

Disruptive changes regarding new approaches to biking and new areas for bike-use thus seem to come from organisations, rather than from the state actors, though the latter are also very important for extending and improving bike-use for the universal purpose of mobility.

Counter-trends

According to two interviewees the number of cyclists has slightly decreased. This is the case in Denmark as a whole, and not in Copenhagen (Britz Nicolaisen 2016). One interviewee notes that the share of people who bike has stagnated and dropped a little bit recently due to that fact that the Government has lowered the fees on buying cars (Interviewee 5). Hence the choice between cars and bikes is correlated to prices. As driving a car becomes cheaper less people choose the bike, but in times before prices on cars were lowered, more people would choose to bike.

Another interviewee mentions that new numbers show that young people bike less, and he points to the fact that in most public transport there is wifi accessible, whereas it is illegal to use a phone when riding a bike (Interviewee 3).

One interviewee notes that even though biking has a priority in Copenhagen, the power structures in the country are differently organised:

“There is a lot of attention on bicycling in Copenhagen, but the interest of the wealthy and powerful societal actors is directed at car traffic and oil import. It is almost impossible to grasp the power and money that lies in the car traffic management” (Interviewee 2).

4.1.4. Stratification and (de-)commodification in the field

Regarding the stratification of the field in the context of Copenhagen the group of people who bike is very diverse and people of all ages bike. Moreover two tendencies contribute to widen the user-structure. First, biking is becoming fancy because it can be seen as a way of creating a personal image. Second, biking tends to be a faster way to get around in the city than driving a

car, and this makes the bike a more convenient choice. This can be said to be linked to the size of Copenhagen, as it is possible to reach the other end of the city in 30 around minutes. The Copenhagen Bike Accounts' focus on safety has also resulted in enhanced safety for cyclists, and this can be seen as a factor for making people of all ages ride a bike, and even young school kids ride their bike to school in the morning.

De-commodification is high in the field, because it is free to ride a bike, and compared to other means of transportation very cheap. One tendency in the direction of commodification is the new brands of luxury bikes, that are very expensive.

4.2. Germany/Frankfurt

4.2.1. Specific focal points and milestones of the SI

Socio-cultural and social processes (practices, discourses)

Frankfurt is a 'city of commuters', with significant numbers of people travelling into and outside the city every day. One of our interviewees describes the situation and the need to respond to it this way:

"Frankfurt is the city with the highest number of commuters in Germany [...] And it has been recognised at an early stage that alternative concepts of mobility can help ameliorate the situation" (Fra. Interviewee 2).

With 'alternative concepts of mobility' the interviewee refers to bike traffic in particular. At the same time another interviewee outlines the competition for public space that exists in Frankfurt:

"Frankfurt is not a residential city, it is a business city and it has a limited amount of public spaces and there has always been competition for them. [...] But we see this everywhere, for each square meter of public space, there are numerous ideas how to use it better than is currently the case" (Fra. Interviewee 9).

This attention to space could be seen as an inhibiting factor to the promotion of bike use, since other means of transport, for economic reasons are often given priority and there are numerous alternatives and demands of how to use public spaces otherwise.

Another socio-cultural tendency in Frankfurt is that there has been a clear tendency in Germany and also Frankfurt for creating a better way of life, which goes hand in hand with a new awareness of physical health. One interviewee mentions, that two waves have been responsible for an increase of bicycle use in Frankfurt:

"I think two waves have coincided in Frankfurt. One thing is that there is a positive attitude towards bike use and that is I think a general trend in Germany. And then there is the Green Party leading the city parliament" (Fra. Interviewee 1).

In 2002, traffiQ was launched to increase public use of bicycles (TraffiQ Lokale Nahverkehrsgesellschaft Frankfurt am Main mbH, 2003). TraffiQ was founded by the City of Frankfurt and is among other things partner/lead partner in EU Projects to communicate with other cities in Europe with the aim to increase public transport and to change traffic behavior in order to support sustainable means of transportation. This development shows how people's behaviour and habits are being changed by promoting an awareness of sustainability in relation

to transportation. As a socio-cultural tendency this link between awareness of sustainable practices and biking as a means of transportation is evident in Frankfurt.

The civil society organisation ADFC started the bike+business concept in 2002 (ADFC Hessen, 2016a; Rhein-Main-Verkehrsverbund, 2016b). Through Bike&Business, large companies were invited to create a bike friendly environment for their employees, promote bike use, offer spaces for bike parking etc. This promotion of bicycle culture in the business world is an example of a change of the transport mindset of employees and employers in Frankfurt. Measures to promote bicycle culture among students have also been taken by way of a concept that Frankfurt University's students union initiated 2013 in cooperation with Call a Bike, a bike renting provider, so that students were able to use bikes 45 minutes for free (Allgemeiner Studierendenausschuss Goethe Universität Frankfurt am Main, 2013, 2016). This is thus aimed at making students bike more by providing a free service that will allow students to try out biking as an everyday means of transportation.

Political logic development (prioritization, political leadership)

In 1992, the City of Frankfurt presented a bicycle traffic concept with 12 main routes (Leclerc, 2014b; Murr, 2014). This bicycle traffic concept was launched, since the City of Frankfurt wanted to reduce private transport within the city. However, the realization of this traffic concept was never fully completed but reacted to by the "Lückenschlussprogramm" (Gap Closure Program) in 2014 (Leclerc, 2014a, 2014b). The "Lückenschlussprogramm" was launched and 130 serious gaps in the Frankfurt's bicycle traffic network were fixed.

In 2009 and 2010, the City of Frankfurt launched the Radfahrbüro, a specialized office managing and maintaining cycle paths and a variety of cyclist matters (Stadt Frankfurt am Main, 2016c). In 2011, a city parliament was elected in Frankfurt with the best results the Green Party ever had (Discussed in interview 4). Due to this result, the Head of the Traffic Department from 2011-2016 was and is a member of the Green Party. Under the leadership of the department, Frankfurt has been trying to increase the number of cyclists in the city. Among other things this has led to an extended budget for the Radfahrbüro, which is currently equipped with five full time positions.

The City of Frankfurt participated in creating an online platform on which citizens could report damages to biking infrastructure that connects 54 German communities and won the German bicycle award in 2010.

In 2014 the political rationale at a national level took a leap forward regarding promoting sharing space for bicycles and bike use. The Ministry of Transportation set the goal of 10% of all travel should be performed by bike.

Systemic/legislative changes (materiality, design and infrastructure)

A central incident regarding infrastructures in Frankfurt was the opening of one-way streets in the city for bicycle use against the general direction of the respective streets. The basis for this measure was built in 1994, when the Ministry of Traffic of the Federal State Hesse made way for Frankfurt to adopt this rule. However, it took up to 2006 until wider areas were included in this scheme, extending the areas of the initial pilot projects.

One interviewee describes the process as follows:

“In the 90s we have researched counter-directed traffic use of one-way streets by bikes, in speed restricted areas. Frankfurt was a pioneer in this field, but it hadn’t been followed up properly. [...] it has only been picked up again in 2005 or 2006. It has been tried to open all of the many one-way streets to counter-directed bike traffic” (Fra. Interviewee 9).

This statement was independently backed by another interviewed person (3). The effect was an immense push in the release of public space for bike use, as further explained by the above interviewee:

“And hereby the infrastructure for bikes has suddenly increased explosively without us having to build or mark a single new bike track—this has also increased the quality of bike use” (Fra. Interviewee 9).

The development was promoted by the transport minister of Frankfurt at the time, who pushed for 800 km of one-way streets to be opened to contraflow bicycle traffic by 2009. This measure created additional space for cyclists in the city at very low costs.

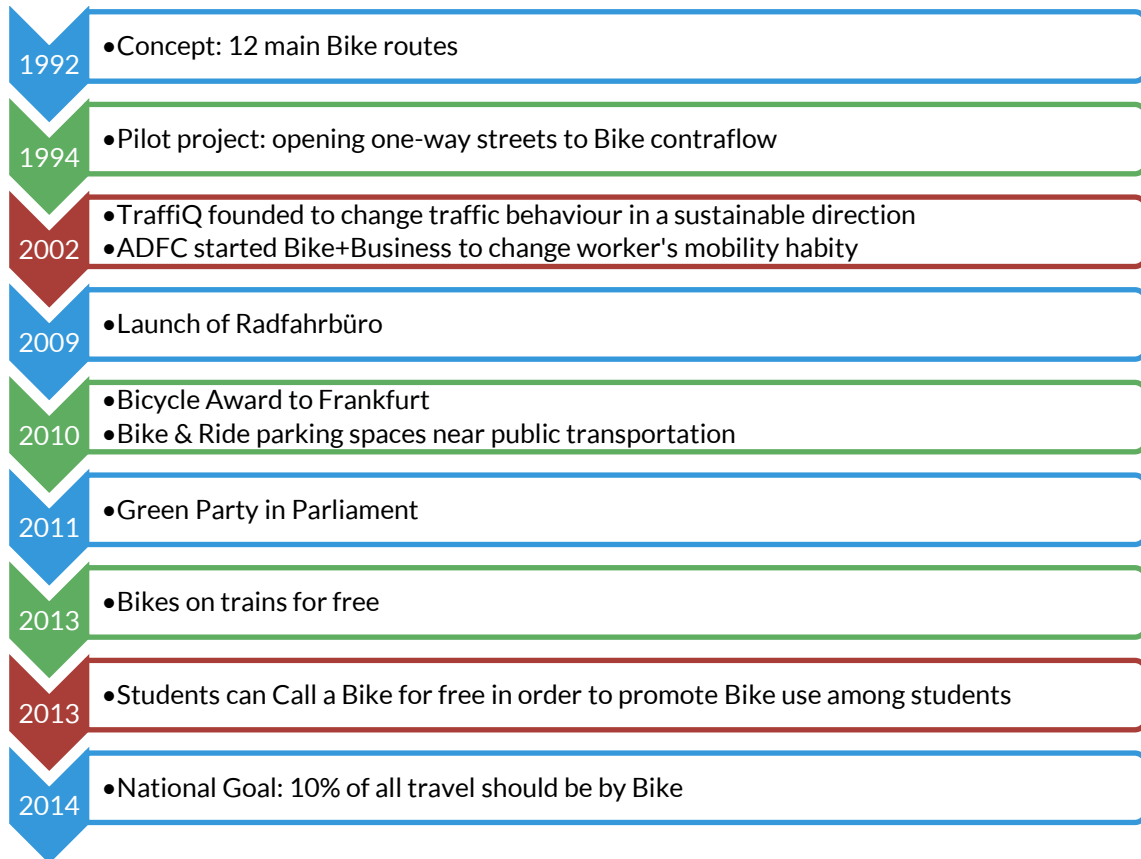
Another change of the infrastructure of the city regards the integration of public transportation and biking. One interviewee describes a project from 2010:

“There have been infrastructural changes such as bike&ride spaces, bike parking next to public transport” (Fra. Interviewee 4).

And in 2013 and 2014 the local traffic coordinator RMV introduced a concept, where bicycles could constantly be taken on public transport free of additional charge (Rhein-Main-Verkehrsverbund, 2013). In addition, a cycle path for employees from the southern train station to the airport was opened up (Reidl, 2015; Stadt Frankfurt am Main, 2013). In cooperation between the civil society organisation ADFC and the traffic agency RMV a bike to fold is being offered for sale to promote the combination of bike and public traffic (Rhein-Main-Verkehrsverbund, 2016d).

It is evident that several infrastructural measures in combination have levered the availability of public spaces for bike use, and as a result in 2010 Frankfurt was awarded the aforementioned German bicycle award “Best for Bike”.

Figure 4: Frankfurt Milestones: Cultural changes (RED), Political changes (BLUE) and Systemic changes (GREEN)



4.2.2. Central actors and their primary roles in advancing the SI stream

State sector

The RMV (Quasi public)

RMV as a local rail traffic provider is collaborating with different actors like the federal state, the city of Frankfurt, Deutsche Bahn (the national railway company), Nextbike (a private provider of a bike renting system) and is linked with projects like Bike & Business (initiated by ADFC). RMV has been responsible for or the driving force in: Providing free-time Busses, bringing more trains onto the track that cater to the specific needs for bike users (e.g., that have wider areas for travelling on the train with a bike), establishing the right of bike users to take bikes onto the train free of charge throughout the day. Furthermore they created a fold-up bike in cooperation with the ADFC as a reaction to narrow spaces in public transport, unsuitable for regular size bikes and have solicited Deutsche Bahn to permit transporting fold bikes on ICEs (high speed trains), which had previously been banned (Rhein-Main-Verkehrsverbund, 2016d).

The Federal State of Hessen

The Federal State Hessen has had and still has a major say when it comes to: Initiating round tables on issues that transcend the city of Frankfurt and connect it with the surrounding, sub-urban or rural regions; establishing “Bike and Ride” places at public transport stations; starting

and running online bike route planners covering the entire federal state; and initiating the award winning platform citizens can use to report damage to bike infrastructure (Deutscher Fahrradpreis - Best for Bike, 2010; IVM GmbH, 2016).

Radfahrbüro (City of Frankfurt)

Radfahrbüro (City of Frankfurt) was founded to manage, oversee and maintain cycle paths. It furthermore provides information for citizens on e-mobility and local routes or help in cases of bike breakdowns. It is a central actor when it comes to the role of bike promotion in urban development. The Radfahrbüro is one of the main actors in Frankfurt when it comes to the development of new projects in sharing public spaces for bicycle use. Four of the interviewees highlighted the role of the institution in various ways (1, 3, 4 & 8), the most compelling is found in this quote:

“The Radfahrbüro plays an extremely important role for us, not for me personally, but for the citizens of Frankfurt” (Fra. Interviewee 4).

TraffiQ (City of Frankfurt)

TraffiQ (City of Frankfurt) was founded to connect different strands of public transport and thereby substantially increase its use overall. It constantly revises public transportation schedules, permanently referring to people's needs. TraffiQ is also a lead partner of the city in EU projects that try to initiate exchange with other cities in Europe with the aim of increasing public transport and changing commuting behaviour and general transportation preferences of citizens in order to support sustainable means of transportation (traffiQ Lokale Nahverkehrsgesellschaft Frankfurt am Main mbH, 2016).

Other relevant state actors:

Unit of Mobility and Traffic planning (City of Frankfurt) is developing a mobility strategy and is inviting stakeholders to mobility fora to discuss issues and generate courses of action (Stadt Frankfurt am Main Referat Mobilitäts- und Verkehrsplanung, 2016a, 2016b).

The award winning platform Meldeplattform Radverkehr is a forum, where cyclists can participate in developing new bicycle routes or make suggestions where maintenance is needed. This platform is now managed by the IVM, a regional authority who is in charge of running the platform and of organising bike mobility in the area surrounding Frankfurt (IVM GmbH, 2010, 2016). It takes a particular role in promoting projects that others in the actor landscape lack the capacity to promote:

“I am glad that IVM exists. [...] We have the competencies, but not the capacity [speaking about the own organisation]. [...] We couldn't have built and maintained the reporting system” (Fra. Interviewee 2).

Market sector

Nextbike is a provider of a bike renting system, which has been more recently established in Frankfurt (nextbike GmbH, 2016).

Deutsche Bahn as German wide public transport provider is offering bicycles for rent under the brand “Call a Bike”. In addition to that they are providing “bike&ride” places (Rhein-Main-

Verkehrsverbund, 2016a). It also allows taking bikes on regional and sometimes long distance trains with a bicycle card.

Both private providers that play a role within the SI stream at all, have mainly added to expanding an already functional and well developed system of promoting bike use:

“[I]’d reckon that in a city such as Frankfurt the share of bike users, who use their own bikes, is already so high that bike sharing offers won’t produce another major increase—I don’t think that’s the case” (Fra. Interviewee 5).

The interviewee puts forth that the main motivation for these actors lies in ceasing the opportunity to make profits rather than in driving the SI stream:

“[F]rom an economic perspective I’d say: They [bike sharing providers] recognise that there is a trend and then they come and hope to make money out of it. I’m really not sure whether they’d be central in promoting such a development, or whether they’d rather mainly focus on their own profit” (Fra. Interviewee 5).

Bike rent services don’t seem to have been pivotal or triggering any change and could rather be regarded as followers of the steps previously performed predominantly by state, but also by civil society actors. One interviewee stresses the importance of a good bike infrastructure over having a bike renting system:

“[T]his renting system is nice to have. It is good that such a thing exists. [...] But the standard in Germany is that people have their own bikes, which they use and want to park. And the focus should be on that. [...] If I had to decide for one or the other, then I’d choose an appropriate infrastructure over a bike renting system” (Fra. Interviewee 3).

Civil Society

ADFC

ADFC (Allgemeiner Deutscher Fahrrad Club) is the only main actor from the third sector, which has been significantly involved in the promotion of the SI stream in Frankfurt. It is an organisation that operates across the country and deals with all aspects of bicycling (ADFC Frankfurt, 2016; ADFC Hessen, 2016b). It is both a service provider and an advocate within the subject area. ADFC provides services like bike coding against theft or cycling courses for adults, organizes round tables, tests and reviews e-bikes and pendelects and checks cities for their bike friendliness (ADFC Hessen, 2014). The organisation has local branches all over the country. It is represented both at the federal state level and at the level of the municipality. Representatives of ADFC at both levels have been involved in the SI stream. ADFC has recently started promising projects in Frankfurt such as “bed+bike” (ADFC Bett+Bike Service GmbH, 2016), a programme promoting bike use by tourists, or been responsible for initiating “bike+business” back in 2002, an effort that has only recently been replicated in other major German cities. The city of Frankfurt and ADFC have a good relationship with each other. ADFC is even partly financially supported by the municipality as described by one interviewee:

“ADFC receives money from the city to employ a spokesperson on transport policy” (Fra. Interviewee 9).

This means that the support given by the city serves to increase the resource equipment of the only significant third sector organisation on Frankfurt’s actor landscape.

Citizens (non-organised)

An interesting point is the influence of citizen communities, which are informally organised and thus missed by an organisational level analysis. The interviewee claims that (groups) of individuals that act as thought leaders have significantly promoted bike use politically, but more importantly provided a breeding ground for it to flourish within society:

“In Frankfurt we have certain clienteles [...]. This is where strong impulses come from. Partly these people are real thought leaders, political thought leaders. Many members of the Green Party have come from this environment. And bike use is strongly promoted by these clienteles” (Fra. Interviewee 8).

This is supported by another organisational representative who points at the self-initiation of certain developments:

“[...] even without our own contribution [referring to organisations] a lot is happening that tends into the right direction” (Fra. Interviewee 9).

In addition to ADFC's engagement, these are other hints at the importance of civil society actions in driving the SI stream in Frankfurt.

4.2.3. Dynamism in the field

The number of people that use bikes has significantly increased within the last 20 years: Starting at 6% of the whole traffic in Frankfurt in 1998, the bike use increased to about 11-13% of the total traffic in Frankfurt in 2013 (Fra. Interviewee 2). The ambition is to further increase this share (Fra. Interviewee 1, 2, 9). However, the numbers are currently stagnating and another interview partner didn't see much further room for significantly increasing bike use in relation to other forms of traffic (Fra. Interviewee 5), which does not mean that the quality of using bikes in Frankfurt cannot be increased.

What makes people bike?

Part of the increase in user numbers in the past has been promoted actively, but another part depended on general trends and happened without anyone's particular doings as explained by one interviewee:

“Since about the millennium we have had a steady increase. Partly because we wanted it to happen and have supported it, and partly this has just happened” (Fra. Interviewee 9).

More specifically, the increasing user numbers in Frankfurt have been affected mainly by two different factors, as described by one interviewee:

“[...] I think two waves have coincided in Frankfurt. One thing is that there is a positive attitude towards bike use and that is I think a general trend in Germany. And then there is the Green Party leading the city parliament [...]” (Fra. Interviewee 1).

Thus first, bike use is on the rise and has been so for the past years across the country. The positive attitude mentioned above is complemented by political priority that is increasingly ascribed to the issue in another interview:

“[I]t is recognizable for us that the promotion of bike traffic has become more important politically” (Fra. Interviewee 5).

This has driven the issue of using bikes in the city as well as the infrastructure as well as softer promotional factors that are needed to foster it. The positive attitude towards biking thus has an influence on the political and infrastructural aspects of sharing space for bicycles and promotion of bicycle culture.

Disruptive changes

A very big influence came from the election of a city parliament, which is led by the Green Party since 2011. This has produced a major leap in the priority that has been given to the SI stream in Frankfurt. It has for instance manifested in the creation of the Radfahrbüro in 2009, which has since become a new central player if not the central player in Frankfurt's actor landscape. It is not only important in terms of its coordinative function between actors but also and in particular as a link between these actors and cyclists:

"The Radfahrbüro has a central function not only with regard to coordinating processes within the public administration, but also since it provides a link to cyclists, into the community" (Fra. Interviewee 9).

The will of political decision makers is in fact central to the current state of the SI stream in Frankfurt. Not only do they theoretically have the strongest lever in creating public spaces for bicycle use, they have in fact chosen to do so. In comparison to other cities for example, Frankfurt is investing a lot of money in infrastructure and mobility management according to one of our interviewees (Fra. Interviewee 1).

Except for the creation of dedicated agencies in recent years, the constellation of actors involved in and driving the SI stream hasn't changed much during the last years. In the contrary, the main actors within the field have been operating for a long time and become stable components of a fairly collaborative system. In general, all identified actors have a great interest in promoting bicycle use in Frankfurt. The responsible actors mostly seek cooperation pro-actively. One interviewee points to the importance of knowing each other:

"[E]verything fits together, and it is a small family, and all of them know each other" (Fra. Interviewee 1).

In relation to this, another one explicitly highlights the network aspect and a 'give and take' between the organisations which is necessary for working together in an effectively:

"There is a network of people, who know each other well and who, and this is the prerequisite for this to work, to each give and take, people who can work pragmatically and who try to build a good working atmosphere" (Fra. Interviewee 4).

For example, ADFC and the City of Frankfurt are working in a cooperative way and not against each other. This is what might differentiate Frankfurt from other cities even within the same federal state and at close proximity. Wiesbaden for instance, appears not to be marked by the same collaborative spirit and "fit between the different elements" (Fra. Interviewee 1) as Frankfurt.

Counter-trends

There are, however also some counter-trends to the above that are worth mentioning. On the national level, the so called "Sinus Study" commissioned by the Ministry of Transport in 2015 has shown deficiencies in relation to the aims in the "national bicycle traffic plan" issued a year

before by the same Ministry (Bundesministerium für Verkehr und digitale Infrastruktur, 2014; Sinus Markt- und Sozialforschung GmbH, 2015). In the latter report it was formulated that the share of bike travel should be increased further from the level of 10%. The Sinus Study in contrast points out that the popularity of bike travel has decreased in the population as compared to previous years. It is not entirely clear how this relates to Frankfurt. In 2013 "Stiftung Warentest" and "German Automobile Club" have issued bad test results for a number of e-bikes and pedelecs for safety reasons (ADAC, 2013; Focus Online, 2013). A study in 2014 has shown that the concept of e-mobility, mainly concerning cars but also bikes, is less accepted in Germany as compared to other European states, for example the Netherlands or Norway (Breitinger, 2014).

On the municipal level, Frankfurt, despite the efforts referred to before, had to diagnose in 2014 that bike routes need further improvement and expansion (Stadt Frankfurt am Main, 2016). It has also been reported in the media that bike parking facilities at Frankfurt main station were few and not well organised. Better examples at close proximity could be found in Bad Homburg or Darmstadt (Rippegather, 2014). As regards the issue of bike sharing or renting, it is currently dominated by big companies like Deutsche Bahn or Next Bike and there is no established private bike sharing culture in Frankfurt.

4.2.4. Stratification and (de-)commodification in the field

Since the use of bikes is essentially not a pay for service system and in principle the cheapest form of transport available, de-commodification in the field is very high. This might have changed slightly and continue to do so by the initiation of bike renting systems, which however come at fairly low costs, or the increase of e-mobility, which makes bikes significantly more expensive. For the time being though and with regard to past developments, we can certainly assume high to very high de-commodification.

Similar factors, but also demographic characteristics may have an influence on the stratification of the field across society. In the context of Frankfurt, but also across Germany, it has been reported by an interviewee that using bikes is currently considered trendy, mainly by urban young people, so that the share of such people using bikes is currently over-proportionately high (Fra. Interviewee 5). The fact that e-bikes are currently still expensive makes them more attractive to wealthier target groups than to others. And there is a tendency among some migrant groups to use bikes somewhat less than those without a migration background (Fra. Interviewee 1 & 3). Yet, according to interviewee 3 their share is on the rise, partly because public transport is comparatively expensive. Altogether, biking doesn't have a special target group and as one interviewee puts it, if anything, the heterogeneity of bicycle users has steadily increased as compared to previous years:

"It is becoming more diverse. Significant shares of bike users are to be found in all groups of society"
(Fra. Interviewee 9).

Cycling spans all types of people and all ages and in principle it is available to everybody, so that stratification in the field is very low.

4.3. Czech Republic/ Brno

4.3.1. Specific focal points and milestones of the SI

Socio-cultural development (practices, discourses)

There is a demand for bike sharing from the part of cyclists, cyclist movements and students who are looking for alternatives (Brn. Interviewee 1). The first successful (if not completely of bike sharing nature) project of bike sharing was Mezikavárenská půjčovna kol (Inter-cafeteria bike rental). Bikesharing in Brno would develop also without civil society but it would take longer and it would focus more on profit than on cycling (Brn. Interviewee 3). The rise of interest in bike transportation was caused by the promotion through various contests and campaigns organized by civic associations, change in the attitude of employers and new healthier lifestyle associated also with hipster subculture (Brn. Interviewee 2). The topic can be unpopular within a particular group of people, who are not welcoming changes and represent convinced adversaries of the cyclo transport. As one organization reflects:

“The association looks at the same time at a wide range of the citizens that are considered [by the association] as transport promiscuous [changing means of transport].”

One of the potential pitfalls of the bike transportation development in the city is the philosophy of transportation and its perception by the citizens who usually consider cycling more a leisure activity than a way of transportation and are therefore not very willing to accept the transformation of the infrastructure and reduction of car transportation (Brn. Interviewee 1). Bike transportation development is hindered by the anti-cyclists (especially group of car drivers which is called Brno Autem - Brno drives a car – as opposite to Brno na kole – Brno rides a bike) who objects the development of bike transportation (Brn. Interviewee 4). Cycling still needs to be accepted by the public as an alternative way of transportation, not only leisure activity (Brn. Interviewee 3). Another factor is the effort and enthusiasm of organizers of bike sharing because it cultivates cycling environment and motivates people to use bikes as alternative to usual means of transport (Brn. Interviewee 2)

Political logic development (prioritization, political leadership)

New wave of interest was launched by Municipal Authority. Key ways the seminar on bike sharing in 2014, since then the bike sharing started to be treated seriously (Brn. Interviewee 2). At the same time, the idea of bike sharing is at the moment supported also by the municipality which enabled launching the bike sharing project within the existing scope. Important factor that lead to the change of attitude to the development of bike transportation was civic association Brno na kole which also contributed to several minor changes in the system of city transportation. But the changes would not pass without the continuous support of municipal authority which favours bike transportation (Brn. Interviewee 1). The main actors in bike transportation development are Municipal Authority of Brno and Brno Communication Services (company own by the city). The selection of particular realizations of bike transportation was always joined by the representatives of the civil society. Nonprofit sector is important not only for development of bike transportation but also of bike sharing (Brn. Interviewee 5). Also Municipal Authority of Brno (both politicians and civil servants) important role as it supports the project of bike sharing and develops the infrastructure for cycling (Brn. Interviewee 3)

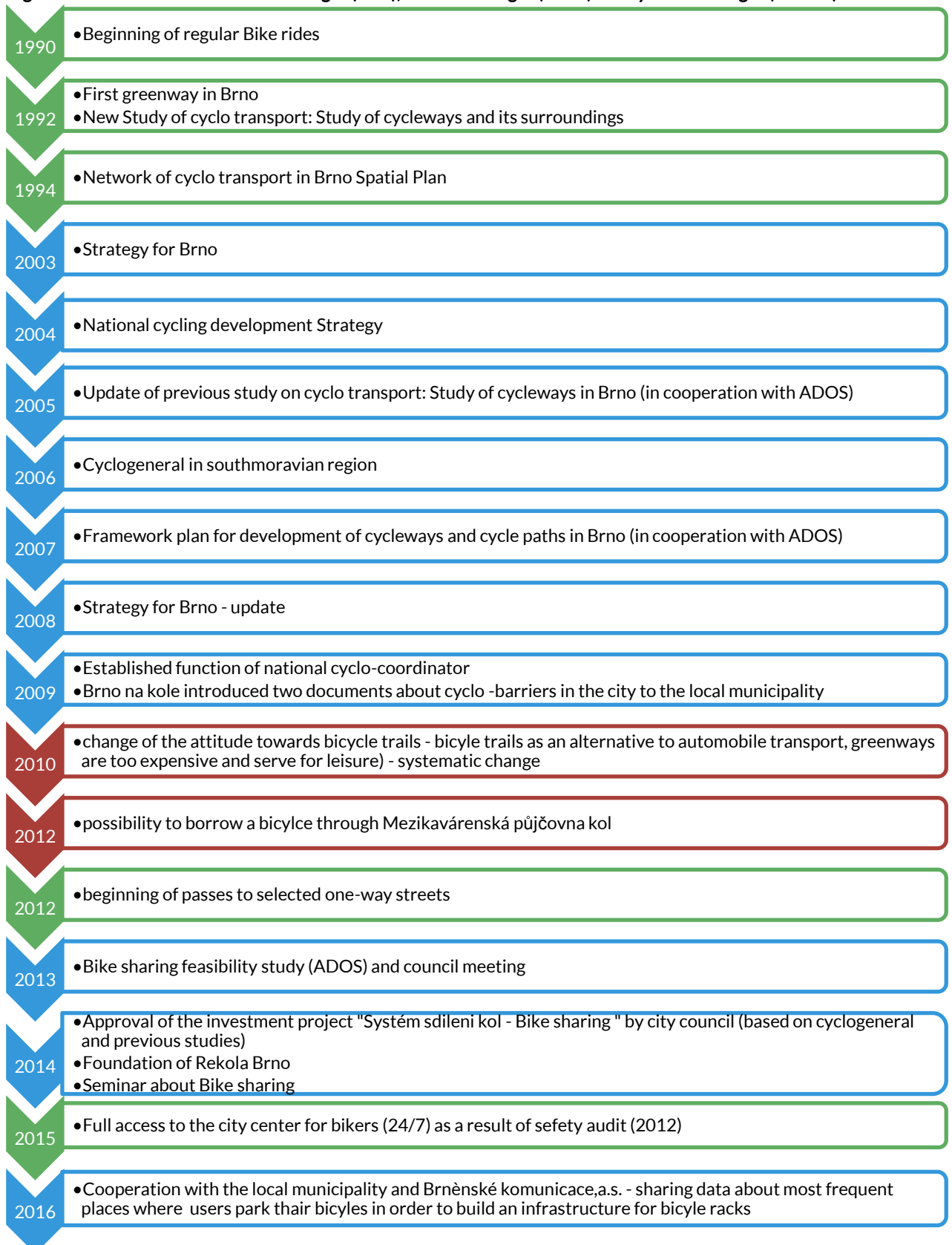
Important factor of bike sharing is a support for infrastructure building from the part of the city and the will of politicians to “educate the citizens”. Also civil society is a key factor; it serves as an advocacy and education tool and articulates the demands of the public, but also mirrors the evaluation of realized solutions in the field (Brn.Interviewee 4). A huge disadvantage of development of cycling in Brno is the missing position of cyclo-coordinator at the Municipal Authority which would pursue the interests of cyclists (Brn.Interviewee 2)

Systemic/legislative changes (materiality, design and infrastructure)

1992 is very important for bike transportation because preparation of the first “revolutionary” general plan of bike transportation in Brno. This was replaced in 2010 by a new one, which emphasized the possibilities of bike sharing in Brno and was designed also by the foreign experts. Bike sharing is an extension of cycling culture and may lead to improvement of cycling infrastructure – but at the same time, it is not possible without extensive and safe infrastructure. Also, it is necessary to interconnect bike sharing systems with public transportation systems (Brn.Interviewee 4). Limited number of cycling paths built until 2010 in the city was hampered by the problem of buying-out proprietary land.

Project preparations are also demanding in terms of administration and legislation, the success of bike sharing is doubted because of expected bike and equipment stealing. (Brn.Interviewee 1). An unfavourable geography of the city prevents cycling and bike sharing or rather makes it harder – lot of hills and also citizens are not interested in this alternative means of transportation (working places are by default not equipped with showers etc.) (Brn.Interviewee 5). The infrastructure therefore in Brno is currently not developed enough for extensive bike sharing projects, it is necessary that this first be done in order to keep cycling safe.sportation. Now it is not ready for extensive bike sharing project (Brn.Interviewee 2)

Figure 5: Brno Milestones: Cultural changes (RED), Political changes (BLUE) and Systemic changes (GREEN)



4.3.2. Central actors and their primary roles in advancing the SI stream

State sector

Brno City Municipality, Department of Transportation

The activities of the Department of Transportation of Brno City Municipality are based on legislation and instructions of political representation. Most of activities of the Department have a character of government administrative activities:

“Approximately 75% of activities of the Department have character of government administrative activities and only one fourth is represented by the self-governing activities. The fundamental decisions related to self-government are, however, made by the political representation. (Interviewee 1.

Only a small proportion is represented by the self-governing activities i.e the creation of a suitable environment for cyclo transport and creation of a system of bikesharing, cooperation on cycling paths and bike trails plans, proposals to political representatives and realization of political decisions linked to pass of one-way streets or creation of plan for bikesharing also correspond to these activities . The Department is attempting to share experiences with other sister cities within the frame of the CIVITAS group or the Association of Cities for Bikers. The membership of Brno within the bike-road Brno-Vienna is also important for the Department, especially because of the exchange of experiences of member municipalities and cities.

Market Sector

Alternativní dopravní studio (ADOS)

The director of this organisation is self-employed and has just four employees, with whom he consults major decisions. The director and on other employees are primarily project architects, their interest is to offer professional results based on their own expertise and experience from previous projects. Within their activities they focus neither on vulnerable people nor engage into politics.

In case of Brno, between 2010 and 2012, the organization organization was mainly involved in the creation of cyclogenerel and other strategic documents and played a an additional role of cyclo-coordinator, who discussed individual solutions of “cyclogenerel” with the public. The organization strived for factual and expert argumentation.

In the period from 2010 (until 2012), the representative of the organization held the post of cyclo-coordinator of Brno and also was a member of the Committee for Bicycle Transport of the Ministry of Transport. Brněnský cyklo-koordinátor (2010).

Third sector

Brno na kole

The organization strives for cultivation of the environment so it meets needs of cyclo transport; comments on key documents, which are related to the field, organizes events to support the cyclo transport and tries to enthuse the public into this mean of transport.

The organization does not have paid employees, it is run only by volunteers. It tries to harmonize its steps with cooperating organizations, in relation to respective task or project (Nadace Partnerství; Dejchej Brno). Some alliances are of long-term nature. The organization is

also a member of association Czech cycle-federation. The city centre in Brno used to be closed for cyclists, however, the centre has been accessible in recent years since 2015, partly due to a change in political representation of Brno and partly thanks to long term the efforts of Brno na kole. The organization has also detractors:

“... for sure there are people, who hate the organization and accuse it of lies, they describe it as an alliance of cyclo-terrorists and cyclo-fascist. It is, however, a small group of people in Brno. I rather feel ordinary trustworthiness, which is based on nonexistence of “scrapes””. (Interviewee 2)

The organization is directly involved into political debate on various levels. It attempts to meet deputies for transportation at least twice within their election period. In relation to pre-election meetings the organization strives for confrontation with candidates, in relation to cyclo transport topic. It also tries to positively influence planning of public space. (Interviewee 2)

Rekola

Rekola organization currently functions as a nonprofit association, it is mainly focused on support of bikesharing, development of cyclo infrastructure in cooperation with Brno, promotion of cycling and healthy lifestyle and creation of a relation with the public space. The local branch of Rekola [in Brno] is thinking about other activities, which would have an impact on the public space in Brno.

“[Rekola organization is based on] wide spectre of values: equal and active approach, recycling, positive attitude towards life, towards the city itself, aid to the weaker.” (Interviewee 3)

“Rekola is mainly focused on support of bikesharing, development of cyclo infrastructure in cooperation with the City, promotion of cycling and healthy lifestyle and creation of relation with the public space. The organization attempts to fulfil the HateFree idea. It does not cooperate with any vulnerable group of citizens. They consider their activities as politically sensitive, unpopular, maybe on the edge of activism.” (Interviewee 3)

4.3.3. Dynamism in the field

What makes people bike?

There are about three major factors which support the development of cycling and bring new people in the field. The first one is simply the tradition: Brno is a very „local“ city in a sense that many of its inhabitant come from neighboring towns and villages of South Moravia which is geographically very flat region. Biking culture has always been part of it and therefore is part of the mainstream way of living. Second factor is a more recent, and it is a health and fitness reason. Contemporary Czech citizens have been constantly raising awareness related to the healthy way of life, sport activities and active lifestyle. Cycling – together with jogging – has become a common and easily accessible mean how to stay physically active in the city. Finally, biking in the city has become a part of youth subcultures in the city, related especially to hipster one. This together with the fact that several universities are located in Brno and thousands of young people live and study in the city, biking is preferred lifestyle of youngsters here.

Where does the inspiration for changes come from?

As mentioned before, one of the cultural sources of cycling in Brno is simply the tradition of neighbouring localities. At the same time, these and other cultural sources needed to be made

attractive and socially available for the citizens of Brno, which was the role of local civil society organizations and associations which aim at popularization of biking and advocacy the development of particular infrastructure for biking. Another source of inspiration comes both from Prague (some of the NGOs working in the field in Brno are local branches of Prague NGOs) and from other countries – most notably Austria and Sweden (at least in the field of bikesharing).

Disruptive changes

Bikesharing may partially be seen as a disruptive innovation in Brno. The most important reason for that is the change of the perception of a public space. At the same time, this change is to some extent being driven by commercial – private – reasons. More specifically, it is quite unusual to share some means of transportation or other things in the Czech culture. Generally, there were dramatic social, political and economic shifts towards the privatization and commercialization after 1989, so that common goods, joint properties of socialized activities are generally seen as suspicious, unusual and even irrational. The idea of bikesharing disrupts this cultural patterns and aims at public sharing of things that are not owned privately. This is something that is anew. At the same time, bike sharing initiatives are to some extent driven by commercial interests (some of them are prepared to become fully commercial once they have enough “customers”). So there is a certain level of disruptiveness towards the privatized civic culture but driven partially by the private interests.

Counter-trends

There are three major countertrends to bikesharing in Brno. One of them is the perception of biking as a personal lifestyle (as mentioned above) which makes the bicycle a symbol of a social status of its owner. This combined with a civic privatism and social competition lead to the development of biking subcultures but not to bikesharing – each person needs to have his or her own “super-bike” which reflects his or her lifestyle, status and character. Second, there are initiatives driven partially by the right-wing parties and supported especially by the elderly citizens who disagree with the creation space for biking at the expense of individual car transportation (e.g. during the reconstruction of the streets and squares). This represents the continuing trend of perceiving a comfortable individual transportation by private cars anywhere in the country as a sort of “citizens’ right” for which they “pay their taxes”. Third, and quite paradoxically, it is the very dense and well-operated network of public transportation which fully supplements the individual car transportation but may also discourage citizens from using bike. Furthermore, the public transportation (trams, buses) is still not entirely ready for being combined with biking (e.g. not enough space for bike transportation in tram across the city, low number of bike buses etc.).

4.3.4. Stratification and (de-)commodification in the field

In a sense, bikesharing itself is rather available for various socio-economic groups: it provides a service for a rather small amount of money (as it also aims at students), so its effects rather weaken the stratification in the field. On the other hand, existing stratification is a medium one. On the one hand, the cycling is available for most of the citizens, the bikes are affordable and the stigmatization of the users of the old or cheap bikes seems to be fairly low – on the contrary, the weariness of the bikes, DIY biking culture and certain level of amateurism in bike maintenance has become a positively evaluated trend. At the same time, biking is also seen as an attribute of certain type of leisure activities, related to fitness and healthy lifestyle which are

part of the habitus of educated middle class. In this sense, the field is stratified and excludes certain social groups.

The de-commodification of the field may be ranked as medium, too (with inclination to low). This is due to the fact that there is a mix of motives and reasons of actors active in the field. On the one hand, most of the activities which aim at the support of cycling are driven by the civil society organizations. These are usually oriented at environmental and cultural values – they aim at dealing with environmental pollution, gentrification of some part of the city, transportation problems etc. At the same time, the very bikesharing is promoted by organizations that are situated at the border between the profit and non-profit motives and aim at some form of ethical business rather than strictly non-profit activities. Many of these organizations consider themselves rather as “start-ups” than NGOs and have business ambitions for the future. At the same time and for reasons mentioned above, the cycling culture has become commercialized and many cycling events or projects are sponsored by the business which aims at targeting certain part of the population (sport equipment, alcohol, media etc.).

4.4. Milan

4.4.1. Specific focal points and milestones of the SI

Cultural processes (practices, discourses)

Social acceptance in Milan has been rapidly increasing and initiatives have been organized by the private sector and the urban community itself. This will be expounded upon in subsequent paragraphs with information obtained from interviewee's.

“Milan is the Italian city for Fashion and Style. Bicycles (the newest or the oldest ones) have moved into this new scenario” (Mil. Interviewee 5).

The Bicycle is becoming cool thanks to the fashion brands and advertising companies that recently launched the “Cycle trend”(emerging from the interviews with experts, the bicycles have become more a fashion accessory rather than a means of transport). The fixed-gear bicycles are more and more aesthetically appealing among young people, in particular, the use of the bicycle has followed the “hipster trend” that has spread around the city of Milan over the last years. This trend emerged on heels of the economic crisis:

“The economic crisis has certainly influenced the citizens’ behaviours: the bicycle is the cheapest means of transport and this can explain why lot of people started preferring it to other means” (Mil. Interviewee 1).

The businessman and elegant women ride the yellow bicycles of the bike sharing; the bicycles have become a fashion item, some of them are expensive because of the peculiar design or layout. Milan has also seen the birth of many bicycle mechanic workshops mostly founded by students or bike lovers in which they teach the public how to fix the bicycle themselves:

“Actually the current trend is to combine the bicycle with art, music, food, or cultural items in order to catch a larger portion of demand” (Mil. Interviewee 5).

That's the case of Upcycle, the first cycle bar of Milan (a place where the design is inspired by the bicycle and where themed events are organized in order to foster green awareness and share sustainable values) , or " Bicycle and Roots" (Bici e Radici) and many other business activities that are bicycle driven. The year 2010 also saw the first Milano Bike Polo team.

Advocacy has also played an important role in shaping the biking culture in Milan , according to interviewee 2, the FIAB campaigns, a few other big third sector associations and a lot of grassroots organization promote a social and cultural revolution. The most important third sector associations (e.g., Cyclobby – FIAB) cooperate with public and private actors such as Cariplo Foundation to develop educational projects aimed at encouraging both children and adults to use bicycles.

During the last two administrations - the local government administrations by Mayors, Pisapia and Moratti in particular, above all have accentuated the environmental sustainability problems. A strong attention has been settled toward children education in sustainability practices, a lot of school programs have been implemented:

"One of them is "Bicittadini" which is aimed at sensitising the children to the use of the bicycle as a sustainable vehicle for a better future" (Mil. Interviewee 3).

"The project encourages the everyday use of bicycles for children and it is supported at European and international levels as an incentive for building self-esteem and independence. It offers a remedy to sedentary lifestyle and a driving force behind physical and mental wellbeing" (Mil. Interviewee 4).

Massamarmocchi is an informal group of parents and volunteers that bring children to school by bicycles. It came from some parents' need for safety during the journey from home to school:

"at the beginning we were few but now every morning you can see us with our bicycles, music, colourful flags and helmets" (Mil. Interviewee 5).

Political logic development (prioritization, political leadership)

The political development of the process of sharing space for bicycles and promotion of bicycle culture has seen both processes of political awareness and processes of political strategy. Processes of awareness as well as strategy regarding sharing space for bicycle and promoting bicycle culture seem to be rooted in three different political logics for practice: promoting a livable city, reducing CO2 emissions, and improving health in order to increase effectivity.

The establishment of AMAT (local agency for mobility of the local municipality) in 2000 - which collects data and information on urban mobility and traffic mobility helped the municipality in the development of successful policies concerning urban mobility (Mil. Interviewee 6). Another relevant political developmental moment was the National Bicycle Conference conducted in Milan spearheaded by the Milan County in 2007 was an important relational moment in which different institutional levels communicated on the topic of bike sharing.

In 2011 there was an Administration replacement, a change in the local government coalition. Although from different political parties, both the coalitions that governed the city before and after 2011 were aligned to make Milan become a smart-green city.

Area C – a new tax cars have to pay in order to enter in the city center was introduced in 2012. Before the Area C, the ecopass pollution levy had been introduced, but in 2012 the municipality of Milan decided to apply a new congestion levy to reduce the traffic in the city centre. The Green referendum in 2011 conducted by the municipality asked the citizens five green questions to vote on in order to understand the widespread preferences on the sustainability topic (transport and mobility system, recollecting garbage system, electricity consuming).

“We are working alone, without any help and collaboration from the other institutional levels of the government. Concerning the Ministry, they didn’t update the current environment regulation and they cannot influence our policies in terms of procurement and monetary resources. Lombardy Region has been completely absent in that scenario” (Mil. Interviewee 1)

They are obstructing the efforts of the municipality of Milan by not providing any kind of financial support to facilitate the development of bicycles lanes, instead prioritizing the construction of highways

The mobility regulation- a plan for urban sustainable mobility introduced for the first time in 2009 as an urban mobility plan was transformed in 2013 into a PUMS reform. It hasn’t been approved yet but there are national tables discussing on it; the great results have been the identification of the bike accidents by the National Agency of Insurance of work-related injuries. Milan County (Provincia) was the reference system until the last reform; it was in charge for mobility and traffic regulation now all the competences are divided between Lombardy Region and Milan Municipality. Concerning the National level, Cyclobby-Fiab presented the traffic code reform including the building of street signage for bicycles that is currently missing. This issue is still being discussed in Parliament,

“we also have the entire support of Mr. Gandolfi, a honourable member of parliament who’s promoting the reform in the debate” (Mil. Interviewee 3).

In the Lombardy Region, some European funds through the Europe 2020 Strategy in particular focusing on incentives for low impacts mobility way, have assigned 20 millions for cycle mobility that which was distributed through a public call for tender, within Lombardy’s cities. The main objective is to coordinate in a synergic net all the different administrative levels (municipality and county) for planning, projecting and realizing the interventions (Mil. Interviewee 7).

Systemic/legislative changes (materiality, design and infrastructure)

There were some interventions during the first years of 1990 aiming to develop cycle paths in town. From 1995 to 2009 nothing was really done because there was not a strong support in enhancing the different mobility policies (Mil. Interviewee1). Letizia Moratti began to implement some interventions e.g. building new infrastructures and promoting cyclic events. Firstly she proposed the “Green Rays project” that defines and promotes a new slow mobility, as a new green initiative in Milan. Then, in 2008, the municipality of Milan launched the first phase of the BikeMi project (first urban bike sharing) which was partially financed through government funds (Ministry of Environment). ATM (a local transport agency) established a public procurement won by Clearchannel, who finance the maintenance of the whole service through advertisement. From 2009, under Mayor Moratti, Milan began to focus on sustainable mobility policies in order to improve cycle infrastructures: in 2011 there were 130 km of cycle lines, although the majority of them were disconnected or interrupted. The real problem being that Milan has 51 cars per 100 inhabitants, largely over the European average (36-25 cars per

100 inhabitants); the municipality has focused on decreasing the number of cars in the urban area: 550.000 is the total amount of cars registered in Milan, among them 270.000 are located in private parking lots; 220.000 are placed in legal parks on the street; 150.000 are located in illegal places all around the city. It is the car surplus the municipality wants to fight, because they irregularly occupy public space that could be shared with other mobility solutions, firstly bicycles.

“The introduction of the Bike sharing system became a substitute of the public transportation system and people started to ride these public bikes using the same paths covered by the underground or the buses. Nevertheless I think the bike sharing should substitute the private means of transport instead of the public one” (Mil. Interviewee 1).

The Municipality arranged a great collaboration with ATM (local transport agency) and from 2011 it was allowed to bring the bicycles on public transports for free. Moreover, the introduction of the 30 zones has been the first step toward a better share of urban space among different kind of vehicles. 30 zones are areas of the city where the overall speed of private and public means of transports cannot exceed 30 Km per hour.

“The metropolitan area of Milan was well managed by the Milan County (provincia) who developed infrastructures and cycle paths. They mostly focused on the interconnection between the city centre and the periphery encouraging the use of the bicycle” (Mil. Interviewee 5)

In the Lombardy region, from 2010 they started implementing the plan of ‘Bike Mobility’ (finally approved in 2014- following the guidelines of the Law 7/2009). For example the Italian Parliament is working on a reform relating to the traffic code and the role of bicycle ,if that reform will be approved, the Ministry of Infrastructure will introduce in the current regulation other two plans: Eurovelo and Bicitalia, the first is a plan defined by the Europe, the second defined by FIAB Italia. Both Eurovelo and Bicitalia have the objective of promoting the use of bicycle and protecting bicycle users.

Figure 6: Milan Milestones: Cultural changes (RED), Political changes (BLUE) and Systemic changes (GREEN)



4.4.2. Central actors and their primary roles in advancing the SI stream

State sector

Milan municipality

One of the first significant milestone that advanced the SI stream was the National Bicycle Conference held in Milan and incentivised by the Milan County in 2007. This was an important relational moment in which different institutional levels communicated on the topic of bike sharing. According to Antonio Bisignano, an employee from the Municipality, after a change of administration in the year 2009, the newly elected mayor for Milan began to focus on sustainable mobility policies in order to improve cycle infrastructures and as of 2011 there were 130 kilometers of cycle lines, however the majority of them were disconnected or interrupted.

In 2008, the municipality of Milan launched the first phase of the BikeMi project (first urban bike sharing), before that the municipality had done some feasibility studies and named ATM(local transport agency) for the whole management of the bike sharing service. ATM established a public procurement won by Clearchannel, who finance the maintenance of the whole service through advertisement. The bike sharing system was partially financed through government funds via the Ministry of Environment. From 2011 the municipality took the decision that allowed cyclists to bring their bicycles on public transports for free. That has been a great facility! There is however, an evident gap between what the political actors stated and what it's truly done: the municipality can allow citizens to bring the bicycle on the subway, but there aren't some facility to do it, like specific slide along the entrance stairs.

Lombardy region

The director of Roads Infrastructure and Cycle Net, Erminia Falcomatà notes that there were three specific areas of focus in Lombardy, namely: Cycling Mobility Plan, Infrastructures Monitoring and Cyclist census. Lombardy Region, which has recently published a tender for projects related to cycle paths and interventions on bikes' (thanks to European funds –POR, FESR) hopes to improve the biking infrastructure thus encouraging more people to use bicycles.

Market Sector

In the market sector, the sustainable mobility and the promotion of the bicycles in the urban areas has been mainly through advocacy campaigns for the traffic code reform and the recognition of accidents happening during the journey to and from work while riding bicycles, this was primarily promoted by Cyclobby-Fiab. Other organisations within the market sector like Fondazione Cariplo have developed projects that are strongly related with the development of mobility policies implemented by the Municipality of Milan. Urban Bike Messengers and Upcycle are other private organisations that partner with with the third sector to promote various biking events within the city of Milan.

Third sector

In Milan, the third sector consists primarily of volunteers and critical mass activists. One organisation MassaMarmocchi is mainly made up of a group of parents and volunteers who bring children to school by bicycles. This project aims to educate children to be responsible for the environment they live in, and to get them used to riding a bicycle rather than a polluting car.

4.4.3. Dynamism in the field

What makes people bike?

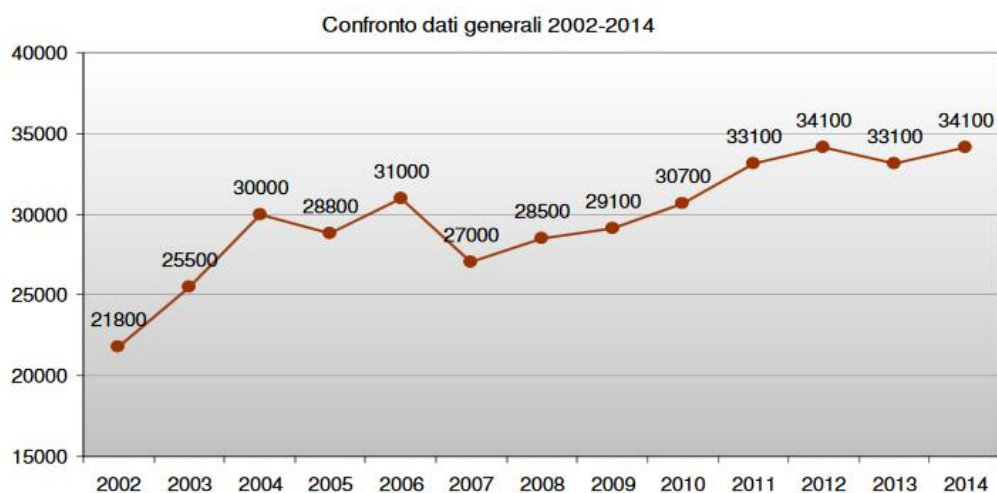
In recent years more bike paths have been built in the city of Milan and by 2011 there was 130 kilometres of cycle paths. Also the restriction of cars into the city centre has encouraged the citizens to bike more. An important factor according to one of the interviewees had also been the economic crisis,

“people can’t afford anymore all the expenses related to car maintenance namely: insurance, taxes, oil, etc. they are therefore opting for the cheaper alternative- the bicycle.”

The cyclist image has also deeply changed, businessmen and elegant women ride the yellow bicycles as part of the bike sharing initiative; the bicycles are a fashion item, some of them are even expensive because of the peculiar design or layout.

In Milan, recent data highlight an increasing number of car bike sharing users. This number has increased by 26% over the last 8 years and by 56% compared with 2003. The highest number of passengers use the bike sharing service to move from home to work. After a slight reduction in 2013, the data has raised again and it is now close to its value in 2012, with a total number of passengers of 34,100. (source: Censimento Ciclisti 2013 – Ciclobby)

Figure 8: Total number of passengers (bike sharing users) city of Milan



Whom does the inspiration for changes come from?

The inspiration for change comes from the programs run by the municipality in partnership with the private sector who offer financial support with projects such as #Bicittadini. Another factor driving the inspiration is grassroots organisation e.g. “Massamarmocchi consisting of parents who are educating their kids to be responsible for the environment by picking a less polluting means of transport. The Bike Sharing service is more and more successful as

evidenced by more than 13 % of the bicycles detected in the town center belong to the public bike sharing service with a peak in the Augusto local district.

Disruptive changes

Sustainable mobility and the promotion of the bicycles in Milan has not greatly disrupted the current transport system in Milan and Lombardy. This is because it has mainly been a partnership between the private sectors- through activism and lobbying for better policies and safer biking lanes, funding and the Municipality which from 2007 has made a greater effort in promoting a biking culture in Milan. There are more people using bicycles because of improved infrastructure, but according to one interviewee

“Milan’s main problems are cars that occupy public spaces impeding the development of alternative mobility ways.”.

On the other hand because of inadequate infrastructure bicycles have to ride the same lane as cars with a high level of dangers for the riders themselves.

Counter-trends

There has been an emerging counter trends in bike sharing in Milan, one of the more prominent ones is the fashion statement that bike sharing has created. The more expensive and uniquely designed the bike is the more status it gives to the cyclist.

4.4.4. Stratification and (de-)commodification in the field

The de-commodification in the field may be ranked as medium. This is because most of the bike sharing activities, campaigns are done in collaboration with the Municipality and mainly the private sector. It is the private sector players that acts as lobbyists and often partial financiers to Municipality run projects e.g #Bicittadini. The third sector in the form of self organized parents plays also an important in trying to create awareness in schools and to the general population on the environmental benefits of biking. There has however been instances where the city of Milan has not worked in partnership with the third sector organisations specifically Cyclobby-Fiab and the result has led to undesirable outcomes according to one interviewee

“In Milan it’s always been preferred to build expensive and, sometime, useless infrastructure rather than listening to the cyclists’ voice and save money!”

4.5. Country comparison and synthesis

The SI stream has developed differently across the four cities. We can point to both similarities and differences in the development of sharing space for bicycles and promotion of bicycle culture.

Developments in socio-cultural, political and systemic areas

In Frankfurt and Copenhagen the socio-cultural processes seem very important, because it is, in Frankfurt, the positive attitude towards biking and, in Copenhagen, the new lifestyle trends that can be said to promote people’s interest in biking and the will to share space for bicycles. At the same time the changes that has been brought about regarding political logic and infrastructure are very important in the field because this can lift up and promote further the social and cultural tendencies to share space for bicycles and bicycle culture.

Brno and Milan present slightly differing aspect on the socio-cultural processes that affect the bike sharing culture. In Brno, the bike is still considered largely as a tool for leisure activities and has viewed seriously as an alternative means of transportation, a situation that is not improved by opposition from a group of car owners. Milan on the other hand being a city noted for it's fashion and style has been able to transform at a faster rate the way people think about bicycling into something hip and cool. In terms of political and systemic/ legislative changes one can see that there is political will in both cities but especially in Milan this was evident much earlier from around 2008, while in Brno there was a renewed interest on bike sharing by the municipality in 2014.

Driving forces in the three sectors

In Copenhagen as well as in Frankfurt the political scene has been an important venue for understanding the process of the SI stream. In Frankfurt the Green Party was elected in large numbers to the City Parliament and in Copenhagen

The political awareness of environment and sustainability in the city Parliaments resulted in a leap forward for the SI stream an both Frankfurt and Copenhagen in terms of built infrastructure and prioritization of money to the cycle agenda. Apart from the public sector, the third sector has also presented driving force in Frankfurt and Copenhagen. The third sector seems to play a bigger role for advancing the SI stream in Copenhagen, than the case for Frankfurt. This is because the public sector in Frankfurt is very strong, which makes the third sector play a smaller part.

In Frankfurt and Copenhagen actors from the market sector do not seem to be key actors in pushing the stream of innovation, and this is because the public sector and the third sector are the primary forces in driving the SI stream on all the parameters of socio-cultural, political and systemic changes. Rather, market actors use the cultural, political and systemic changes for developing new services and products that can enhance profits.

The Municipality of Milan after the economic crisis coupled by a strong mandate from the then elected mayor are all political aspects that have been the driving forces towards advancing the SI stream. The state sector in cooperation with the municipality has been able to pass more concrete policies namely Area C tax and conduct successful campaigns i.e BikeMi among others. There is also a partnership with the ministry of Environment which has financed some of their past campaigns. The city council in Brno has acted in somewhat of a slow and cautious manner and as such it first approved investments in Bike sharing in 2014 based on previous studies that had been conducted between the years 1992- 2013.

The role of the civil societies in both cities has been very similar in that they both aim at popularizing bike sharing, and promoting cycling as a healthy lifestyle. The third sector is markedly more active in Brno than in Milan and has the extra role of participating in advocacy campaigns.

There is a noticeable dissimilarity between the market sector in Brno and Milan. In Milan the market sector is heavily involved in the promotion of bicycles in the urban areas mainly through advocacy campaigns, development of mobility policies, and often partner with the third sector to promote various biking events. In Brno, where there are few market sector players, one of whom was interviewed in this study, had been a member of the Committee for

Bicycle Transport of the Ministry of Transport in 2010. The market sector therefore in Milan when compared to Brno has played a greater role towards driving the SI stream forward.

Disruptiveness of the SI stream

As for disruptiveness of the SI stream across countries, in the case of Copenhagen we found that disruptive changes came about from civil society. Disruptive innovativeness is seen in the fact that biking is comprehended as a social thing rather than a means of transportation, and it is also innovative that biking can be promoted in the realm of business and hence opening up a new field of bikers. This disruptiveness of the SI stream that can be located in the realm of the civil society can be explained by the experimentation and openness that is found on the level of the third sector in Denmark. In comparison, the public sector has been working with the biking agenda for many years, and this work focuses on infrastructure, which is not presenting us with disruptive changes, but rather a more gradual development.

In Frankfurt there does not seem to have occurred any disruptiveness in the SI stream. In Frankfurt there is rather a steadiness in the process towards more space sharing and promotion of bicycle culture. The reason for this can be that there is a strong cooperation between the public sector and the third sector and that the sector players have a similar agenda and a similar idea of bicycling.

Bikesharing may partially be seen as a disruptive innovation in Brno because the idea of bikesharing disrupts the cultural patterns which makes it quite unusual to share a means of transportation. Because of the social, political and economic shifts towards privatization and commercialization after 1989, joint properties of socialized activities are generally seen as suspicious, unusual and even irrational thus posing a major hurdle that has to be overcome before the perceptions of the people can be more favourable towards bikesharing not only as an instrument for a healthy lifestyle but also as a valid alternative means of transportation. In Milan there seems to be a rather limited disruptiveness in the SI stream this is due to the fact that there has been a partnership between the private sectors and the Municipality, more importantly bike sharing is not viewed with the same suspicion as in Brno.

Counter trends

In Brno there are pockets of resistance to making it a bicycle friendly city albeit a small group who oppose the plan to make it a biking city.

“... for sure there are people, who hate the organization and accuse it of lies, they describe it as an alliance of cycle-terrorists and cycle-fascist” (Brn. Interviewee 2).

In the case of Copenhagen there are also obstacles to biking and the promotion of bicycle culture which has to do with macro structures of power. One interviewee thus pointed to the fact that in the transport sector car traffic and other means of mobility that are fueled by gas are the focus and main interest for the big players, the oil and car companies, in the mobility field (Cop. Interviewee 2). The resistance to the innovation does not come from civil society but from the market sector in Frankfurt. Milan's main problem seems to be parked cars that occupy public spaces thus impeding the development of alternative mobility ways.

5. Merged country perspectives on actor characteristics

In this chapter we provide findings on the actor characteristics. We provide perspectives on the actors involved in the four cities and present a synthesis of the country similarities and differences according to each hypothesis. The chapter is guided by the magnitude of the actors contribution to the social innovation stream, and we point to the characteristics of the actors that have contributed to the SI streams. For each hypothesis we present our findings from each of the cities and we then make a synthesized conclusion to the hypothesis for all four cities.

5.1. Sector affiliation of major actors

Denmark

In Copenhagen the major actors are primarily affiliated with third sector and the public sector, and none of the key actors are from the private sector. The Capital Region, the Road Directorate and the Municipality are all state actors. They do interact with actors from the other sectors, i.e. The Capital Region facilitates planning and implementation of studies and projects cutting across municipalities in the capital region; when the Road Directorate grant funding through the National Bike Funds to civil society projects and organisations. Through the National Bike Fund, and also the Municipality of Copenhagen's Bike program, these actors are important for pushing the agenda of sharing space for bicycles and promotion of bicycle culture in Copenhagen.

Bicycle Innovation Lab, Cycling Without Age and The Danish Cyclists Federation are all organisations of the third sector and the organisations are important for pushing the stream of social innovation. Bicycle Innovation Lab and Cycling without Age are innovative in their use of and promotion of the bike, whereas The Danish Cyclists' Federation is more focused on invoking on the political decision making regarding safety and infrastructure. The Danish Cycling Embassy under the Danish Cyclists' Federation further works to promote cycling and bicycle culture through talks, presentations and guided tours. The third sector organisations connect with actors from the public sector. Both Danish Cyclists' Federation and Bicycle Innovation Lab's advocacy activities focus on influencing state actors. Cycling Without Age is working closely with the public sector because the project is relying on the public elderly care homes to cooperate, by having the bikes (funded by the state) and by helping out when a resident is going out on a trip with a volunteer. Moreover Cycling Without Age and Bicycle Innovation Lab were financed by public money, and hence the state is also an important factor for these initiatives to get started.

Frankfurt

There are eight major actors operating in the field of sharing public spaces for bicycle use in Frankfurt. The main affiliation of the identified actors is the public sector (5 organisations), outnumbering organizations from the non-profit sector (1 organization) and the market (2 organizations). The main reason for this tendency towards public organizations lies in the structure of the field, since the eventual decision making, in particular on infrastructure, but also on central promotional activities lies with the local authorities, or at least they have to be involved to some degree. There are some state actors that appear more central to driving the SI stream than others: the Radfahrbüro for instance has become a point of contact that one almost cannot avoid when it comes to any issues that have to deal with bike traffic in Frankfurt. IVM is of importance, specifically as a broker of ideas but also as a broker of collaboration between other actors. Although smallest in number, ADFC as a non-profit organisation comes

second and partly first in terms of influence. Major initiatives such as bike+business have been initiated by the organisation and has been involved or actively driven all other milestones of the stream. For-profit actors have also contributed their share to making bicycling more relevant and accessible in Frankfurt through their bike sharing offers, but have appeared on the scene only in the last couple of years. They were able to tap into a developed landscape of actors, initiatives and infrastructure to establish their services, but have been relatively less important than state and third sector actors in driving the SI stream.

Brno

In the field of sharing space for bicycles and promotion of bicycle culture in Brno, the most important role is played by the third sector (led by organizations Brno na kole, Nadace Partnerství, Rekola) and by the public sector (Brno City Municipality, Department of Transportation and Brněnské komunikace). Third sector organizations and civil societies are involved in independent activities focused on enhancing the interest for cyclo transport as well as on providing comments on official documents and strategies. Moreover, they advocate for the public sector to promote the effort to increase infrastructure and build facilities in the public space reflecting the needs of bikers.

The market actor (Alternativní dopravní studio) is involved in the field rather in relation to its commercial interests as the organization provides primarily commercial services of a project architect office (Brn. Interviewee 4).

Milan

The main actors who have contributed to the emergence and diffusion of the social innovation stream in Milan belongs equally to the public, private and third sectors. The public sector is mainly represented by the city municipality which has been working to minimise the number of cars in the city and has initiated the city's bike sharing system. In Milan there are several third sector organisations working in the field of sharing space for bicycles. The organisations Massa Marmocchi is an informal group of parents and volunteers that bring children to school by bicycles, and the organisation Antismog Parents is also a player in the field advocating against pollution in the city. Further the organisation Ciclobby FIAB is important in part because of their campaigns:

“Third sector is a key player because it increases the engagement of the community in using sustainable way of transport. I’m thinking about FIAB and Salvaiciclisti with their wide campaigns” (Mil. Interviewee 5).

Fondazione Cariplo represents one of the main grant organisations in Milan, since it supports both financially and technically the project they decide to launch. The private sector is mainly represented by commercial companies. The company Rossignoli for example sells bicycles but also promotes the sensitization campaign developed by the third sector and by Cariplo foundation. The cycle bar Upcycle is also a private actor and the oldest for profit player in the field is Rossignoli, a bike shop that was founded in 1901.

Hypothesis conclusion

In conclusion, the four cities present us with an understanding of actors from the third sector and the public sector being the main driving force of the SI stream. The public sector actors and the third sector actors further seem to be connected in their work with the SI stream. This is

seen as the third sector actors inform the state and advocates for state action in the field. The state is an important field actor in all four cities, while in Denmark the state is also important for third sector actors, as funding for the third sector projects often comes from state grants. The private sector actors do not seem to be of importance for pushing the SI stream, as market actors rather tap into the stream to pursue profit, rather than contribute to the innovativeness of the stream.

5.2. Social needs orientation (H 1.1)

Copenhagen

The actors of the public sector (the Capital Region, the Municipality of Copenhagen and the Danish Road Directorate) are oriented towards the needs of the citizens and are hence concerned with social and environmental needs in their work. The Municipality of Copenhagen has meetings with citizens and other stakeholders in order to improve the cycle path network and the Bike Accounts are good examples of the Municipality's concern with citizens' need for safety:

"The Bike Accounts also show that people feel safer while biking in the city. We have succeeded in creating a safer atmosphere by building wider biking lanes and regulating traffic lights so as to give way to cyclists" (Cop. Interviewee 5).

The third sector actor Bicycle Innovation Lab is to a high degree oriented towards environmental and social needs. This is seen in the fact that the organisation started out of a wish to meet the transportation needs of people by other means than cars:

"The idea behind our Bicycle Library was to find a way to give people the possibility to try out an alternative means of mobility than driving in cars" (Cop. Interviewee 7).

Cycling Without Age is also to a very high degree oriented towards social needs. The main goal for the organisation is to battle a social problem of elderly citizens being immobile and lonely:

"It started three years ago because an elderly man in an elderly home next to where I live kept catching my eye when I biked past him in the morning or evening. I felt that there was something sad about him being in this same place all the time, because his age meant that he had a very limited mobility." (Cop. Interviewee 8).

Finally, The Danish Cyclists Federation is also to a very high degree oriented towards social and environmental needs. The organisation is working to promote biking and help Danish Cyclists' to get the best conditions for biking. Hence there is an orientation towards cyclists' needs, and the organisation is the voice of cyclists in the realm of Danish politics.

Frankfurt

All the eight major actors in the field in Frankfurt showed a tendency towards the fact that a social needs orientation is central in their action. This is not very surprising, since they are operating in a field that tries to improve the conditions for cyclists in the city. However, social needs orientation seems to be less important for market actors, as the latter are mainly operating in the field to create benefits for their corporation.

Brno

In Brno the public sector actors Brno City Municipality and Department of Transportation are working with legislation and instructions of political representation. The public sector actors

deal with topics that can seem unpopular in the public eye, such as fixing the prices for public transportation. The social needs of people is hence not the main core of the public actors' activity.

The third sector actor Brno na kole is generally oriented towards vulnerable participants of the transportation system. The third sector actor Rekola focuses on advocacy activities concerning support for bike sharing, development of cyclo infrastructure in cooperation with the City, promotion of cycling and healthy lifestyle. Rekola does not cooperate with any vulnerable group of citizens. Rekola considers their activities as politically sensitive, unpopular, maybe on the edge of activism (Brn. Interviewee 3). They intend to broaden the spectre of their activities on the topic of use of shabby spaces of the city (Brn. Interviewee 3), and this intention can be seen as looking into a social need of the citizens.

Milan

All the key actors of Milan have a strong orientation towards social needs. Even if the commercial sector does not have in its mission a specific focus on the satisfaction of social needs it pursues those objectives through concrete activities - these activities are for example "bicicletta ritrovata" (an exhibition devoted to the history of the bicycle) and the birth of new bars and pubs for cyclers where to have book presentations and conferences to diffuse the usage of bicycles in the city.

Hypothesis conclusion

An orientation towards social needs is common for the third sector actors in all four cities. Moreover in Copenhagen, Frankfurt and Milan the public sector actors also have a social needs orientation in the core of their activities. As for private sector actors two different traits are present; in Frankfurt social needs are not assigned to private sector actors' actions, while in Milan the private sector actors show a tendency towards a concern for social needs in their activities.

5.3. Organisational value sets (H 1.2)

Copenhagen

In Copenhagen pro-social values play an important role for the public sector organisations., but the pro-social values are not at the core of the actors' actions.

In the third sector organisation Bicycle Innovation Lab pro-social values in the form of caring for the environment and the city's accommodation of people in transit are very important to the organisation. The organisation is not actively concerned with ethical orientations such as solidarity and caring in regard to their organisational value set, but more oriented toward inspiring pro-environmental changes in mobility policies and everyday transportation habits. At Cycling Without Age social values are very important to the organisation. The organisation's main goal is caring for the elderly and bringing quality of life to everyone engaged in the project, both the users of the service as well as the volunteers:

"Cycling Without Age can be described in many ways, but I think that it can best be described as a way of creating community while biking. A bike is not a means of transportation from A to B, but also a social instrument" (Cop. Interviewee 8).

The Danish Cyclists Federation to a high extent has a pro-social organisational value set. Being a membership organisation and being the political voice of *all* cyclists in Denmark solidarity can be seen as a core value.

Frankfurt

For the actors in Frankfurt pro-social values play a role across all organisations, at least to some extent. However, pro-social value sets are not ranked to be most important for the organizations.

Brno

The setting of the values of the public sector actors in Brno is based on the legislation and instructions of political representation. Here pro-social value are not at the core.

The third sector organization Brno na kole does not have a code of ethics, nevertheless, the representatives were thinking about its creation and moreover decided not to cooperate with big corporations. There is a linkage mostly to local organizations. In terms of relation towards the public, the association tries to be transparent from a financial as well as a factual point of view. This is also the reason why membership meetings are opened to a public. The other third sector organisation Rekola

“[is based in] a wide spectre of values: equal and active approach, recycling, positive attitude towards life, towards the city itself, aid to the weaker” (Brn. Interviewee 3).

Alternativní dopravní studio (ADOS) works with what they trust has a meaning to wider society. Municipalities and cities that use services of the organization belong to its group of stakeholders as well as citizens and cyclists, who subsequently benefit from these services.

Milan

All the organizations are socially oriented, in particular those belonging to the third sector such as Ciclobby, Genitori Antismog, Massamocchi. These organizations put social values at the center of their own activities. The commercial and public organizations are socially oriented as well even if social values are not as central as they are in the activities carried out by third sector organizations.

Hypothesis conclusion

Organisational value sets are to some extent pro-social for the third sector actors across the four cities. In Frankfurt pro-social orientations are not at the very core of the actors' activities. In Copenhagen pro-social values range from caring for people to caring for the environment. In Brno and Milan third sector actors see pro-social values as central for their work. There cannot be seen a completely unison picture of the meaning and status of pro-social values for the third sector organisations in the four cities, as Frankfurt third sector organisations do not see pro-social value sets as very important.

None of the public sector and private sector actors in the four cities see pro-social values as central to their work, though pro-social value sets do matter for the public institutions.

In the third sector the value sets of a pro-social character differs a lot, and hence both openness, care and solidarity are presented as core values, though unrelated to one another.

5.4. Internal organisational culture (H 1.3)

Copenhagen

For Copenhagen public sector actors there is not a very open organisational culture. These actors see a hierarchical organisation. This said, there is to some extent openness.

For the third sector organisations in Copenhagen it is clear that there is a very open internal organisational culture. Bicycle Innovation Lab has a very open organisational culture. This is for example the case because members are part of maintaining the bicycle library services and other activities. Members and volunteers have a lot to say, and they have a great influence on the organisation's activities. Cycling Without Age also has a very open organisational culture. The volunteers are themselves responsible for planning and perform the rickshaw trips whenever they want to and to wherever they would like to go (of course the passenger(s) and the pilot figure out this collectively). There are only a couple of key principles in the organisation, and apart from that all the volunteers are welcome to pose ideas and invent new practices as they like and share them on the webpage that the organisation's members all have access to:

"We have an online platform where we share knowledge and where we put resources on i.e. insurance and concepts. We want to make it possible for people to help each other. And we also go to other countries to teach and share knowledge with our colleagues there." (Cop. Interviewee 8).

The Danish Cyclists' Federation also has an open organisational culture where the employees can participate in the creation of structures and processes, even though the organisation has an organised organisational hierarchy.

Frankfurt

The internal organisational structure differs across the identified main actors in the field. However, most organizations identified are operating on fairly pronounced organizational hierarchies, which become especially visible in the public sector, more specifically those organisations that have a public administration character rather than that of an individual agency. In these organisations that are strong hierarchies and rigid structures, which may harm their innovative capacity of these organizations. Nevertheless, some effort is made to allow employees to freely create novel ideas and to develop new projects.

Brno

At the Department of Transportation of Brno City Municipality there is a fixed organisational structure. The organizational culture as well as the organization structure result from legislation and instructions of political representation. Approximately 75% of activities of the Department have character of government administrative activities and only one fourth is represented by the self-governing activities. The fundamental decisions related to self-government are, however, made by the political representation (Brn. Interviewee 1).

The third sector organisation Brno na kole is horizontal in its leadership. Most of the issues are debated consensually. The statutory authority is collective and the representatives of the formal management are so called "the first among equals" (Brn. Interviewee 2). The organization does not have paid employees. Likewise, the organizational structure of Rekola is open. Within Brno, the organization works as horizontally structured and the decision-making is realized through voting during bigger member meetings. The private sector actor

Alternativní dopravní studio (ADOS) is also rather open. It is mainly because of the fact that the director is self-employed and has just four employees, with whom he consults major decisions (Brn. Interviewee 4).

Milan

In Milan the organisational openness varies across the different actors in the field. The Municipality, the third sector organisation MassaMarmocchi and the private sector organisation FIAB all seem to have a medium openness, while both the bike shop Rossignoli and the Antismog association claim to have a high openness and possibility for staff to participate in important decisions and strategic choices. In the case of public organizations, the decisional power is delegated exclusively to the municipality of Milan that can act independently or in coordination with the regional authority when there is an overlap of competences. The municipality is open to listen to and understand the cyclers' needs and propose them many initiatives, which are often well- received and accepted by them.

Hypothesis conclusion

The openness of organisations varies across the four cities. For most of the third sector organisations in the four cities there is organisational openness. Though, for the case of Frankfurt the third sector organisations are hierarchically organised. and in Milan the third sector organisations differ from high openness to medium openness. As for the public sector actors there is only a small degree of openness in Copenhagen, Frankfurt and Brno. In Milan the Municipality seems to have a medium degree of organisational openness. Despite the organisational culture in public sector actors, there seems to be a wish to adhere to some openness across all four cities.

5.5. External organisational openness (H 1.4)

Copenhagen

All the public sector actors in the field in Copenhagen, The Capital Region, the Municipality of Copenhagen and the Road Directorate, all work with external stakeholders, but not to the same extent as the third sector organisations. Bicycle Innovation Lab is involved with other stakeholders in the field to a high degree. The organisation is working with public agencies and with private companies and involve volunteer members in the work through general assemblies. Similarly, Cycling Without Age is also very involved with external stakeholders. The external stakeholders are mainly the nursing homes and the local municipalities around the country which play a pivotal role. The organisation is also very eager to share knowledge with any interested party. The Danish Cyclists' Federation is also very engaged in knowledge exchange and in participating in shared projects. Many of the Federation's campaigns are in collaboration with external stakeholders, i.e. the We Bike To Work campaign where employees from many different companies participate every year.

Frankfurt

In Frankfurt the interconnections between the main actors in the field are very high. There are many institutionalized forms of exchange, e.g. regular conferences or institutionalized meetings across the organization. Moreover, there is a strong integration of the ADFC and the Radfahrbüro when it comes to the development of new offers for bicycle use in Frankfurt. However, it is also becoming clear that connections are stronger between state and non-profit actors than to market actors. Although the latter are involved in some parts of the process, they

are neither seen as central by the others, nor as well connected. By the example above of ADFC and Radfahrbüro, it seems that the more central the actors and the more involved they are in driving the SI stream, the more connected they are or vice versa.

Brno

Brno Municipality aims at openness and availability and is involved in political discussion and enters to this discussion due to its expertise. The department of transport takes part in activities of other departments of the Brno City Municipality, municipal enterprises or other institutions of the public sector (South Moravian region, The Ministry of Transportation, Road and Motorway Directorate of the Czech Republic, etc.) (Brn. Interviewee 1).

The third sector actor Brno na kole has stakeholders that are mainly members (active as well as inactive), companies (from the area of cyclo transportation) and other nonprofit organizations. The organization tries to involve the wider public as well as its stakeholders into cyclo transport related issues, mostly by regular events, such as bike rides with a purpose to promote the cyclo transport as well as to draw attention to current failures of the transport infrastructure (Brn. Interviewee 2). Similarly in the other civil society organisation Rekola, the stakeholders are represented by members of the organisation, who directly use the system of bikesharing and by volunteers, who are involved into service activities.

Milan

The Municipality of Milan is not involved with a lot of external stakeholders and the same is the case for the third sector organisations. For what concerns the city of Milan, the network built around cyclers and bicycle mobility is not so well-connected and dense. The connections are few and scattered despite the efforts of FIAB and Ciclobby to develop the network. FIAB and Ciclobby tried to strengthen the connections inside the network by inviting the Municipality, the private sector and the third sector to open debate and forum of discussion. These attempts, however, have not given the expected results.

The network is much stronger inside the third sector than between the third sector and organizations affiliated with other sectors. The biggest network is the one that links nonprofit organizations and informal groups of citizens who organize advocacy campaigns and various activities that solidify their relationships and their commonality of interests. For example FIAB and Ciclobby and Genitori Antismog participate to the event “bici in festa”. Moreover, Fondazione Cariplo, private grant-making organization, works closely with Ciclobby from the third sector.

Hypothesis conclusion

Third sector actors under study across the four cities engage in exchange with external stakeholders, with different kinds of external stakeholders. In Frankfurt the third sector is very connected to the public sector through exchange while in Brno the third sector is connected to companies and the wider public, and in Copenhagen the third sector actors engage with external actors from all the sectors. As for the public sector actors in the cities there are less exchange with external stakeholders.

5.6. Transaction costs in detecting societal challenges and know-how (H 1.5)

Copenhagen

In Copenhagen none of the actors experience high transaction costs in detecting societal challenges. It is partly through public hearings that the public sector gains knowledge from the challenges in the field witnessed by actors from all sectors. Public sector actors in Copenhagen has medium transaction costs and in the third sector organisations the transaction costs are medium to very low. In Bicycle Innovation Lab transaction costs in detecting social challenges are also medium. The organisation is engaged in the political (national as well as local) agenda of biking and does not have big costs in their activities to gain knowledge in the field. Cycling Without Age has low transaction costs in detecting societal challenges, and has a large network of volunteers who share thoughts, ideas and challenges with each other on an online platform.

Frankfurt

In Frankfurt there are many regional inter-organisational fora, which allow an exchange of knowledge on a regular basis. Especially the public sector is responsible for organizing these fora. These events, e.g., “RADforum RheinMain”, which was established in 2002, allow all main actors in Frankfurt to exchange their views, plans and opportunities for collaboration twice a year. In contrast to the regular exchange mechanisms, decision making and gathering knowledge informally on a regular basis within or between can be quite tedious. In particular in public sector organisations, which operate on the principles of public bureaucracy intra-organizational transaction costs seem to be high.

Brno

The municipality’s transport department is attempting to share experiences with other sister cities within the frame of the CIVITAS group or the Association of Cities for Bikers. The membership of Brno within the bike-road Brno-Vienna is also important for the Department, especially because of the exchange of experiences of member municipalities and cities (Brn. Interviewee 1).

As for the third sector actors Brno na kole works as a fellowship of friends and fellows, who share a common interest of spreading the cyclo transport in the city.

Rekola has a complex organizational structure across the Czech Republic. Rekola collaborates with other entities within Brno (e.g. organizations such as Brno na kole), whose experience in cyclo transport is used. The organization also benefits from the experience and skills of its members and supporters, who work on a voluntary basis or on the basis of short-term contracts. (Brn. Interviewee 3). Alternativní dopravní studio (ADOS) is engaged in a broader discussion in rather limited extent, which is mainly based on the scope of its contracts (Brn. Interviewee 4). The organization as a whole is probably not involved in any platform, however, its employees are rather active even beyond their work duties. In the period from 2010 (until 2012), the representative of the organization held the post of cyclo-coordinator of Brno and also was a member of the Committee for Bicycle Transport of the Ministry of Transport. (Brn. Interviewee 2; Brněnský cyklo-koordinátor (2010))

Milan

The transaction costs are very low for public and commercial organizations. Third sector organizations have to face the highest transaction costs (in terms of economic and human

efforts) to exchange resources with other stakeholders with the intent of achieving social objectives. For the municipality of Milan these efforts are much lower because the municipality establishes strategic guidelines to be implemented. The highest costs are those related to the communication and diffusion of the policy among the targets to whom the policy is directed.

Hypothesis Conclusion

Transaction costs of identifying challenges are rather low for the third sector organisations under study, except for in Milan. The organisations in Copenhagen Frankfurt and Brno consult stakeholders within and outside their organisation through networks and for this reason they have low costs. Milan's third sector organisations face higher costs for gaining new perspectives from stakeholders.

For the public sector actors the opposite picture emerges. Milan public sector institutions have low costs, while the case in Copenhagen, Frankfurt and partly Brno is that these organisations have higher costs than the third sector organisations.

5.7. Embeddedness in social/local context (H 1.6)

Copenhagen

The Municipality of Copenhagen, as well as other public sector actors, is engaging citizens and stakeholders by way of public hearings of new policies as well as through public meetings with citizens and organisations, and is hence embedded in the social context of the policies or infrastructure projects that are initiated. The state actors also invite experts like The Danish Cyclists' Federation to participate in developing and changing public policies and legislation in the field of biking.

Bicycle Innovation Lab is embedded in the surrounding community to a high degree. The local volunteers and the local members localize and integrate Bicycle Innovation Lab in the community's needs and social context regarding the bicycle library. Cycling Without Age is also very embedded in the surrounding community. The organisation's goal is to bring the elderly people out in the local neighbourhood of their life and hence connect their present with the life they have lived in the local community. The Danish Cyclists' Federation is also very embedded in the surrounded community, mainly by working with, or being in contact with other stakeholders in the field.

Frankfurt

For the case of Frankfurt, it can be stated that all observed organizations are embedded in the regional context to a high degree. This also applies to Market-actors, since they depend on the decision made by the local authority. All organizations are participating at the RADforum RheinMain and in multiple cross-organizational events. Besides this, the trust in the organizations is quite high, and this results from the fact that "everyone knows everyone" in the case of Frankfurt.

Brno

The embeddedness of the Department of Transportation has mainly a local character and results from the legislation and instructions of political representation. The Department is mostly oriented towards local issues. In this context, meetings and discussions with the public have local character. An example of such discussion could be a session about bike sharing or

commenting on a mobility plan. Within the stakeholders from the cycling area, especially organization Brno na kole is significantly involved into the discussion (Brn. Interviewee 1).

According to one of the interviewees from Brno na kole:

“... for sure there are people, who hate the organization and accuse it of lies, they describe it as an alliance of cyclo-terrorists and cyclo-fascist. It is, however, a small group of people in Brno. I rather feel ordinary trustworthiness, which is based on nonexistence of “scrapes” (Brn. Interviewee 2).

The Life of the majority of members of the organization is closely connected to Brno. That is the reason why the activities of the organization are mostly directed towards development of cyclo transport in Brno (commenting on a mobility plan, creation of cyclo maps, realization of bike rides) (Brn. Interviewee 2). Rekola on the other hand wants to be more involved in activities and revival of public space. Now, for instance the organization participates in the organization of the festival Setkávání (students of theatre schools). However, the main activity still remains in bikesharing in Brno. (Brn. Interviewee 3). As for Alternativní dopravní studio (ADOS), the organization is embedded in the society in rather limited extent, which is mainly based on the scope of its contracts. These lie in dealing with the traffic situation in places of contracting authority, i.e. municipalities and cities in the Czech Republic (Brn. Interviewee 4)

Milan

In the case of Milan, all the organizations are very much linked to the territory and the local context. The third sector is deeply rooted in this context and its objective is to give voice to unexpressed or under developed social needs. The public sector, especially the previous local government coalition (active after 2011) has been able to listen to citizens' needs and being part of a system. The private sector shares with the local community a set of social values that go beyond the selling of bicycles.

Hypothesis Conclusion

The strength of connections across all four cities with regards to the public, private and third sector actors in the communities where they operate is high to very high. The municipalities consult with the citizens as well as third sector organisations which are membership based especially in Copenhagen when developing and public policy. In Frankfurt there is also a high level of cooperation based on trust.

5.8. Resource diversity (H 1.7)

Copenhagen

In Bicycle Innovation Lab has a low resource diversity. The funding for the project is mainly membership fees and selling of services:

“We started as a project financed by the Danish Road Directory, and after the money was used we changed to a member organisation with an independent board. We both have some member activities, such as events and talks and the activities around the Bicycle Library, and we also sell services to companies and municipalities. We do both things because we want to make a difference and change things in the mobility and traffic agenda” (Cop. Interviewee 7).

Bicycle Innovation Lab can only employ very few people on a regular basis but there are a lot of different members and volunteers in the organisation.

Cycling Without Age has a high resource diversity due to the very many volunteers and users in the organisation:

“We bring together people with different backgrounds, from different generations and different social classes and this produces something very special socially” (Cop. Interviewee 8).

The Danish Cyclists’ Federation has a medium resource diversity in terms the employees as well as the funding. The funding mainly comes from the organisation’s campaigns and from the membership fees.

Frankfurt

While the interviewed market actors did not reveal their financial funding streams, the funding streams of both public actors and third sector actors have been communicated by the organisations. All public actors are of course essentially funded by tax money, however the sources the influxes of finance came from were partly diversified and composed of budgets at the city level and the federal state level. Some public actors, for instance RMV, had a holding-like structures, that is several public institutions were the governing and financing bodies of this single organisation. The financial resources of ADFC are mainly based on membership fees and donations.

In addition to this, there seems to be low employee diversity across all actors, in particular with regard to skills, knowledge and expertise. Each organisation taken for itself was rather homogenous on this aspect. Only when the analysis is lifted to the level of partnerships and collaboration, do people with different sets of knowledge come together.

Brno

Financial resources of the department of transportation in Brno municipality have public character above all, while potential private funding is represented by fees for services.

“The Department of Transportation is liable to budget cuts, what can represent significant limit of its activity.” (Brn. Interviewee 1).

The education of employees of the Department is mostly focused on transportation.

“Most of the employees of the Department have university education, only assistants have high school education.” (Brn. Interviewee 1).

Brno na kole does not have individual fundraising, the financial sources are represented by membership fees, donations of different small supporters and fans of bike rides. Currently, the organization does not have other regular sources. (Brn. Interviewee 2). Besides its members, the organization is supported by other entities, such as Nadace Veronica (material donation), Kabaret Špaček (space for meetings), Nadace Partnerství (support while organizing activities). (Brn. Interviewee 2)). In Rekola the organization has a number of sympathizers from the financial supporters, especially the department Brněnské komunikace of the Brno City Municipality is currently important. Previously, the organization was also supported by local universities (Masaryk University, Brno University of Technology). The support was based on a contractual agreement. The contributions collected in this way are used primarily to cover the operating costs of the organization. (Brn. Interviewee 3). The Financial resources of Alternativní dopravní studio (ADOS), are realized in the form of revenue for the work.

Employees of the organization are mainly university graduates. Overall, there are four employees and the director working in the organization. (Brn. Interviewee 4)

Milan

The funding structure of public and commercial organizations is shaped by a low degree of diversity while the funding structure of private nonprofit organizations is characterized by a higher degree of diversity. Public organizations are mainly funded by municipality fees, which are the major sources of income together with the regional grant for the infrastructure and services. For what concerns the commercial sector, the financial resources are predominantly dependent on the market and are peculiar to every type of commercial activity. Third sector organizations are financially supported by individual donations, public funds and grants from private grant-making organizations such as Cariplo Foundation. Third sector organizations are also characterized by a high degree of diversity in the competences and backgrounds of their employees. These employees have different skills and educational backgrounds (e.g., economics, architecture, political science, philosophy and scientific backgrounds).

Hypothesis conclusion

Resource diversity across all four cities can be looked at in terms of funding streams and access to expertise. In all four cities the public sector actors have low resource diversity as they are funded primarily by the government through tax payers money. The private sector and third sector actors have more diversity in their funding usually from membership fees, selling their services and donations from financial sympathizers. In terms of expertise the public sector across all four countries has a low resource diversity as their employees do not usually come from diverse backgrounds, a contrast to the third sector actors consisting of volunteers and employees with different skills and backgrounds.

5.9. The role of voluntary engagement (H 1.8)

Copenhagen

In Bicycle Innovation Lab 50% of the staff are volunteers. The volunteers are important for the Bicycle Library, because it is the volunteers/members that maintain the library's services.

In Cycling Without Age almost all the staff are volunteers. That is, the pilots who lift the job of offering bike rides are all volunteers. There are a few paid staff members in the secretariat who take care of PR, advocacy and political engagement. The volunteers are hence pivotal to the work that the organisation does.

In Danish Cyclists' Federation all the staff are paid employees.

Frankfurt

We cannot make any conclusive statement about the role of volunteers, other than that they are generally irrelevant for the SI stream under study in Frankfurt, since none of the organizations employs a significant proportion of volunteers at all. Volunteers are only very indirectly engaged in the organisation's' activities. ADFC for instance draws on the support of volunteers when it runs special events, e.g., the "Frankfurt bike night." RMV reported about consulting individual citizens on their view of transport infrastructure and services in Frankfurt. At times these citizens test specific offers or are interviewed on specific aspects in a targeted fashion. This is why citizens in this case go beyond being mere respondents to a

customer survey. Their engagement in fact has some traits of voluntary engagement, but it can certainly not be interpreted as a significant form of volunteering.

Brno

Brno City Municipality, sometimes hires short-term interns, who are involved rather in administrative work. (Brn. Interviewee 1). Brno na kole, recruits its volunteers mostly through its friends and acquaintances, eventually through bike rides and bike meetings. A facebook profile or narrow mailing list is also used for recruiting potential helpers. Volunteers help to the organization mainly with preparation of traditional cyclo events. They are mostly long-term volunteers, who participate without any financial compensation (Brn. Interviewee 2). Rekola has about 15 to 20 volunteers, who are mainly active in services of shared “pink bicycles”. The organization has a minimum number of working contractual relations - 8 approximately. Volunteers are recruited mainly from members of the association and subsequently, they do their activities without any financial reward. (Brn. Interviewee 3). Alternativní dopravní studio (ADOS) has a minimum of volunteers, it recruits them only on short-term internships and eventually helping them through consultation of their theses (Brn. Interviewee 4)

"If the intern does well, there is a potential job offer" (Brn. Interviewee 4).

Milan

The influence of volunteering seem to be high or very high in the case of third sector organizations and in the case of informal groups of citizens such as massa marmocchi e genitori antismog who based their entire activity on these practices. It is instead totally absent in the case of public and private organizations. In the case of the municipality of Milan, there is the possibility, which is practiced mainly among old people, to contribute to voluntary and civic service to accomplish some activities that could be of particular interest for the community.

Hypothesis conclusion

In the case of private and public actors in all four cities there seems to be very low if any forms of volunteering. Instead in cities such as Milan, Brno and Copenhagen with the exception of Danish cyclist federation all third sector actors have high to very high forms of voluntary engagement. The SI stream in Frankfurt is not according to this study influenced by volunteer engagement as there is very little volunteering in any of the sectors.

5.10. ‘Unengaged’ forms of volunteering (if applicable) (H 1.9)

Unengaged forms of volunteering can be identified by the properties they exhibit as regards the genuinely voluntary character of the activity as well as a critical level of engagement and commitment. Possible varieties of unengaged voluntary engagement could be e.g., episodic volunteering or compulsory volunteer services.

Copenhagen

In Bicycle Innovation Lab and Cycling Without Age there can be said to be a low level of unengaged volunteering. The organisation is supported by many volunteers, but none of the volunteers work there independently of an intrinsic devotion to the project. The same is the case in The Danish Cyclists’ Federation, where all the employees are paid.

Frankfurt

As remarked above, volunteering didn't play a role in our case investigation. So, this applies to volunteering too. The only relation to the subject of 'unengaged volunteering' this time can be made by referring to the involvement of volunteers by ADFC when running specific events. From ADFC's point of view, this did however not have any significant effects on the activities it was and is performing as a driver for the SI stream.

Brno

In Brno City Municipality, their recruitment and training is task for a human resources department of Brno City Municipality. To interfere into these affairs is not under the competence of the Department

"Previously mentioned interns are hired based on collaboration with respective schools (mostly from study programmes of administration and economics)." (Brn. Interviewee 1).

Brno na kole, does not show any form of unengaged volunteering, since all volunteers are personally involved in activities of the organization. (Brn. Interviewee 2). Rekola also does not have unengaged forms of volunteering; all volunteers are personally involved in activities of the organization (Brn. Interviewee 3). Alternativní dopravní studio (ADOS), Organization is not against accepting interns nor are there any obstacles that would prevent the organization to do so. Potential volunteers represent unpaid staff. Interns are recruited mainly from university students who consult with the organization their thesis. However, interested interns appear rather rarely. (Brn. Interviewee 4)

Milan

In Milan there are no cases of unengaged volunteering.

Hypothesis Conclusion

In all four cities there is very little if any unengaged volunteering, In most cases there are paid employees, interns or volunteers who are personally involved with the projects. In Frankfurt ADFC often utilizes episodic volunteering when running specific events.

5.11. Linkage between advocacy work and service provision (H 1.10)

Copenhagen

Bicycle Innovation Lab is engaged in both service provision (the bicycle library) as well as advocacy in the form of the promotional exhibition and the organisation's lobby activities regarding politics in the field. An interviewee says that:

"We interact with politicians. Our work is not too concerned with concrete policy and legislation, but oriented towards the local levels of municipalities' traffic strategies. Municipalities construct the roads, and we want to inspire them in how the roads should be built" (Cop. Interviewee 7).

Hence, to organisation is able to tie together service provision and advocacy.

Cycling Without Age is primarily providing a service to take elderly citizens on bike rides around the city, but the organisation is also working to promote the use of biking for social

needs. There is a strong link between the organisation's service provision and advocacy activities.

The Danish Cyclists' Federation also ties together service provision and advocacy. The organisation's main activity is advocacy but it also offers services such as tours, talks, seminars and more. The activities support each other and hence there is also a strong link between advocacy and service provision.

Frankfurt

In the case of Frankfurt it became clear that only ADFC tries to tie together advocacy and service provision. Both market and public actors focus mainly on their role as service providers. Some public sector organisations also tried to launch campaigns to raise the number of cyclists in Frankfurt or to promote new projects in the city, but they have also reported deficits in expertise for actions of this kind, which is why advocacy efforts are mostly outsourced to specialised private agencies.

Brno

The activities of the Department result from legislation and instructions of political representation. At the same time, the continuity of previous decisions and arrangements is important. The Department is active also in identifying and creating its own tasks. However, the tasks are also entered in form of instructions of political representation. (Brn. Interviewee 1) In Rekola, activities of the organization have character of advocacy work as well as service provision. In the past, mainly advocacy prevailed, however, currently the service provision is more important for the organization. From activities of the organization political values can be detected, however, the organization itself is not involved in the political debate.

In Brno na kola the activities have mostly character of advocacy. However, the spectre of the activities might change in relation to a potential success in a current grant procedure. The organization is directly involved into political debate on various levels. It attempts to meet deputies for transportation at least twice within their election period. In relation to pre-election meetings the organization strives for confrontation with candidates, in relation to cyclo transport topic. It also tries to positively influence planning of public space (Brn. Interviewee 2).

Milan

No cases where advocacy work and service provision are truly linked. Third sector organizations' activities are predominantly focused on advocacy and lobbying activities while public and commercial organizations act mainly as service providers.

Hypothesis conclusion

In all four cities, there is a strong linkage between advocacy work and service provision especially within the third sector organisations. In Milan, Frankfurt and Copenhagen the public and market sector primarily provide services and are not engaged advocacy. There are however a notable difference in Frankfurt where the market sector instead of engaging in any advocacy work themselves they outsources this to private expertise.

5.12. Independence from external pressures (H 1.11)

Copenhagen

Bicycle Innovation Lab does not experience external pressures. The organisation was funded by the national bike fund the first year, and after the money stopped the organisation has survived by turning into a membership organisation. Hence there is not a lot of dependency on external political or economic pressures today.

Cycling Without Age does not experience pressures from political or market processes because the project runs by way of voluntary engagement, but having said this the organisation is dependent on the municipalities' financing of the rickshaw bikes that are stationed at the nursing homes.

The Danish Cyclists' Federation experiences a very high external pressure but is able to act independently hereof. The organisation has existed for more than 100 years and knows how to navigate in the political context, and secure financing through campaigns, membership fees and variety of external sponsors.

Frankfurt

For the actors operating in the city of Frankfurt, all organizations are faced with external pressures, at least to some extent. The first and most important pressure are financial restraints in the field of maintenance, infrastructure and urban development. Since many of the key actors in Frankfurt are from the public sector, financial restraints or budget cuts are the main factors of external pressures they are faced with. An example of the effects is the weak advocacy component of the public sector actors diagnosed above. In addition, the ADFC is always faced with financial restraints, since it is a third sector organization with very few different funding streams. Furthermore, the market actors in the field of sharing public spaces for bicycle use are in competition with each other, which creates further financial pressures. However, public and third sector organisations are affected more strongly by these restraints than the market actors. Political pressures do not seem to be very pronounced with regard to this very issue. To the contrary, the political environment overall seems to be in favour of the SI trend and therefore supportive of the actors driving it, as expressed by one interviewee: In fact more and more is being done, because policy makers have recognised that it is a very good alternative [referring to cycling] and that it is a cheaper alternative to improve the sustainability of individual mobility within the city (Fra. Interviewee 2)

Brno

Brno City Municipality faces pressures of various groups of stakeholders, which speak out for support of the cyclo transport in the city (supporting bikesharing as well), or speak out against it. Particularly the organization Brno na kole is an advocate of the development of the cyclo transportation. Important role is played also by Nadace Partnerství. Contrary, those who are against the cyclo transportation are rather anonymous voices from public as well as some representatives of political groups, e.g. opposition parties (Brn. Interviewee 1). Brno na kole's area of activities is not liable to budget cuts. The organization feels neither a competition in the field, nor external pressures arising from public or private sectors (Brn. Interviewee 2). Rekola currently does not operate on the basis of grants, for that reason is not directly dependent on the possible curtailment of grants. Some pitfalls may be seen in termination of the cooperation agreement with the city organization Brněnské komunikace, on the basis of

which the organization is now supported (Brn. Interviewee 3). An obstacle of the development of activities of Rekola was that the city centre used to be closed for the cyclists. However, the centre has been accessible in recent years (since 2015, partly due to a change in political representation of Brno and partly thanks to long term the efforts of Brno na kole) (Brn. Interviewee 3). The organization does not feel any competition. From the public sector it feels particularly support - as they have an interest in the area (Brn. Interviewee 3). As for Alternativní dopravní studio (ADOS), maybe competition can be considered as an external pressure, as it occurs naturally in the field. (Brn. Interviewee 4).

"The field can be controversial and it often happens right within the pre-election political discussions" (Brn. Interviewee 4)

Milan

None of the three sectors is completely independent from external pressures (media, political or economic actors). The municipality of Milan is strongly influenced by other levels of governments, which confers the municipality visibility and reputation among the community. The private sector is totally dependent upon the market. Nonprofit organizations are independent from the market but they are economically dependent on private funds and they are striving to gain mediatic visibility in order to achieve their objectives of institutional lobbying.

Hypothesis conclusion

The SI stream in all four cities is dependant on the state, the third sector and market sector to varying degrees and as such experience external pressure differently based on the type of organisation and the source of funding. In Copenhagen the third sector does not experience external pressure mostly because they are membership or voluntary based. In Frankfurt however, many of the key actors are from the public sector, and thus face pressures in the form of budget cuts. For all four cities, market actors experience external competition as a pressure. In Milan there is an interesting scenario where third sector organisations are dependent on the private funds from the market hence have to deal with market pressures.

6. Innovation Properties

6.1. Innovation trajectories and dynamism (disruptiveness of the innovation)

6.1.1. Copenhagen

In Copenhagen the stream of innovation grew stronger in the years from 2006 to 2009. In this period several political and systemic changes caused the city to develop into a world class cycle city. This has to do with the political representation in the city parliament, because two very bike-oriented figures became Lord Mayor and Mayor of Techniques and Environment. From 2006 to 2009 the local agenda in Copenhagen put a lot of focus on biking:

"The bicycle culture in Copenhagen was enhanced during the period 2006-2009 because in this period cycling became much more prominent in the local political agenda" (Interviewee 3).

This means that there were more resources to initiate bike projects around the city. Throughout this period:

“Every year there was between 75 and 100 million DKK in the municipal budget reserved for projects related to biking. This was where the Bike program (Cykelpakker) started” (Cop. Interviewee 5).

In this period Copenhagen was a frontrunner at a national scale. It was in 2009 that Denmark saw its first national Bike Funds:

“The first national Bike Funds was established in 2009 as was a political settlement across the aisle. It was part of the Green Transport Agreement of 2009” (Interviewee 3).

The Bike Funds meant that the rest of the country also experienced a rise in bike-related projects:

“The public Cycle Funds (Cykelpuljen) was very important, not very much in Copenhagen, but other places in the country, because it meant 50% co-funding from the state to cycle projects. In Copenhagen the Bike Funds was good to lean on, but Municipality of Copenhagen had its funding for cycle projects anyway. Hence the national Cykelpulje was not vital in the case of Copenhagen” (Cop. Interviewee 5).

The Bike Funds for example funded the initiation of Bicycle Innovation Lab, and hence plays a role for the local initiatives all over the country, including Copenhagen. Without the Funds Bicycle Innovation Lab could not have been started.

The main actor in this period was hence the Municipality of Copenhagen and a new era started as to how biking is comprehended in political and economic terms:

“Municipality of Copenhagen and especially the Bike Secretariat has developed new models for calculating mobility cost-effectivity. They have parameters as health and stress and environment” (Cop. Interviewee 2).

In this process the civil society organisation Danish Cyclists' Federation also plays a by putting pressure on politicians and decision makers through their advocacy activities.

The stream of innovation thus saw an intensification during these years, though the stream of innovation did not see disruptive changes before the years of 2011 and 2013 when Bicycle Innovation Lab and Cycling Without Age were founded. These organisations comprehend biking and sharing space for bicycles in a manner that put focus on social aspects of cycling and sharing mobility spaces. This is especially the case for Cycling Without Age. When Cycling Without Age started using the bike as a means of social care for people (pilots as well as riders) in Copenhagen this was picked up by municipalities all over Denmark, and later the idea was also picked up in countries all over the world. The way that bikes are a means of mobility earns an extra layer when the bike trips are the starting point for social interaction between riders and pilots as well as with the surrounding cyclists. The social aspect rather than the mobility aspect is hence in focus for all the engaged parts of the interaction:

“I will not deny that there might be some other cyclists who are annoyed by us taking up so much space with the rickshaw, but to my surprise I have never experienced anybody being annoyed by me cycling one or two elderly people around in a rickshaw. I have only experienced that people are very happy to meet us in the street, even if people have to make space” (Cop. Interviewee 8).

From this we can understand that sharing space for bicycles is no longer a question of actual street space - but a question of a social space where people meet and come together during cycling.

6.1.2. Frankfurt

In Frankfurt the SI stream has picked up in terms of trajectories and dynamism in the last years, so much effort has been made to expand public spaces for bicycles in the city of Frankfurt. In addition to the opening of one-way streets to counter-directed bike traffic, which had peaked around 2006-2009, other developments in recent years were of great influence for the bicycling conditions in the city. Three central developments have to be named here:

The first measure was the introduction of counter-traffic use of one-way streets by bikes as highlighted by one interviewee:

“The adaption of the traffic rules that allowed counter-directed bike traffic in one-way streets—that was a milestone, since you could then move beyond a dedicated bike traffic network” (Fra. Interviewee 10).

With limited effort, and without investment into additional infrastructure it has opened public spaces to bike use, which had not been available before.

The second measure was the implementation of the bike+business concept in Frankfurt, which was of great effort not only for cyclists but also for companies and the City of Frankfurt. It addresses firms of all sizes and therefore has the capacity of reaching a considerable number of people. This concept led to a change of the perception of cyclists and helps to improve general bicycle conditions in the city, including investments in bicycle infrastructure.

The third measure driving the SI stream was the implementation of the Radfahrbüro as a one-stop-shop for all bicycle matters. This has created a major push in how the sharing of public spaces for bike use is being promoted in the city.

So we have actions at three different levels affecting the SI stream in a major fashion. The first was a legal action regulating the use of existing infrastructure, the second a promotional programme and the third the creation of a central institution. “Central” is to be understood in three ways here: First, central in terms of canalising responsibilities and communication; second in terms of having a coordinative institution that links existing actors further together and third in terms of providing a connection between organisational actors and cyclists or the broader public respectively.

As regards the overall timeframe we considered in the analysis of the SI stream in Frankfurt, it has neither deviated a lot nor led to any major disruptions in the first 10 years of the analysed period (1992-2002), while some significant changes have been initiated right after that, most of which however took until recently (about last 5 years) to unfold. Overall the SI stream has nonetheless not had significant disruptive effects, but is rather of an evolutionary character. Two of our interviewees described the process as “continual” (Fra. Interviewees 2 & 8).

6.1.3. Brno

There are several trajectories of the innovation stream under study. First, we witness its quantitative rise both in terms of people involved in the process and the effects it has on other citizens: the gradual rehabilitation (if not invention) of the bike transportation as the part of the city transportation strategies with the rise in the investment into the infrastructure is undisputable and they are limited only by the declining resistance of (now minor) political

forces, by the availability of public resources for the construction of biking infrastructure and by the geography of the city itself.

There is unfavourable geography of the city that prevents cycling and bike sharing; there is a lot of hills (Brn. Interviewee 5). The infrastructure is not developed for extensive bike sharing projects, it is necessary to do so in order to keep cycling safe (Brn. Interviewee 3).

At the same time, the content of the idea has also been transformed and remain mixed. Quite surprisingly, traditional NGOs promoting biking in the city are to some extent sceptical both in terms of impact and motives of organizations promoting bikesharing. In fact, the initiative was grasped both by public servicemen of local authority (inspired abroad by the city-organized model) and by branch of small NGO (now business company) years ago so it is too soon to evaluate the whole process also because it is extremely sensitive both to political environment and public resources that are invested in the transport infrastructure.

6.1.4. Milan

In Milan the strength of the SI stream started picking up around 2002, with the launch of the first critical mass event on mobility and environmental sustainability. From 2007 the first feasibility for the bike sharing system was conducted by Bicocca University and Cariplo Foundations which led to the first bike sharing project bikeMI, launched in 2008.

Milan was part of a broader initiative in Italy to introduce a sustainable mobility plan in 2009. According to report by Ciclobby, the services of bike sharing are active in 58 cities (10 more in two years) with more than 1,000 reference points (+42%) and almost ten thousand bicycles (+62%). Recent data also highlights an increasing number of car and bike sharing users. This number has increased by 26% over the last 8 years and by 56% compared with 2003.

As regards the overall timeframe analysis of the SI stream in Milan, it did not lead to any major disruptions in the first 10 years of the analysed period 1992-2002. While some significant changes were initiated right after that, most truly came into effect from between 2011 to 2015. The stream of innovation has seen an intensification especially with the change of leadership within the municipality that is pro environmental sustainability and has such passed policies and laws that favour a biking culture. The socio-cultural aspect that changed people's perception of bicycles from more than just a means of transport to a fashion statement has also played a role in advancing the SI stream.

6.1.5. Synthesis

The disruptiveness of the SI stream of sharing space for bicycles and promotion of bicycle culture varies across the four cities.

The SI stream seems to pick up in all four countries at times when the City Parliament has politically been in favour of more environmentally friendly transport polity. Investment in infrastructure has thus helped strengthen the SI stream in all four countries. Parallel to this there has been a change of mindset in the four cities, in the form of more people using the bike for everyday transportation, and not as a leisure activity. This development has been of a gradual and evolutionary character despite the significant raise in awareness and of bike

projects, because the actors and the strategies seem to be similar to earlier stages, though intensified.

The SI stream is only really disruptive in the case of Copenhagen where third sector initiatives have succeeded to change the perception of biking into a question of social relations and social well-being, rather than a mere instrument for mobility.

6.2. 'Strength' of the innovation: country-specific particularities

6.2.1. Copenhagen

Copenhagen has seen a strong tendency to share space for bicycles and promotion of bicycle culture. Copenhagen takes the lead in a Danish context, but other municipalities such as Aarhus and Odense are also very strong in this area. Denmark as such is a nation where biking is a natural part of everyday life, and the size of even the big cities makes biking a convenient form of mobility. The space of the cities, and especially in Copenhagen, is challenged due to the big inflow of residents and hence in Copenhagen the strategies of sharing space for bicycles has been important for the Danish Road Directorate and the Municipality of Copenhagen. The life and lifestyle in Copenhagen is also oriented towards biking and bicycle culture, and hence people is in want of good facilities for biking, for example safety and broad biking lanes. The stream of innovation is hence very strong in Copenhagen in many different aspects, and the three different areas of social/cultural, political and systemic processes all show that the stream, of innovation is flowing on many different levels.

6.2.2. Frankfurt

From a national perspective, it appears that Frankfurt is among the frontrunners in promoting the SI stream, but not with a major lead as compared to some other cities or the development in Germany in general. The ambition, at least among some actors, however is fairly high. Here is one example:

"We need to reach 18 - 20 %, here in the region. We can reach it, because connections are close. Everything is nearby. We have a great public transport network [...] on which we can take on bikes for free etc.. [...] A share of 18 - 20 % of bike travel relative to other transport, that is the goal until about 2030 I'd say" (Fra. Interviewee 2).

6.2.3. Brno

In the Czech context, the developments in the field of bikesharing in Brno are remarkable and fully comparable to Prague, as the key civil society (and now commercial) actors promoting the innovation are in fact identical. At the same time, the strength of innovation in Brno is unique in terms of cooperation between the nonprofit sector and public administration on the one hand, and in terms of contemporary openness of political opportunities at the city level, which strengthened and speeded the whole process. This separates Brno from other cities (Prague, Hradec Králové) and has potential to develop the innovation further and beyond the existing national scale. There is also an important transnational aspect of the innovation - both the inspiration and dissemination of the idea of bike sharing but also the transnational cooperation in the field (City of Vienna, the Civitas ELAN Project with Gent, Porto, Ljubljana and Zagreb, etc.). To sum up Brno is one of the leaders of bike sharing initiatives in the Czech context.

6.2.4. Milan

In Milan the the strength of innovation started picking up towards 2005, when various institutions were involved in the the Mobility Management Project. In 2011 a replacement in the administration to a new mayor took place. Letizia Moratti began to implement some interventions building new infrastructures and promoting cyclic events. Firstly she proposed the “Green Rays project” that defines and promotes a new slow mobility, as a new green nervature in Milan urban fabric. In 2013 it is showed that the use of bikes increase while the use of cars in Milan has decreased. The SI stream in Milan is strong in the sense of more people using bike sharing system and this vav use the bike instead of the car. The SI stream is hence getting stronger in Milan.

6.3. Synthesis of comparative analysis

At the core of social innovativeness in the stream of sharing space for bicycle use we find the workings of formation of a value system in which all actors are playing part. Geographical and historical conditions vary between these four cities and therefore each city has the capacity only to produce and recreate its own value system and as a result create particularity to the stream of innovation that takes place. In the four cities a decisive and timely intervention from state throughout the time frame is key to either setting in place or not the ground elements over which innovation can take root. A clear progression is observed in all four cities toward greater innovativeness in the sharing of space for bicycles are synthetized in Figures 9-12

Figure 9: Synthesis of Process Tracing Narratives and Value creation in stream SI Copenhagen

| | | | | | | |
|----------------------|---|--|--|---|---|---|
| CPH | Sport Recreation Local transport | Safety Sport Recreation Local transport | Environ-mental Sustaina-bility Local (LA21) Partici-patory Planning Redevelopm ents of Copenhagen Ørestad | Cultural EU Capital Shared Pedestrian Tourism branding | Livability Well-being Health Green EU Capital Green Transport Sharing Copenhagen | Art/Bike Elderly Fitness Branding Cph Civic bike Pride Speed back fast commute Economic Productivity |
| Civil Society | Men & Women Cycle Federation | Pedestrians (Ghel 1970's) Cycle Federation collaborates testing | Families | All can ride Cycle Embassy | All must ride | Riding bikes a right for all Mores bikes at cost of worsening car circulation conditions |

| | | | | | | |
|---------------|---|--|--|--|----------------------------|---------------------------------|
| | | | | | | (disruption) |
| State | Bike counting(1924) Systemic counts(1930) | Traffic Planning Safety/speed | Participatory Planning | Sust.Traffic planning links public + bikes | Bike on Trains | Super Cycle Highways |
| | Road Standards (1940) | Define how a road + bike line should look like | Environment including Safety Standards | Focus on easing commuting by bike | Bike&Ride | Bikes absorbing part of traffic |
| | Bikes paths as lines | | Cycle Budget | | Park&Ride | Green bike corridors |
| | | | | | Region Mobility Management | E-bikes sharing |
| Market | Plain bike models | Men /sport Women/city differentiation | Christiana Bike, family bikes | Foldable bicycles to take on trains | Bike delivery | E-bikes |
| | | | | | Post/DHL | Multiple IT platforms |
| Years | 1940s-60s | 1970s-80s | 1990s-98 | 2000s | 2008 | 2015 |

Figure 9 shows that Copenhagen the stream has more maturity than in the other three cities and strong participation of the state, strong support and creativity from civil society and fruitful opportunities for market actors..

In Frankfurt Figure 10: efforts are more recent than in Copenhagen but the state has taken the lead, while organizations from civil society are fewer and use of bicycles has stagnated in a low level during the last years, the foundation for a value system are there but the creativity of civil society and market is tempered by a strong car culture prevailing in the city spaces.

Figure 10: Synthesis process tracing narratives and value creation in stream of SI Frankfurt

| FRA | Sport Leisure | Sport Leisure | Sport Leisure | Sport Leisure | Bike & Ride Parking near stations Bikes on Trains Sport /Leisure | City of Commuters Increasing ridership Leisure |
|---------------|------------------|------------------|---|---|--|--|
| Civil Society | | | ADFC 6% using bicycles | ADFC starts Bike+Busine ss | ADFC | 11-13% actual bike traffic Bed-Bike Bike- Business |
| State | | | Traffic Agency RMV Federatl State Hessen Concept of 12 main bike routes Opening one-way streets | 2005-2006 open all of the many one-way streets to counter- directed bike traffic | Radfahrbüro in 2009 Green Party Bike Award 2010 | National goal 10% traffic should be by bike ADFC + RMV offer bike to fold IVM Regional authority |
| Market | | | | | NextBike Call a Bike (Deustsche Bank) | platform Meldeplattf orm Radverkehr (suggest new bike lines) |
| Years | 1940s-60s | 1970s-80s | 1990s-98 | 2000s | 2010 | 2015 |

In Milan, the state has recently cleverly adopted strategies, and resources, directly in interaction with market actors. Market actors are coming forward with very innovative ideas that will certainly gain attraction in other cities, as they are making them fashionable in Italy and potentially beyond. The conditions to ride safely are not in place in Milan, therefore the efforts are more targeted to the well-fit category of young, healthy and those led by fashion.

Figure 11: Synthesis process tracing narratives and value creation in stream of SI Milan

| Milan | Sport Recreation | Sport Recreation | Sport Recreation | Creation of a municipal agency for mobility analysis | Major Focus in Sustainable Mobility Branding- linking bikes to fashion | Bike & Fashion Bike & Culture Bike & Drinks Bike & Food Bike & Art Music |
|---------------|---------------------|---------------------|---------------------|--|--|--|
| Civil Society | Men | Men | Men | Young culture- Men and women but fit to ride | Bike as Status Youth & fitness oriented activity | Young culture- Men and women but fit to ride |
| State | | | | AMAT- agency collecting traffic data National Bicycle Conference 2007 | BikeMi (2008) Change of Government Green Rays Project | Taxing Cars entering city center Further restrictions |
| Market | | | | | #Bicittadini (children) | Cycle Mechanics Upcycle Cycle Bar |
| Years | 1940s-60s | 1970s-80s | 1990s-98 | 2000s | 2008 | 2015 |

In Brno, the innovativeness of the stream is still in the ideational phase. Civil society actors wanting to become business actors are taking some initiatives to test. However, Brno is also exemplifying a place where organized civil society efforts may be capable of damping innovativeness in this stream of sharing. Brno's civil society contestation to "sharing" as a business and city development proposition seems to be a contradiction in terms for a country emerging from a communitarian base into an open market society. One of the parallels that can be found in the four cities is that at the local level the narratives that seem to generate more traction and innovativeness in sharing space for bicycling are not those closely linked to awareness and political prioritization of environmentally friendly practices per se but those linked to improving health (all), enjoying life (Milan/Copenhagen), recovering the local traditions (Brno) in the urban context.

Figure 12: Synthesis of Process Tracing Narratives and Value creation Stream SI in Brno

| Brno | Sport Leisure | Sport Leisure | Sport Leisure | Sport Leisure | Sport Leisure Sharing questioned | Sharing Bikes contested Geography limiting No public interest in alternative modes to cars Bikes as Leisure |
|---------------|------------------|------------------|--|---|---|--|
| Civil Society | | | Beginning of regular bike rides | Young culture- Men and women but fit to ride | Sharing contested Brno Rekola Supporting | Civic Privatisms Youth culture Brno Na Skole pro- bikes Brno Autem: anti bikes- citizens rights to cars |
| State | | | Revolutionary Plan for Bike Transportation | | Bike Plan Renewed Emphasizes bike sharing | Limited bike lanes provision |
| Market | | | | | ADOS Brno Rekola | ADOS Brno Rekola |
| Years | 1940s-60s | 1970s-80s | 1990s-98 | 2000s | 2010 | 2015 |

7. Lessons learned and way ahead

The picture that has emerged from the comparative analysis of these four cities is one highlighting a systemic and dynamic interplay between organizations and actors, where practices, narratives, relevant claims, new and old struggles, are represented in the physical world at the moment of sharing space in the daily pedaling practices of citizens in these four societies. Each city has its own locally contextual system, therefore innovativeness in the stream of sharing space for bicycling is to a large extent difficult to entirely replicate from city

to city. Without doubts there is a key pivotal role for the state to play in creating and implementing safety rules that makes possible innovative efforts from civil society and market to take root. In short, there is no sharing space for bicycling when there is no safety. But similarly, sharing space does not relate to the physical possibilities alone, it requires other efforts. Therefore the value created in this stream of innovation is so crucial. That safety is important and will damp possibilities is highly visible in Brno and Milan restricting users; the opposite is visible in Frankfurt and Copenhagen where the careful attention that safety requires is given and the volumes of ridership are visible.

In the city with the most vibrant stream of innovation of the four cities, Copenhagen, the many narratives and claims that are presented or created in the interplay of actors, reproduces and maintains a great infusion of innovativeness. The other three cities are tagging along with fewer claims or narratives brought forward, but as Milan shows, the room for creativity has no limits. Overall our observation and tracing of these processes clearly indicated the constituting emergence of what we see as the most important impact of this stream of social innovation. This is the constitution of a value system for sharing space for bicycles. This value system is constituted of meanings, practices, services, new agencies, urgent claims, opportunities, promises, tasks and objectives which are coalescing and setting in motion feedback loops that reinforce, but in some cases undercut, the innovativeness generated in the sharing space for bicycling.

The value system created in this stream of innovation is contextual. What is generic about it for all cities is that it has at its core the relations between actors, so that actions by one actor affect what the other elements do. Establishing direct lines of causality would be difficult to document with the evidences here presented, and therefore with our approach we seek to document the relational systemic interplay between actors and the way it leads to a process of value creation around this stream of innovation. We submit that our approach allowed us to show what the impact of social innovativeness in this specific field of action is, and that is: the creation of a value system that supports, but it may also constraint, the stream innovativeness in sharing space for bicycling.

We find a positive feedback loop value system for sharing space for bicycles in Copenhagen. The created value system attracts high innovativeness from all actors, constantly pushing in the direction of further innovation. Innovativeness has resulted in enhancements of many kinds in the overall system performance. Copenhagen as a case demonstrates the social innovativeness in this stream. This it does by bringing forward social narratives (greater inclusion- as for example with the organization cycle without age). However, there are also limits to the available space in Copenhagen, and as bicycling volumes increases, limits to how much additional traffic can be taken are becoming very clear. Further increases in bike traffic in Copenhagen may depend on compromising the current access levels to car traffic and difficult political decisions. Bicycle congestion is becoming common in some corridors in the city, discouraging bike riders. In addition within Denmark the innovativeness of the Copenhagen system instead of serving as a blue print for all other cities, act as a magnet for the innovators, bicycle lovers and bicycle leaders available. This produces what one of the Danish experts called a see/saw effect, where further innovative gains in terms of the resources that organizations invest, time, energy and ideas applied Copenhagen come at the cost of these same resources of innovation being invested in other cities. Indeed outside Copenhagen, bicycle use levels drop and significantly so in rural areas.

The social innovativeness impact in this field in Frankfurt has also brought about a strong positive feedback value system, however in our observations the field appears less rich in narratives than in Copenhagen. Innovativeness in the field in Frankfurt is advanced via state intervention in cooperation with third sector and market.. Frankfurt demonstrates a solid record of development of facilities, services and integration with public transport of recent data. The state has created and funded a central office “Radfahrbüro” which has the vision of increasing bike ridership. However, in Frankfurt, as in the rest of Germany, a strong pro-auto narrative is always present. Frankfurt is a city of commuters, the experts say, and as such it needs to provide easy access to them. This narrative can play well for bicycles, but it does not catch the imagination as much as, “a super cycle highway” does in Copenhagen. The opportunities for replicating Frankfurt success in creating safe conditions for bicycling across Germany are great, but the challenge for Frankfurt to stimulate increasing bike ridership in the city will still require further innovation.

In Milan, a value system of innovativeness is building its reputation led by the state in partnership with business sector. A recently elected green motivated government has been mirroring and directly cooperating with businesses in branding a strategy that makes sharing space for bicycling fashionable, and part of a youth culture; a combined strategy of target branding and medium stratification. Milan has the state and market as the primary innovating actors in the field. The state in Milan to a certain extent ahead of -Frankfurt and Copenhagen- in engaging in two fronts: on one side directly strategizing and in partnerships with business, on the other waging the first confrontational battles to limit access to car owners (taxes and imposing access restrictions). These may be unpopular policies but they also create the demand markets require to thrive. Effectively many university students have made the switch. Milan seems to be tapping into the high end forms of innovativeness observed in Copenhagen, however the physical supporting infrastructure for safe riding is not there. Therefore it is a large and all-encompassing increase in ridership is unlikely. Sharing space cannot advance without safety first. The ideas Milan is creating in this field have a good chance to be replicated in other cities in Italy and beyond.

In Brno, the value system for sharing space for bicycling is challenged by historical narratives that question what the meaning of sharing in a post-east communist era really means, and by specific geographic conditions. In Brno geography alone limits the expansion of “usability” of the system, a constraint not present in the flatter cities. Field innovativeness in Brno is the most incipient of the four cities considered. It is led by the state with mixing degrees of support from civil society and market. The business sector in Brno although incipient is ready to capitalize and make inroads replicating innovative approaches from cities like Prague and Vienna, but they are counting on a less supportive environment from the general population. The importance of state intervention to the field innovativeness is emphasized in the cases of Milan and Brno. Only when safe conditions for bike riding and space sharing are present can the third sector actors and business thrive with ideas that have better success of being implemented. In all cities it is visible, that while truly innovative forces may emerge from civil society with support and cooperation with the public sector, market actors are ready to tap into the ideas of the SI stream in order to produce profits.

The present study has confronted a number of limitations particularly in the more rigorous implementation of the methodological approach of process tracing that requires summing in more concretely in tracing events and linking actors roles to specific outcomes. We have added different steps to gain further traction in our analysis but are not here claiming to have found

causal relations. The process has been fruitful to identify systemic and relational dimensions and elements. Further research in analyzing specific individualized segments of influence and interaction concerning the stream of innovation of sharing space for bicycling are possible, but clearly not recommended in a large comparative study like the present one. We found the findings and discussion in further research that considers streams of innovation as relational systems can yield richer and more valuable inputs to the understanding of impacts of social innovation.

8. References

- ADAC. (2013). Rahmenriss und Lenkerbruch: Beim aktuellen Pedelec-Test von ADAC und Stiftung Warentest zeigten die Testobjekte teils eklatante Sicherheitsmängel. Retrieved from <https://www.adac.de/infotestrat/adac-im-einsatz/motorwelt/pedelectest.aspx>
- ADFC Bett+Bike Service GmbH. (2016). Was ist Bett+Bike. Retrieved from <http://www.bettundbike.de/was-ist-bett-bike/was-ist-bett-bike>
- ADFC Frankfurt. (2016). Über uns. Retrieved from <http://www.meldeplattform-radverkehr.de/>
- ADFC Hessen. (2014). Fahrrad-Codierung: Der Code gegen den Klau. Retrieved from http://www.adfc-hessen.de/service/codierung/index_codierung.html
- ADFC Hessen. (2016a). bike + business: Der clevere Weg zur Arbeit. Retrieved from <http://www.bikeandbusiness.de/was-wir-tun/>
- ADFC Hessen. (2016b). Über uns. Retrieved from http://www.adfc-hessen.de/ueber_uns/index_ueber_uns.php
- Allgemeiner Studierendenausschuss Goethe Universität Frankfurt am Main. (2013). Infos zur Kooperation mit DB-Rent ab dem SoSe 2013. Retrieved from <http://asta-frankfurt.de/angebote/campusrad/infos-zur-kooperation-mit-db-rent-ab-dem-2013>
- Allgemeiner Studierendenausschuss Goethe Universität Frankfurt am Main. (2016). Kostenlose Registrierung bei Call-A-Bike. Retrieved from <http://asta-frankfurt.de/angebote/teil-1-neue-infos-zum-asta-campusrad-call-bike-anmeldung-jetzt-moeglich>
- AMAT, FIAB, Università degli Studi, Milano Bicocca. 2015. #Bicittadini. Interventi a Favore della Mobilità Ciclistica.
- Anheier, H. K., Krlev, G., Preuss, S., Mildenerberger, G., Bekkers, R., Lund, A. B. (2014). ITSSOIN Hypotheses. Deliverable 1.4 of the project: "Impact of the Third Sector as Social Innovation" (ITSSOIN), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research
- Bárta, D. (2010, December 1). Brněnský cyklo-koordinátor. Brno Na Kole. Retrieved March 29, 2016, from <http://www.brnonakole.cz/brnensky-cyklo-koordinator/>
- Biomega (n.d) About Biomega. Retrieved from <https://biomega.com/about/>
- Breitinger, M. Elektromobilität (2014, September 24): Aktionismus ohne Wert. *Die Zeit*. Retrieved from <http://www.zeit.de/mobilitaet/2014-09/elektroauto-subventionen-kommentar>
- Britz Nicolaisen, Christina (2016). Danskerne cykler mindre. Retrieved from <https://www.cyklistforbundet.dk/Aktuelt/Nyt/Nyheder/Vi-cykler-mindre>
- Bundesministerium für Verkehr und digitale Infrastruktur. (2014). Fahrradverkehr. Retrieved from <http://www.bmvi.de/SharedDocs/DE/Artikel/G/fahrradverkehr.html>
- Brněnský cyklo-koordinátor (2010, December 1). Brno Na Kole. Retrieved July 30, 2016, from <http://www.brnonakole.cz/brnensky-cyklo-koordinator/>
- City of Copenhagen (2011) "Field sustainable cities in Denmark" under the heading Mobility. The reference could not be fully added to this reference list.

- Collier, D. (2011). Understanding Process Tracing. *PS: Political Science & Politics*, 44(04), 823-830.
- Colville-Andersen, Mikael (2011) Copenhagenize Origins. Retrieved from <http://www.copenhagenize.com/2011/01/copenhagenize-origins.html>
- Cycling Embassy of Denmark (n.d) Our Services. Retrieved from <http://www.cycling-embassy.dk/our-services/>
- Dansk Arkitektur Center (2014) København: Verdens bedste cykelby. Retrieved from <http://www.dac.dk/da/dac-cities/baeredygtige-byer/alle-cases/transport/koebenhavn-verdens-bedste-cykelby/>
- DSB (2011) Rekord for cykler I S-tog. Retrieved from <https://www.dsb.dk/om-dsb/presse/nyheder/rekord-for-cykler-i-s-tog/>
- Deutscher Fahrradpreis - Best for Bike. (2010). Preisträger 2010. Retrieved from <http://www.der-deutsche-fahradpreis.de/preistraeger/preistraeger-archiv/2010.html>
- European Commission European Green Capital (2014a) 2014 – Copenhagen. Retrieved from <http://ec.europa.eu/environment/europeangreencapital/winning-cities/2014-copenhagen/>
- European Commission European Green Capital (2014b). Copenhagen Winner 2014 European Green Capital. Retrieved from http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2012/07/Copenhagen-Short-Leaflet_Web.pdf
- FIAB Milano, Ciclobby. 2013. 13° Censimento dei Ciclisti.
- FIAB Milano, Ciclobby, ACTL (Associazione per la Cultura e il Tempo Libero). 2009. Ciclo Milano, Il Dossier.
- Figueroa, M; Tygstrup, C.; Hyánek, V.; Navrátil, J.; Preuss, S.; Ferlisi, M.; Turrini, A. (2015). Field description in Environmental Sustainability: Sustainability in Cities. Part 1 of deliverable 6.1 of the project: "Impact of the Third Sector as Social Innovation" (ITSSOIN), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research.
- Fishman, E., Washington, H.N. 2013. Bike Share: a Synthesis of the Literature. *Transport Reviews*, Vol.33, No., 2. P. 148-165
- Focus Online (2013, May 28). ADAC warnt: "Diese Elektrofahrräder sind lebensgefährlich". *Focus Online*. Retrieved from http://www.focus.de/auto/motorrad/tid-31466/katastrophale-testergebnisse-adac-warnt-diese-elektrofahrraeder-sind-lebensgefahrlich_aid_999561.html
- Government et.al. (2012). Aftale mellem regeringen (Socialdemokraterne, Socialistisk Folkeparti og Radikale Venstre), Dansk Folkeparti og Enhedslisten om: Takstnedsættelser og investeringer til forbedring af den kollektive trafik. Retrieved from <https://www.trafikstyrelsen.dk/~media/Dokumenter/04%20Kollektiv%20trafik/01%20Koordinering%20af%20kollektiv%20trafik/Takstnedsaettelser/Aftaletekst%2011%20juni%202012%20bedre%20og%20billiger%20kollektiv%20trafik.pdf>
- IVM GmbH. (2016). Radroutenplaner Hessen: Willkommen bei der Meldeplattform Radverkehr. Retrieved from <http://www.meldeplattform-radverkehr.de/>
- IVM GmbH. (2010). Meldeplattform Radverkehr Region Frankfurt Rhein Main geht online: 54 Städten und Gemeinden der Region Frankfurt RheinMain beteiligen sich ab dem 30. April

- 2010 an der Meldeplattform Radverkehr. Retrieved from <http://www.ivm-rheinmain.de/Presse/meldeplattform-radverkehr-region-frankfurt-rheinmain-geht-online/>
- Klima-, Energi og Bygningeministeriet (2014) Lov om Klimarådet, klimapolitisk redegørelse og fastsættelse af nationale klimamålsætninger. Retrieved from <https://www.retsinformation.dk/forms/R0710.aspx?id=163875>
- Københavns Kommune (2002). Cykelpolitik 2002-2012. Retrieved from http://arkiv.cykelviden.dk/filer/313_2002_2012_cykelpolitik.pdf
- Københavns Kommune (2006). Oversigt over cykelprojekter besluttet I 2006 og foråret 2007 (Cykelpakke I og II). Retrieved from https://www.kk.dk/sites/default/files/edoc_old_format/Teknik-%20og%20Miljoedvalget/06-02-2008%2015.00.00/Dagsorden/04-02-2008%2011.31.27/Doknr%202008-20470%20-%20Bilag%203.%20Cykelfremkommelighed.PDF
- Københavns Kommune (2007) EcoMetropolis. Our vision for Copenhagen 2015. Retrieved from http://kk.sites.itera.dk/apps/kk_pub2/pdf/674_CFBnhMePZr.pdf
- Københavns Kommune (2011), Fra god til verdens bedste. Københavns cykelstrategi 2011-2025. Retrieved from http://kk.sites.itera.dk/apps/kk_pub2/pdf/818_YF8zF5k7Cr.pdf
- Københavns Kommune (2012). KBH 2025 Klimaplanen. Retrieved from http://kk.sites.itera.dk/apps/kk_pub2/pdf/930_QP7u8mn5bb.pdf
- Københavns Kommune (2014a). København Cyklernes By Cykelregnskabet 2014. Retrieved from http://kk.sites.itera.dk/apps/kk_pub2/pdf/1362_cFTGCXHzmE.pdf
- Københavns kommune (2014b) København cyklernes by. Cykelregnskabet 2014. Retrieved from http://kk.sites.itera.dk/apps/kk_pub2/pdf/1362_cFTGCXHzmE.pdf
- Københavnegrøn (n.d) Den grønne sti. Retrieved from <http://www.kobenhavnergron.dk/place/den-gronne-stinorrebroruten/>
- Leclerc, F. (2014a, May 9). Radfahren in Frankfurt: Wir holen auf. *Frankfurter Rundschau*. Retrieved from <http://www.fr-online.de/radfahren-in-frankfurt/radfahren-in-frankfurt--wir-holen-auf--,26706880,27082766.html>
- Leclerc, F. (2014b, October 28). Radnetz Frankfurt: Radwege sollen schneller ausgebaut werden. *Frankfurter Rundschau*. Retrieved from <http://www.fr-online.de/frankfurt/radnetz-frankfurt-radwege-sollen-schneller-ausgebaut-werden,1472798,28885386.html>
- Murr, G. (2014, May 30). Ausbau der Fahrradwege: Frankfurts Radler bekommen neue Wege. *Frankfurter Neue Presse*. Retrieved from <http://www.fnp.de/lokales/frankfurt/Fankfurts-Radler-bekommen-neue-Wege;art675,875056>
- nextbike GmbH. (2016). Frankfurt Stadtorte. Retrieved from <http://www.nextbike.de/de/standorte/>
- Ovacik, Erdem (2015) AirDonkey: Earn Money On Your Bike. Retrieved from <https://www.kickstarter.com/projects/2084861579/airdonkey-join-the-bike-sharing-revolution/description>
- Ragin, C.C. (2000). Fuzzy-Set Social Science. Chicago: University of Chicago Press
- Ragin, C.C. (2008). Redesigning Social Inquiry: Fuzzy Sets and Beyond. Chicago: University of Chicago Press

- Regionalverband Rhein-Main. (2016). Metropolregion FrankfurtRheinMain. Retrieved from <http://www.region-frankfurt.de/>
- Reidl, A. (2015, June 26). Mit dem Fahrrad zum Flughafen. *Die Zeit*. Retrieved from <http://blog.zeit.de/fahrrad/2015/06/26/frankfurt-flughafen-fahrrad-radwege/>
- Rhein-Main-Verkehrsverbund. (2013). Der RMV klärt auf: Mit dem fahrrad unterwegs im RMV. Retrieved from http://www.rmv.de/de/Verschiedenes/Informationen_zum_RMV/Kontakt/RMV_Dialog/allgemeine_rmv-themen/64792/Fahrradmitnahme.html
- Rhein-Main-Verkehrsverbund. (2016a). Bike & Ride: Fahrradabstellplätze. Retrieved from http://www.rmv.de/de/Fahrgastinfos/Unterwegs_mit/Fahrrad/Fahrradstellplaetze/42346/Fahrradstellplaetze.html?embeddedContext=contentbean%3A36568&tags1=756
- Rhein-Main-Verkehrsverbund. (2016b). Bike + Busniess: Mit dem Rad zur Arbeit. Retrieved from http://www.rmv.de/de/Fahrgastinfos/Unterwegs_mit/Fahrrad/31166/Bike_and_Business.html;
- Rhein-Main-Verkehrsverbund. (2016c). Fahrradzüge: Mehr Platz für Fahrradausflügler in Zügen. Erweiterte Kapazitäten auf RMV-Bahnlinsen. Retrieved from http://www.rmv.de/de/Fahrgastinfos/Unterwegs_mit/Fahrrad/31820/Fahrradzuege.html
- Rhein-Main-Verkehrsverbund. (2016d). Für eine clevere Mobilität: Faltrad zum Vorteilspreis. Retrieved from http://www.rmv.de/de/Fahrgastinfos/Unterwegs_mit/Fahrrad/Faltrad/72012/faltrad.html
- Rippegather, J. (2014, April 12). Parkende Autos sollen weichen. *Frankfurter Rundschau*. Retrieved from <http://www.fr-online.de/stadt-rad/abstellflaechen-fahrraeder-parkende-autos-sollen-weichen,26706880,26826924.html>
- Riis, Julie Benedicte (2015) Københavns cykelbroer. In Oplevbyen. Retrieved from <http://www.oplevbyen.dk/koebenhavns-cykelbroer/>
- Sinus Markt- und Sozialforschung GmbH. (2015). *Fahrrad-Monitor Deutschland 2015: Ergebnisse einer digitalen Online-Befragung*. Heidelberg. Retrieved from http://www.bmvi.de/SharedDocs/DE/Anlage/VerkehrUndMobilitaet/Fahrrad/fahrrad-monitor-deutschland-2015.pdf?__blob=publicationFile
- Stadt Frankfurt am Main. (2013). Mit dem Rad zum Flughafen. Retrieved from [http://www.frankfurt.de/sixcms/detail.php?id=2805&_ffmpar\[_id_inhalt\]=19278834](http://www.frankfurt.de/sixcms/detail.php?id=2805&_ffmpar[_id_inhalt]=19278834)
- Stadt Frankfurt am Main. (2016). Gibt es Krokodile im GrünGürtel?: Familien-Radtour auf der Safari-Route zum Zoo. Retrieved from [http://www.frankfurt.de/sixcms/detail.php?id=2855&_ffmpar\[_id_inhalt\]=30953446](http://www.frankfurt.de/sixcms/detail.php?id=2855&_ffmpar[_id_inhalt]=30953446)
- Stadt Frankfurt am Main Referat Mobilitäts- und Verkehrsplanung. (2016a). Fahrrad. Retrieved from <http://www.frankfurt.de/sixcms/detail.php?id=18888078>
- Stadt Frankfurt am Main Referat Mobilitäts- und Verkehrsplanung. (2016b). Mobilitätsstrategie: Frankfurt in Bewegung. Retrieved from <http://www.frankfurt.de/sixcms/detail.php?id=18888084>
- Stadt Frankfurt am Main. (2016c). Unsere Arbeit: Die Projekte des Radfahrbüros. Retrieved from <http://www.radfahren-ffm.de/213-0-Unsere-Arbeit.html?s=>

- Supercykelstier (n.d.) The project. Retrieved from <http://supercykelstier.dk/the-project/>
- traffiQ Lokale Nahverkehrsgesellschaft Frankfurt am Main mbH. (2016). EU-Projekte. Retrieved from http://www.traffiQ.de/31879.de.eu_projekte.html
- traffiQ Lokale Nahverkehrsgesellschaft Frankfurt am Main mbH. (2003). *Geschäftsbericht 2002*. Frankfurt a. M. Retrieved from http://www.traffiQ.de/fm/20/traffiQ_Geschaeftsbericht_2002.pdf Formatted as per the ITSSOIN guidelines.
- Vad Mathiesen, Brian & Jannik Kappel (2013) Transport policies related to climate change mitigation. Retrieved from http://vbn.aau.dk/files/76311117/Transport_policies_related_to_climate_change_mitigation.pdf
- Økonomiudvalget (2004) Dagsorden for ordinært møde tirsdag d. 8. juni 2014. Retrieved from https://www.kk.dk/sites/default/files/edoc_old_format/OEkonomiudvalget/08-06-2004%2015.00/Dagsorden/02-06-2004%2015.07.57/E89E224A8B16E7BEC1256EA700482BD7.htm

9. Appendix

9.1. Copenhagen Appendix

Danish Version of Expert interview guide

Ekspert interviews: Sharing Space for Bicycles and the Promotion of Bicycling Culture

Introduktion: målet med de følgende spørgsmål er bedre at forstå og beskrive, hvordan (og om) der i Københavns Kommune siden 1992 har været en udvikling hen imod at der bliver givet mere plads til 'blød' mobilitet i byens rum, som ellers er præget af en infrastruktur, der er tilpasset motorkøretøjer. Vi undersøger både kulturelle og sociale forandringer i den måde byens rum deles mellem mobilitetstyper samt fysiske forandringer af byens pladsudnyttelse.

1. I relation til tendenser til at dele det offentlige rum til fordel for cykling og desuden promovering af cykelkultur, hvilke politikker har så været relevante i Københavns Kommune mellem 1992 og 2016?
2. Hvad har været de væsentligste økonomiske, sociale og kulturelle udviklinger, der har haft indflydelse på den politiske udvikling?
3. Kan du beskrive interaktionen mellem Københavns Kommune og andre institutionelle niveauer (ministerier, regioner mv.)? Har interaktionerne haft indflydelse på udviklingen og vedtagelsen af politikker, der har bidraget til forandringer i byens pladsudnyttelse ift. mobilitet?
4. Er der andre kontekstuelle faktorer, som har haft betydning for kulturelle og fysiske forandringer af mobiliteten i byens rum (fx organisationer, virksomheder eller andre interessenter)?
5. Vi er særligt interesseret i at undersøge i hvilken udstrækning civilsamfundslige aktører og organisationer øver indflydelse på udbredelsen af kollaborativ pladsudnyttelse og blød mobilitet i København. Kan du beskrive hvilken rolle civilsamfundet har haft? (hvis nogen)

6. Vil du give feed-back på vores foreløbige kortlægning (vis matrix) af begivenheder, politiske udviklinger og relevante aktører? Kan du tilføje noget?

Interview guide for interviews with organisations:

1. How would you judge the *development* of sharing urban space for cycling and the promotion of bicycle use in Copenhagen: Has this been a process that included major disruptions, or has it been a rather gradual process?
2. How would you assess the *current* situation of the city's overall capacity or readiness to facilitate sharing of space for bicycle use in Copenhagen: What in your view are the key pillars in promoting bicycle use at the moment?
3. What actors do you think have played a role for the current situation?
4. Based on your experience is bicycle use strongly or weakly stratified, i.e. is bicycle use more strongly favoured by or accessible to certain social classes rather than others?

About your organisation

5. Could you briefly describe what your organisation does, and which sector (private/ public/third) it belongs to?
6. What do you think are the reasons of your organisation to be dedicated to this particular subject? For example, reasons might refer to personal experiences, organisational goals, or political priorities.
7. Do you identify the promotion of sharing space for bicycle use as an important and or pressing social need? If so, what do you do to meet this need?
8. Are there challenges linked to the work you do with the specific focus of your organisation? Examples of possible challenges might include, hard-to-reach groups, small profits etc.

About service users' needs

9. Could you please briefly describe the population that your organisation is focusing on (e.g. mostly people in this local community, people in the city at large, the entire country) or specific groups (e.g. tourist, school children, other groups).
10. What do you think are the reasons of your organisation for focusing on this particular (community/city/ population group)?

Questions for Comparative Qualitative Analysis

1. If you had to judge the extent to which the organisation is oriented at social and/or environmental needs (addressing a social/environmental issues that are recognized in society as in need of, how would you rate it? Select one

| | |
|---|--|
| very high social/environmental needs orientation | |
| high social/environmental needs orientation | |
| neither high nor low social/environmental needs orientation | |
| low social/environmental needs orientation | |
| no social/environmental needs orientation | |

2. If you had to judge the extent to which social values (ethical orientations, solidarity, caring) are important to the organisation, how would you rate it? Select one

| | |
|--|--|
| very high pro social value sets | |
| high pro social value sets | |
| neither high nor low pro social value sets | |
| low pro social value sets | |
| no pro social value sets | |

3. If you had to judge, the extent to which the organisation has an open organisational culture (members can shape or participate in the creation of structures and processes) how would you rate it? Select one

| | |
|--|--|
| very high open organisational culture | |
| high open organisational culture | |
| neither high nor low open organisational culture | |

| | |
|---------------------------------|--|
| low open organisational culture | |
| no open organisational culture | |

4. If you had to judge the extent to which the organisation is involved in knowledge exchange and active collaborations with external stakeholders (i.e. shared projects, extern stakeholder involvement), how would you rate it? Select one

| | |
|-----------------------------------|--|
| very high organisational openness | |
| high organisational openness | |
| medium organisational openness | |
| low organisational openness | |
| no organisational openness | |

5. If you had to judge the extent to which the organisation incurs transaction costs in detecting societal challenges (i.e. gaining expert knowledge, exchanging of knowledge with others), how would you rate it? Select one

| | |
|--|--|
| very low transaction costs | |
| low transaction costs | |
| neither low nor high transaction costs | |
| high transaction costs | |
| very high transaction costs | |

6. If you had to judge the extent to which the organisation is embedded in its surrounding community (collaboration rather than consultation, contact to stakeholders, a large network), how would you rate it?

| | |
|--------------------------|--|
| very high social capital | |
| high social capital | |
| medium social capital | |
| low social capital | |

| | |
|-------------------------|--|
| very low social capital | |
|-------------------------|--|

7. If you had to judge the resource diversity of the organisation (diversity in finance resources, employee diversity, variance in employee expertise and training), how would you rate it? Select one

| | |
|------------------------------|--|
| Very high resource diversity | |
| High resource diversity | |
| Medium resource diversity | |
| Low resource diversity | |
| No resource diversity | |

8. If you had to judge the extent to which volunteers are strongly and actively engaged to the organisation, how would you rate it?

| | |
|--------------------------------------|--|
| 75%-100% of the staff are volunteers | |
| 51%-74% of the staff are volunteers | |
| 50% of the staff are volunteers | |
| 25%-49% of the staff are volunteers | |
| 0%-25% of the staff are volunteers | |

9. If you had to judge the level of ‘unengaged’ forms of volunteering in the organisation (compulsory volunteering schemes, paid volunteer jobs such as jobs that could be fulfilled by anyone independent of their intrinsic devotion to the organization), what would it be?

| | |
|--|--|
| Very high level of ‘unengaged’ forms of volunteering | |
| High level of ‘unengaged’ forms of volunteering | |
| Medium level of ‘unengaged’ forms of volunteering | |
| Low level of ‘unengaged’ forms of volunteering | |

| | |
|---|--|
| No level of 'unengaged' forms of volunteering | |
|---|--|

10. If you had to judge the extent to which the organisation is able to tie together service provision (activity) and advocacy (discourse), how would you rate it?

| | |
|---|--|
| Very high level of service provision and advocacy | |
| High level of service provision and advocacy | |
| Medium level of service provision and advocacy | |
| Low level of service provision and advocacy | |
| No level of service provision and advocacy | |

11. If you had to judge the market, political or other pressures (budget cutbacks, laws do not offer much room for developing innovations, fierce competition from market participants) in the organisational field the organisation is placed in, how would you rate them?

| | |
|--|--|
| very high market or political pressure or other pressure in the field | |
| high market or political pressure or other pressure in the field | |
| neither high nor low market or political pressure or other pressure in the field | |
| low market or political pressure or other pressure in the field | |
| no market or political pressure or other pressure in the field | |

12. If you had to judge whether the organisation is able to act independently from these external pressures, how would you rate the organisation's independence?

| | |
|--------------------------------------|--|
| very high independence from external | |
|--------------------------------------|--|

| | |
|--|--|
| pressures | |
| high independence from external pressures | |
| medium independence from external pressures | |
| low independence from external pressures | |
| no independence from external pressures (very small range of independent actions) | |

13. If you had to judge the magnitude of the contribution of the organisation to promotion of sharing space for bicycle use and of bicycling culture, how would you rate it?

| | |
|---|--|
| very high contribution by the organisation to promotion of sharing space for bicycle use and of bicycling culture | |
| high contribution by the organisation to promotion of sharing space for bicycle use and of bicycling culture | |
| medium contribution by the organisation to promotion of sharing space for bicycle use and of bicycling culture | |
| low contribution by the organisation to promotion of sharing space for bicycle use and of bicycling culture | |
| no contribution by the organisation to promotion of sharing space for bicycle use and of bicycling culture | |

9.2. Frankfurt Appendix

Overview of further sources used in the research, but not cited directly:

E-Mobility

- o <http://www.radfahren-ffm.de/153-0-E-Mobilitaet.html?s=>
- o <https://www.gesetze-im-internet.de/bundesrecht/emog/gesamt.pdf>

- o <http://blog.zeit.de/fahrrad/2014/09/08/zukunftsmarkt-bike-sharing/>
- o <http://www.zeit.de/2014/43/sharing-economy-kapitalismus-wettbewerb>

Bicycle Traffic Net (Caring/Development/Offices/Platforms for Damages/Concepts)

- o [http://www.frankfurt.de/sixcms/detail.php?id=2778&_ffmpar\[_id_inhalt\]=8625788](http://www.frankfurt.de/sixcms/detail.php?id=2778&_ffmpar[_id_inhalt]=8625788)
- o [https://www.frankfurt.de/sixcms/detail.php?id=2778&_ffmpar\[_id_inhalt\]=8637463](https://www.frankfurt.de/sixcms/detail.php?id=2778&_ffmpar[_id_inhalt]=8637463)
- o <http://www.frankfurt.de/sixcms/detail.php?id=18888078>
- o <http://www.frankfurt.de/sixcms/detail.php?id=4137>
- o [http://www.frankfurt.de/sixcms/detail.php?id=3066&_ffmpar\[_id_inhalt\]=29617563](http://www.frankfurt.de/sixcms/detail.php?id=3066&_ffmpar[_id_inhalt]=29617563)
- o <http://www.radfahren-ffm.de/362-0-Verstaerkung-gefunden.html>
- o http://www.radfahren-ffm.de/files/20140219_pm_fahrradklimatest_2014.pdf
- o <http://www.rundertisch-radverkehr-frankfurt.de/>
- o <https://de.wikipedia.org/wiki/ADFC>
- o <http://www.adfc.de/news/fahrrad-monitor-2015-zeigt-stagnation-bei-radfoerderung>
- o <http://www.frankfurt.de/sixcms/media.php/738/2016%2002%2026%20Doku%20Mobilit%C3%A4tsforum%2021.09.15%20Wi%20DO.pdf>

Bike Renting/Sharing

- o <https://www.callabike-interaktiv.de/index.php?id=891&f=500>
- o <https://www.callabike-interaktiv.de/kundenbuchung/process.php?proc=bikesuche&f=500&f=500>
- o <http://www.frankfurt-tourismus.de/en/Discover-Experience/Leisure-and-Sports/Bicycle-Rental/next-bike>
- o <http://frankfurt.velotaxi.de/>; <https://de.wikipedia.org/wiki/Velotaxi>

Bike Security/Storage Possibilities

- o <http://www.radfahren-ffm.de/376-0-Das-Rad-parken-wo-man-wohnt.html>
- o http://www.adfc-Hesse.de/service/radfahrkurse/index_radfahrkurse.html
- o <http://lass-dich-sehen-frankfurt.de/>
- o <http://www.radfahren-ffm.de/9-0-Sicheres-Radfahren.html>
- Taking your Bike in Bus and Railway
- o http://www.bahn.de/p/view/mdb/bahnintern/angebotsberatung/regio/laender-tickets/pdfs/tickets_nicht_auf_bahn.de/mdb_211201_befoerderungsbedingungen_fahrradtageskarte_nahverkehr.pdf
- o http://www.bahn.de/p/view/service/fahrrad/mitnahme/preise_fahrradmitnahme.shtml
- o <http://fa-oeffentlicher-verkehr.adfc.de/Service.html>
- o http://www.rmv.de/de/Fahrgastinfos/Unterwegs_mit/Fahrrad/Freizeitbusse/
- o http://www.rmv.de/linkableblob/de/55880-86687/data/tourenvorschlaege_kombiniert_mit_bus_und_bahn.pdf
- o <http://www.fr-online.de/stadt-rad/abstellflaechen-fahrraeder-parkende-autos-sollen-weichen,26706880,26826924.html>

Tour Planning Possibilities (Homepages/Apps/Information Centre/Accommodations)

- o http://www.radroutenplaner.Hesse.de/rph_home_01.asp
- o <http://www.mainradweg.com/>

Connecting Bike and Jobs (Getting to the Job/Jobs with Bikes)

o <http://www.internationaler-bund.de/angebote/standort/210246>

German version of the interview guide:

Allgemeine Fragen Fahrradnutzung und Fahrradkultur im öffentlichen/städtischen Raum Frankfurt

Es geht um die Nutzung öffentlichen (städtischen) Raums für das Radfahren und die Förderung des Radfahrens und von „Radkultur“ in Deutschland – auch und insbesondere im Wettbewerb mit motorisiertem Verkehr: Wie schätzen Sie die Entwicklung in den letzten Jahren ein?

1. Wie würden Sie die aktuelle Situation in Frankfurt in den eben angesprochenen Bereichen einschätzen?
 - a. Was sind momentan die Schwerpunkte in der Förderung der Fahrradnutzung?
 - b. Gibt es irgendwelche herausstechenden Neuheiten in diesem Bereich?
2. Wer denken Sie waren die Akteure, die zur aktuellen Situation beigetragen haben?
 - a. Wer hatte dabei Ihrer Einschätzung nach eine zentrale Rolle?
3. Spielen kommerzielle ODER staatliche ODER zivilgesellschaftliche Akteure eine besonders starke oder schwache Rolle in der Förderung der Fahrradnutzung?
4. Wird das Radfahren von manchen sozialen Schichten stärker genutzt oder ist diesen leichter zugänglich als anderen?

Zu Ihrer Organisation

1. Bitte beschreiben Sie kurz die Aufgaben Ihrer Organisation.
2. Können Sie die Rolle beschreiben, die Ihre Organisation in Frankfurt hatte im Hinblick auf: Nutzung öffentlichen (städtischen) Raums für das Radfahren und Förderung des Radfahrens und von „Radkultur“ – auch und insbesondere im Wettbewerb mit motorisiertem Verkehr?
Zu den Bedürfnissen der Servicenutzer bzw. gesellschaftliche Bedürfnissen
3. Zu welchem Grade stimmen Sie damit überein, dass Ihre Organisation sich mit stark drängenden sozialen/ökologischen Angelegenheiten beschäftigt?
4. Wie, wenn überhaupt ermittelt Ihre Organisation, wie die sozialen/ökologischen Bedürfnisse bereits bestehender oder potentieller Klienten oder Kunden befriedigt werden (das heißt: all jener, die Fahrräder mieten oder ihre eigenen benutzen)?
5. Gibt es Schwierigkeiten bei der Arbeit die Sie machen in Verbindung mit dem speziellen Fokus Ihrer Organisation? Beispiele könnten die Ansprache schwer zu erreichender Gruppen sein, geringe Profite etc.

Zum Thema Werte

6. Zu welchem Grade stimmen Sie damit überein, dass die folgenden Werte einen wichtigen Teil dessen repräsentieren, was Ihre Organisation erreichen möchte (beispielsweise hinsichtlich Ihres Leitbilds oder Ihrer Unternehmensstrategie)? Einige Beispiele:

Befähigung von Bürgern (Empowerment)
Beteiligung

Gleichberechtigung
Naturschutz/ Ökologie
Solidarität

Reduktion von Luftverschmutzung und Lärmbelästigung
Bürgerbeteiligung/Partizipation
Öffentliche Pflichterfüllung

7. Wie schätzen sie die Bereitschaft und Fähigkeit Ihrer Organisation ein, intern und extern Veränderungsprozesse anzustoßen und aufrechtzuerhalten, die an den Werten Ihrer Organisation orientiert sind?

Zum Wissenstransfer und zur Entscheidungsfindung

8. Zu welchem Grade bezieht Ihre Organisation nicht im Management angestellte Mitarbeiter in strategische Entscheidungen ein?

9. Zu welchem Grade bezieht Ihre Organisation andere Interessengruppen/Stakeholder in strategische Entscheidungen ein?

(Dies umfasst Partnerorganisationen, die Nutzer der Dienstleistung oder andere Gruppen „Betroffener“ (z.B. die Öffentlichkeit im Allgemeinen, gewählte Repräsentanten der Öffentlichkeit, oder Bürgerbeteiligungsinitiativen)).

10. Wie würden Sie die Hierarchien in Ihrer Organisation beschreiben?

11. Zu welchem Grade stimmen Sie der Aussage zu, dass die Angestellten sich den Werten und Aktivitäten Ihrer Organisation stark verpflichtet fühlen?

12. Zu welchem Grade würden Sie die Angestellten Ihrer Organisation als proaktiv beschreiben (Einbringen eigener Ideen, Initiieren eigener Projekte, über das übliche Maß hinausgehendes Engagement für die Organisation)?

Zum Thema Steuerung

13. Wie viele verschiedene Trägerschaften oder Finanzierungsquellen hat Ihre Organisation?

14. Wie würden Sie die vertraglichen Arrangements und Berichterstattungspflichten beschreiben, die Ihre Hauptfinanzierung prägen?

Zum Thema Zusammenarbeit/Kooperationen

15. Bitte nennen Sie die wichtigsten Partner Ihrer Organisation und beschreiben Sie kurz Ihre Beziehung zu diesen. Welche Art von Informationen, Wissen, Gütern oder Ressourcen liegen bei diesen Partnern, die Sie für besonders wertvoll für Ihre Organisation erachten?

16. Würden Sie sagen, Ihre Organisation ist Teil eines „Netzwerks“ von verschiedenen Organisationen? Mit dem Wort „Netzwerk“ meinen wir formelle oder informelle Beziehungen zwischen mehr als zwei Organisationen. (falls nicht zutreffend entfallen die folgenden)

17. Zu welchem Grade stimmen Sie der Aussage zu, dass das Netzwerk die folgenden Eigenschaften hat?

Hohes Maß an Vertrauen

Hohes Maß an gemeinsamer Problemlösungskompetenz

Große Vielfalt hinsichtlich der Organisationsziele, Aktivitäten, Sektoren

Hohe Befähigung zu radikalen Veränderungen

Guter Zugang zu einer Auswahl verschiedener Vorzüge und Güter

Zu Angestellten und Freiwilligen

18. Zu welchem Grade stimmen Sie der Aussage zu, dass Ihre Organisation, insbesondere das Management, mit Blick auf das berufliche Profil, Fähigkeiten und Erfahrungen, Geschlecht, Behinderung, sexuelle Orientierung, Ethnizität, Religion eine heterogene Belegschaft aufweist?

19. Hat Ihre Organisation Kontakt zu Freiwilligen bzw. ist sie auf deren Engagement angewiesen?

20. Wie viele Freiwillige wirken (direkt oder indirekt) in Ihrer Organisation mit?

21. Welche Arten von Freiwilligenarbeit beinhaltet dies und welche Aufgaben übernehmen die Freiwilligen?

Herausforderungen und Druck von außen

22. Beinhaltet das Leitbild Ihrer Organisation sowohl die Funktion als Dienstleister als auch als Kampagnenorganisation?

a. Falls beides zutrifft: Wie geht Ihre Organisation mit möglichen Spannungen zwischen den beiden Funktionen als Kampagnenmacher und als Dienstleister um?

23. Zu welchem Grade stimmen Sie mit den folgenden Aussagen überein?

a. Die Organisation, für die ich arbeite ist dazu in der Lage, unabhängig von:
i. Marktdruck zu agieren. Mit Marktdruck meinen wir Druck durch Konkurrenz.

ii. Politischem Druck zu agieren.

iii. Finanziellem Druck zu agieren.

iv. Medialem Druck oder Druck der Öffentlichkeit zu agieren.

b. Welche Vor- oder Nachteile ergeben sich daraus?

Zusammenfassende Betrachtungen

24. Welche der zuvor genannten Faktoren spielen Ihrer Meinung nach eine entscheidende Rolle dabei, es der Organisation zu ermöglichen (oder ihr nicht zu ermöglichen), als Treibkraft in der Förderung von Radfahren und Fahrradkultur zu agieren (lokal oder bundesweit)?

Auflistung der Bereiche:

i. Der Stellenwert sozialer/ökologischer Bedürfnisse

ii. Werte

iii. Mitwirkung und Entscheidungsfindung (intern): Hierarchien, Mitarbeiterbeteiligung etc.

iv. Mitwirkung und Entscheidungsfindung (extern): Partnerschaften, Mitgliedschaften in Verbänden etc.

v. Verfügbarkeit und Austausch von Informationen
(Wissenstransfer und damit verbundener Aufwand)

vi. Netzwerke

vii. Diversität der Finanzierungsquellen

viii. Diversität der Expertise

ix. Freiwillige und deren Engagement

x. Funktion als Dienstleister und/oder Themenanwalt

xi. Agieren unabhängig von externem Druck und Belastungen

Ausblick

25. Wo stehen wir Ihrer Meinung nach aktuell im Hinblick auf die Förderung von Fahrradnutzung im öffentlichen Raum und der Fahrradkultur in Frankfurt? Welche zukünftigen Entwicklungen halten Sie für möglich?

9.3. Brno Appendix

Quotes from Interviewees for QCA analysis:

Interviewee 1: senior manager in the Department of Transportation at Brno City Municipality, Brno 2016, March 31st.

Interviewee 2: representative of civic association "Brno na kole", Brno 2016, April 5th.

Interviewee 3: head of civic association Rekola, Brno 2016, March 31st.

Interviewee 4: head of Studio for Alternative Transportation, Brno 2016, April 11th.

Interviewee 5: ex-deputy for technical area of Brno City Municipality and representative of political party ODS, Brno 2016, April 5th.

Public sector:

Brno City Municipality, Department of Transportation

5.1. Sector affiliation of major actors = 1

The Public Sector

5.2. Social needs orientation (H 1.1)= 0,75

The activities of the Department of Transportation of Brno City Municipality are based on legislation and instructions of political representation. The Department is oriented to different target groups in relation to respective task. (Interviewee 1)

"The Department, however, faces unpopular topics such as setting fares for urban public transport." (Interviewee 1)

5.3. Organisational value sets (H 1.2)= 0,75

The setting of the values of the Department of Transportation of Brno City Municipality is also based on the legislation and instructions of political representation. The group of stakeholders is extensive and it is involved into decision making as well into other activities, such as creation of mobility plans. (Interviewee 1)

5.4. Internal organisational culture (H 1.3)=0

The Department of Transportation of Brno City Municipality has fixed organizational structure and comes under the Deputy Mayor of Brno. The organizational culture as well as the organization structure result from legislation and instructions of political representation. "Approximately 75% of activities of the Department have character of

government administrative activities and only one fourth is represented by the self-governing activities. The fundamental decisions related to self-government are, however, made by the political representation. (Interviewee 1)

5.5. External organisational openness (H 1.4)=0,25

The Department aims at its openness and availability to stakeholders. It is involved into political discussion by principle and it enters to the discussion due to its expertise. There are also other actors taking part in activities of the Department, such as other departments of the Brno City Municipality, municipal enterprises or other institutions of the public sector (South Moravian region, The Ministry of Transportation, Road and Motorway Directorate of the Czech Republic, etc.). (Interviewee 1)

5.6. Transaction costs in detecting societal challenges and know-how (H 1.5)=0,5

The Department is attempting to share experiences with other sister cities within the frame of the CIVITAS group or the Association of Cities for Bikers. The membership of Brno within the bike-road Brno-Vienna is also important for the Department, especially because of the exchange of experiences of member municipalities and cities. (Interviewee 1)

5.7. Embeddedness in social/local context (H 1.6)=1

The embeddedness of the Department has mainly local character and results from the legislation and instructions of political representation. The Department is mostly oriented towards local issues. In this context, meetings and discussions with the public have local character. An example of such discussion could be a session about bikesharing or commenting on a mobility plan. Within the stakeholders from the cycling area, especially organization Brno na kole is significantly involved into the discussion.

(Interviewee 1)

5.8. Resource diversity (H 1.7)=0

Financial resources of the Department have public character above all, while potential private funding is represented by fees for services. *"The Department of Transportation is liable to budget cuts, what can represent significant limit of its activity."* (Interviewee 1)

The education of employees of the Department is mostly focused on transportation. *"Most of the employees of the Department have university education, only assistants have high school education."* (Interviewee 1)

5.9. The role of voluntary engagement (H 1.8)=0

The Department sometimes hires short-term interns, who are involved rather in administrative work. (Interviewee 1)

5.10. 'Unengaged' forms of volunteering (if applicable) (H 1.9)=0,25

"Previously mentioned interns are hired based on collaboration with respective schools (mostly from study programmes of administration and economics)." (Interviewee 1)

Their recruitment and training is task for a human resources department of Brno City Municipality. To interfere into these affairs is not under the competence of the Department.

(Interviewee 1)

5.11. Linkage between advocacy work and service provision (H 1.10)=0

The activities of the Department result from legislation and instructions of political representation. At the same time, the continuity of previous decisions and arrangements is important. The Department is active also in identifying and creating its own tasks. However, the tasks are also entered in form of instructions of political representation. (Interviewee 1)

5.12. Independence from external pressures (H 1.11)=0

The Department faces pressures of various groups of stakeholders, which speak out for support of the cyclo transport in the city (supporting bikesharing as well), or speak out against it. Particularly the organization Brno na kole is an advocate of the development of the cyclo transportation. Important role is played also by Nadace Partnerství. Contrary, those who are against the cyclo transportation are rather anonymous voices from public as well as some representatives of political groups, e.g. opposition parties. (Interviewee 1)

Civil society:

Brno na kole

5.1. Sector affiliation of major actors= 2

The organization is registered association. (Interviewee 2)

5.2. Social needs orientation (H 1.1)=1

The organization is generally oriented towards vulnerable participants of the transportation system. The topic can be unpopular within a particular group of people, who are not welcoming changes and represent convinced adversaries of the cyclo transport. *"The association looks at the same time at a wide range of the citizens that are considered [by the association] as transport promiscuous [changing means of transport]."*

5.3. Organisational value sets (H 1.2)=1

The organization does not have a code of ethics, nevertheless, the representatives were thinking about its creation and moreover decided not to cooperate with big corporations. There is a linkage mostly to local organizations. In terms of relation towards public, the association tries to be transparent from financial as well as factual point of view. This is also the reason, why membership meetings are opened to a public. (Interviewee 2)

5.4. Internal organisational culture (H 1.3)= 1

The organization has been always horizontal in its leadership. Most of the issues are debated consensually. The statutory authority is collective and the representatives of the formal management are so called *"the first among equals"*. (Interviewee 2)

The organization does not have paid employees. It tries to harmonize its steps with cooperating organizations, in relation to respective task or project (Nadace Partnerství Dejchej Brno). Some alliances are of long-term nature. The organization is also a member of association Czech cyclo-federation. (Interviewee 2)

5.5. External organisational openness (H 1.4)= 1

The stakeholders of the organization are mainly members (active as well as inactive), companies (from the area of cyclo transportation) and other nonprofit organizations. From more extent point of view, the citizens of Brno also belong to the group of stakeholders, as the organization strives for healthier environment to live in. (Interviewee 2)

The organization tries to involve wider public as well as its stakeholders into a cyclo transport related issues, mostly by regular events, such as bike rides with a purpose to

promote the cyclo transport as well as to draw attention to current failures of the transport infrastructure. (Interviewee 2)

5.6. Transaction costs in detecting societal challenges and know-how (H 1.5)= 0,25

The organization works as a fellowship of friends and fellows, who share a common interest of spreading the cyclo transport in the city. All members have their own job or studies in different fields. Experiences and knowledge obtained outside of activities of the organization are used also for purposes of the organization. Besides its members, the organization is supported by other entities, such as Nadace Veronica (material donation), Kabaret Špaček (space for meetings), Nadace Partnerství (support while organizing activities). (Interviewee 2)

The organization is a member of the National Cycling Federation, however, there are not many benefits linked to this membership. (Interviewee 2)

5.7. Embeddedness in social/local context (H 1.6)= 1

"... for sure there are people, who hate the organization and accuse it of lies, they describe it as an alliance of cyclo-terrorists and cyclo-fascist. It is, however, a small group of people in Brno. I rather feel ordinary trustworthiness, which is based on nonexistence of "scrapes"". (Interviewee 2)

Life of the majority of members of the organization is closely connected to Brno. That is the reason why the activities of the organization are mostly directed towards development of cyclo transport in Brno (commenting on a mobility plan, creation of cyclo maps, realization of bike rides). (Interviewee 2)

5.8. Resource diversity (H 1.7)= 1

The organization does not have an individual fundraising. The financial sources are represented by membership fees, donations of different small supporters and fans of bike rides. Currently, the organization does not have other regular sources. (Interviewee 2)

The organization does not have any paid employees. It is rather a fellowship of enthusiasts, who are participating on activities in their free time, without financial reward. The situation might change together with a potential success in a current grant procedure. (Interviewee 2)

5.9. The role of voluntary engagement (H 1.8)= 1

The organization recruits its volunteers mostly through its friends and acquaintances, eventually through bike rides and bike meetings. A facebook profile or narrow mailing list is also used for recruiting potential helpers. Volunteers help to the organization mainly with preparation of traditional cyclo events. They are mostly long-term volunteers, who participate without any financial compensation. (Interviewee 2)

5.10. 'Unengaged' forms of volunteering (if applicable) (H 1.9)= 0

The organization does not show any form of unengaged volunteering, since all volunteers are personally involved in activities of the organization. (Interviewee 2)

5.11. Linkage between advocacy work and service provision (H 1.10)= 1

The activities have mostly character of advocacy. However, the spectre of the activities might change in relation to a potential success in a current grant procedure. The activities of the organization are given, regularly repeated, so the organization actively seeks for new ones. They also reflect the evolution of the field and reflect new topics in their activities. (Interviewee 2)

The organization is directly involved into political debate on various levels. It attempts to meet deputies for transportation at least twice within their election period. In relation to pre-election meetings the organization strives for confrontation with candidates, in relation to cyclo transport topic. It also tries to positively influence planning of public space. (Interviewee 2)

5.12. Independence from external pressures (H 1.11)= 1

The area of activities of the organization is not liable to budget cuts. The organization feels neither a competition in the field, nor external pressures arising from public or private sectors. (Interviewee 2)

Rekola

5.1. Sector affiliation of major actors = 5

Rekola organization currently functions as a nonprofit association, which is, however, planning a change of its legal form to limited company, more precisely a social enterprise, which does not have to be necessarily nonprofit organization. (Interviewee 3)

5.2. Social needs orientation (H 1.1)= 0,75

" Rekola is mainly focused on support of bikesharing, development of cyclo infrastructure in cooperation with the City, promotion of cycling and healthy lifestyle and creation of relation with the public space. The organization attempts to fulfil the HateFree idea. It does not cooperate with any vulnerable group of citizens. They consider their activities as politically sensitive, unpopular, maybe on the edge of activism. " (Interviewee 3)

They intend to broaden the spectre of their activities on the topic of use of shabby spaces of the city. (Interviewee 3)

The organization does not work with the group of people under 18 years of age, since there is a legal obligation to use bicycle helmet that they are not able to provide. Participation of foreigners is problematic, because of language barriers. (Interviewee 3)

5.3. Organisational value sets (H 1.2)= 1

" [Rekola organization is based on] wide spectre of values: equal and active approach, recycling, positive attitude towards life, towards the city itself, aid to the weaker."
(Interviewee 3)

Rekola is a community thing based on trust. (Interviewee 3)

5.4. Internal organisational culture (H 1.3)= 1

The organizational structure of Rekola is opened. Within Brno, the organization works as horizontally structured. The decision-making is realized through voting during bigger member meetings. Those who want and are actively engage in the project (within operational activities) are involved into decision-making. The headquarters from Prague has important vote in the decision process. (Interviewee 3)

5.5. External organisational openness (H 1.4)=1

Direct stakeholders are represented by members of Rekola, who directly use the system of bikesharing and by volunteers, who are involved into service activities. From the wider range of group of stakeholders, these are mostly citizens of the city, who profit from the healthy way of transport. (Interviewee 3)

The local branch of Rekola [in Brno] is thinking about other activities, which would have an impact on the public space in Brno. However, projects above the scope of their primary activities have not been launched yet. (Interviewee 3)

5.6. Transaction costs in detecting societal challenges and know-how (H 1.5)=0,25

Sharing of experience takes place primarily within the organization Rekola and its complex organizational structure across the Czech Republic. Rekola collaborates with other entities within Brno (e.g. organizations such as Brno na kole), whose experience in cyclo transport is used. The organization also benefits from the experience and skills of its members and supporters, who work on a voluntary basis or on the basis of short-term contracts. (Interviewee 3)

5.7. Embeddedness in social/local context (H 1.6)= 1

The organization wants to be more involved in activities and revival of public space. Now, for instance the organization participates in the organization of the festival Setkávání (students of theatre schools). However, the main activity still remains in bikesharing in Brno. (Interviewee 3)

5.8. Resource diversity (H 1.7)= 1

The organization has a number of sympathizers. From the financial supporters, especially department Brněnské komunikace of the Brno City Municipality is currently important. Previously, the organization was also supported by local universities (Masaryk University,

Brno University of Technology). The support was based on a contractual agreement. The contributions collected in this way are used primarily to cover the operating costs of the organization. (Interviewee 3)

5.9. The role of voluntary engagement (H 1.8)= 1

The organization has about 15 to 20 volunteers, who are mainly active in services of shared “pink bicycles”. The organization has a minimum number of working contractual relations - 8 approximately. Volunteers are recruited mainly from members of the association and subsequently, they do their activities without any financial reward. (Interviewee 3)

5.10. ‘Unengaged’ forms of volunteering (if applicable) (H 1.9)= 0

The organization does not have unengaged forms of volunteering; all volunteers are personally involved in activities of the organization. (Interviewee 3)

5.11. Linkage between advocacy work and service provision (H 1.10)= 1

Activities of the organization have character of advocacy work as well as service provision. In the past, mainly advocacy prevailed, however, currently the service provision is more important for the organization. (Interviewee 3)

From activities of the organization political values can be detected, however, the organization itself is not involved in the political debate. The organization supports its close topics at occasional meetings and negotiations, for example sessions of group for development of mobility in Brno.

5.12. Independence from external pressures (H 1.11)= 1

The organization currently does not operate on the basis of grants, for that reason is not directly dependent on the possible curtailment of grants. Some pitfalls may be seen in termination of the cooperation agreement with the city organization Brněnské komunikace, on the basis of which the organization is now supported. (Interviewee 3)

An obstacle of the development of activities of Rekola was that the city centre used to be closed for the cyclists. However, the centre has been accessible in recent years (since 2015, partly due to a change in political representation of Brno and partly thanks to long term the efforts of Brno na kole). (Interviewee 3)

The organization does not feel any competition. From the public sector it feels particularly support - as they have an interest in the area. (Interviewee 3)

Private sector:

Alternativní dopravní studio (ADOS)

5.1. Sector affiliation of major actors = 3

Alternativní dopravní studio is a representative of private profit sector. (Interviewee 4)

5.2. Social needs orientation (H 1.1)= 0

Both representatives of the organization are primarily project architects and their activities are going in this direction in the long term. Their interest is to offer professional results based on their own expertise and experience from previous projects. Within their activities they focus neither on vulnerable people nor engage into politics. *"... the topic that we devote to is unpopular before elections."* (Interviewee 4)

5.3. Organisational value sets (H 1.2)= 0

Within Alternativní dopravní studio they do the work they like, which they trust and which has a meaning to wider society. (Interviewee 4)

Municipalities and cities that use services of the organization belong to its group of stakeholders as well as citizens and cyclists, who subsequently benefit from these services. In case of Brno, between 2010 and 2012, the organization played a role of cyclo-coordinator, who discussed individual solutions of "cyclogenerel" with the public. The organization strived for factual and expert argumentation. (Interviewee 4)

5.4. Internal organisational culture (H 1.3)= 0,75

The organizational structure is rather open. It comes mainly from the fact that the director is self-employed and has just four employees, with whom he consults major decisions. (Interviewee 4)

5.5. External organisational openness (H 1.4)= 0,25

The organization is engaged into the society in the scope of its contracts on services, or in the frame of consultations. Employees share the same interest for the topic also outside of work. (Interviewee 4)

5.6. Transaction costs in detecting societal challenges and know-how (H 1.5)= 0,75

The organization is engaged in a broader discussion in rather limited extent, which is mainly based on the scope of its contracts. (Interviewee 4)

The organization as a whole is probably not involved in any platform, however, its employees are rather active even beyond their work duties. In the period from 2010 (until 2012), the representative of the organization held the post of cyclo-coordinator of Brno and also was a member of the Committee for Bicycle Transport of the Ministry of Transport. (Interviewee 2; Brněnský cyklo-koordinátor (2010))

5.7. Embeddedness in social/local context (H 1.6)= 0,25

The organization is embedded in the society in rather limited extent, which is mainly based on the scope of its contracts. These lie in dealing with the traffic situation in places

of contracting authority, i.e. municipalities and cities in the Czech Republic. (Interviewee 4)

5.8. Resource diversity (H 1.7)= 0

Financial resources of the organization are realized in the form of revenue for the work. Employees of the organization are mainly university graduates. Overall, there are four employees and the director working in the organization. (Interviewee 4)

5.9. The role of voluntary engagement (H 1.8)= 0,25

The organization has a minimum of volunteers, it recruits them only on short-term internships and eventually helping them through consultation of their theses. (Interviewee 4)

"If the intern does well, there is a potential job offer." (Interviewee 4)

5.10. 'Unengaged' forms of volunteering (if applicable) (H 1.9)= 0,75

Organization is not against accepting interns nor are there any obstacles that would prevent the organization to do so. Potential volunteers represent unpaid staff. Interns are recruited mainly from university students who consult with the organization their thesis. However, interested interns appear rather rarely. (Interviewee 4)

5.11. Linkage between advocacy work and service provision (H 1.10)= 0

The organization provides primarily commercial services of a project architect office. (Interviewee 4)

5.12. Independence from external pressures (H 1.11)= 0

Maybe competition can be considered as an external pressure, as it occurs naturally in the field. (Interviewee 4)

"The field can be controversial and it often happens right within the pre-election political discussions." (Interviewee 4)