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Mobile Lab on Sharing in Malmö

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Mobile Lab on Sharing in Malmö

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Mobile Lab Report

International Institute for Industrial Environmental Economics (IIIEE), Lund University
Lund, Sweden, August 2019



Funded by the Swedish Research Council Formas, the aim of the **Sharing and the City** project is to examine, test and advance knowledge on the role of city governments in the initiation, implementation and institutionalisation of sharing organisations across cities in Europe. Case study cities include Malmö, Gothenburg and Amsterdam. The research will produce a step-change in sustainability science via a multi- and interdisciplinary study of the sharing economy. Learn more at: www.sharingandthecity.net



Funded by Vinnova, the **Sharing Cities Sweden** programme aims to put Sweden on the map as a country that actively and critically works with the sharing economy in cities. The objectives of the programme are to develop world-leading test-beds for the sharing economy in Stockholm, Gothenburg, Malmö and Umeå, as well as develop a national node to significantly improve national and international cooperation and promote an exchange of experience on sharing cities. Learn more at: www.sharingcities.se



Funded by the Swedish Research Council Formas, the aim of the **Urban Reconomy** project is to advance knowledge about urban sharing and collaborative production schemes and their potential contribution to resource efficient economy in cities. Case study cities include Malmö, Helsinki and Copenhagen. This project is of multidisciplinary nature as it conflates sustainability and organisational studies in urban contexts with institutional entrepreneurship.

Title: Mobile Lab on Sharing in Malmö

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Date: August 2019

Cover photo: Municipal bike sharing scheme Malmö by Bike (by Yuliya Voytenko Palgan)

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FORMAS



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Sharing Cities Sweden is carried out within Viable Cities, a Swedish Innovation Programme for smart sustainable cities, jointly funded by the Swedish Innovation Agency (VINNOVA), the Swedish Energy Agency and the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS).

Executive Summary

Cities are seen as one of the leading forces in making our societies sustainable and resource efficient. The latest trends of sharing homes, cars, bikes, tools and other goods are fast entering our urban lives. The sharing economy is a consumption-production mode in a city, in which value is generated through transactions between peers or organisations that offer access to their idling or underutilised rivalrous physical assets. These assets are made available to individuals in processes often mediated by online platforms (Mont, Voytenko Palgan, and Zvolska 2019).

Examples of sharing economy organisations (SEOs) include bicycle and car sharing initiatives, tool and clothes libraries, and short-term accommodation rentals between peers. The activities of SEOs are often cited as solutions to urban sustainability challenges, but their contribution to sustainability, resource efficiency and the circular economy has not been systematically evaluated. To build up an evidence base, and support sustainable sharing, a systematic and comparative analysis of the role of cities in sharing is needed.

This report presents the outcomes of a one-day mobile lab on urban sharing in Malmö, which was arranged on 7 March 2018 within the framework of the Sharing and the City project, with support from the Sharing Cities Sweden programme and the Urban Reconomy project. A mobile lab is a collaborative process of conducting in-situ analysis by a research team that allows analysis of the study object, *the sharing economy*, in its context.

Sharing in cities becomes institutionalised through two principal sets of dynamic processes. The first is a top-down institutionalisation dynamic when a city government employs its agency to promote or inhibit certain SEOs. To do so, it undertakes one or several of the following roles: regulator, provider, enabler and self-governor. The second set of institutionalisation processes of sharing in cities is bottom-up, resulting from institutional work by SEOs. These two sets of institutionalisation processes provided input to research themes and related interview questions explored during the mobile lab in Malmö.

The mobile lab included planning meetings, development of research themes and questions to investigate, preparation of interview guides, one day of empirical data collection, written post-lab reflections of 500-1000 words and photos by each team member, processing the collected material, post-lab meetings to discuss reflections, and writing a mobile lab report.

The mobile lab team comprised seven persons representing academia, the City of Malmö and an NGO (Bike Kitchen). During the mobile lab in Malmö, the team visited and interviewed an organisation for swapping clothes (Swop Shop), a tool library (Garaget), and the Streets and Parks Department at the City of Malmö, and held a meeting with an expert on the sharing and collaborative economy from a think tank (Drivhuset) based at Malmö University. After the mobile lab, all its participants documented and shared their reflections of the day, which formed the basis for this report.

The mobile lab in Malmö was innovative in terms of methodology, as it included a heterogeneous group of participants consisting of academic and non-academic actors, which turned out to be beneficial for the data collection and reflection process.

Several conclusions can be drawn from the mobile lab in Malmö in terms of content:

1. The City of Malmö sees sharing practices as a way to achieve sustainability goals or tackle its urban sustainability challenges, such as environmental pollution, congestion, lack of space, social integration, equity and justice, and unemployment.
 2. The sharing practices with which the mobile lab group engaged are targeted at altering normative institutions of ownership and consumption patterns.
 3. National taxation systems and regulations appear to play a significant role in creating barriers to the sharing economy in cities in general, and in Malmö in particular. Our current accounting systems in society need to be changed to accommodate the new forms of consumption activities.
 4. The potential for positive economic and social impacts from the sharing services seems evident, but the positive environmental benefits are difficult to assess.
 5. Collaborations between city governments and business-oriented sharing organisations are problematic, as these may contradict free market competition rules. One way to address this challenge is through the development of experimental projects where various actors, including city governments, sharing organisations, academia and non-governmental organisations (NGOs), collaborate on testing new sharing solutions.
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1. Introduction

Cities are seen as one of the leading forces in making our societies sustainable and resource efficient. The latest trends of sharing homes, cars, bikes, tools and other goods are fast entering our urban lives. The sharing economy is a consumption-production mode in a city in which value is generated through transaction between peers or organisations that offer access to their idling or underutilised rivalrous physical assets. These assets are made available to individuals in processes often mediated by online platforms (Mont, Voytenko Palgan, and Zvolška 2019). Examples of sharing economy organisations (SEOs) include bicycle and car sharing initiatives, tool and clothes libraries, and short-term accommodation rentals between peers. The activities of SEOs are often cited as solutions to urban sustainability challenges, but their contribution to sustainability, resource efficiency and the circular economy has not been systematically evaluated. To build up an evidence base and support sustainable sharing, a systematic and comparative analysis of the role of cities in sharing is needed.

The Sharing and the City project aims to examine, test and advance knowledge on the role of city governments in the initiation, implementation and institutionalisation of the sharing economy organisations across cities in Europe. The project objectives are: 1) INITIATION: To examine how city governments engage with sharing based on their sustainability visions and strategies; 2) IMPLEMENTATION: To study the implementation channels cities employ to engage with sharing; 3) INSTITUTIONALISATION: To investigate the role of cities in the institutionalisation of sharing. The case study cities include Malmö and Gothenburg in Sweden, and Amsterdam in the Netherlands.

The Sharing Cities Sweden programme aims to put Sweden on the map as a country that actively and critically works with the sharing economy in cities. The purpose of the programme is to strengthen Sweden's work for global sustainability goals, and to strengthen Sweden's competitiveness by developing new services and new companies for domestic and export markets. In the programme, sharing services will be developed in test-beds in four Swedish cities (Stockholm, Gothenburg, Malmö and Umeå), and their associated risks and opportunities will be tested and evaluated. The programme is being implemented in a broad collaboration between business, the public sector and academia.

The Urban Reconomy project aims to analyse how sharing and collaborative production schemes are organised, their contribution to circular economy, and how they can be harnessed through innovative institutional constellations and entrepreneurial processes in diverse urban contexts. The project aims to contribute to the field of institutional entrepreneurship and advance the societal goal of building a resource-efficient Europe. Case study cities include three Nordic cities: Malmö (Sweden), Helsinki (Finland) and Copenhagen (Denmark). Snapshot examples are drawn from across Europe, including London (UK), Berlin (Germany) and Barcelona (Spain).

This report presents outcomes of a one-day mobile lab on sharing in Malmö, which was arranged on 7 March 2018 within the framework of the Sharing and the City project, and with support from the Sharing Cities Sweden programme and the Urban Reconomy project (Fig. 1). A mobile lab is an innovative data collection method with roots in ethnography, which can be described as a collaborative process of conducting in-situ analysis by a research team that allows analysis of the study object – in this case *the sharing economy* – in its context.



Figure 1. Mobile lab on Sharing in Malmö – visit to Swop Shop

2. Approach

2.1 Theoretical frameworks

Sharing in cities is becoming institutionalised through two principal sets of dynamic processes (Fig. 2). The first is a top-down institutionalisation dynamic when a city government employs its agency to promote or inhibit certain SEOs. To assess the roles that cities play when governing or interacting with SEOs, the Sharing and the City project has developed a theoretical framework. The framework identifies four major roles of cities: as a regulator, a provider, an enabler and a consumer (Fig. 3). It was tested on the case studies of London and Berlin (Zvolska et al. 2018; Voytenko Palgan, Mont, and Zvolska 2019), and refined during mobile labs in Malmö, San Francisco and Gothenburg.

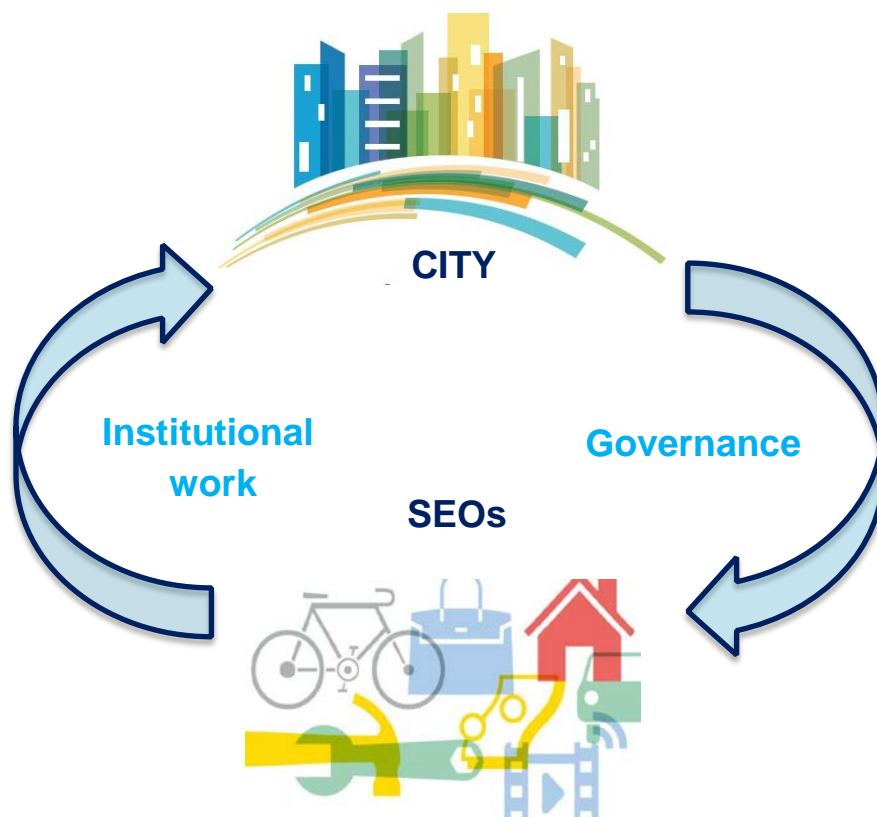


Figure 2. Dual urban sharing dynamics

The second set of institutionalisation processes of sharing in cities is bottom up, and is a result of the institutional work by SEOs (Fig. 2). The principal investigator (PI) of the Sharing and the City project has been engaged in advancing and adjusting the framework of institutional work by Lawrence and Suddaby (2006). This was done by proposing a framework of mechanisms for creating and disrupting

institutions adjusted to sharing in cities with case studies of Malmö, London and Berlin (Zvolska, Voytenko Palgan, and Mont 2019).

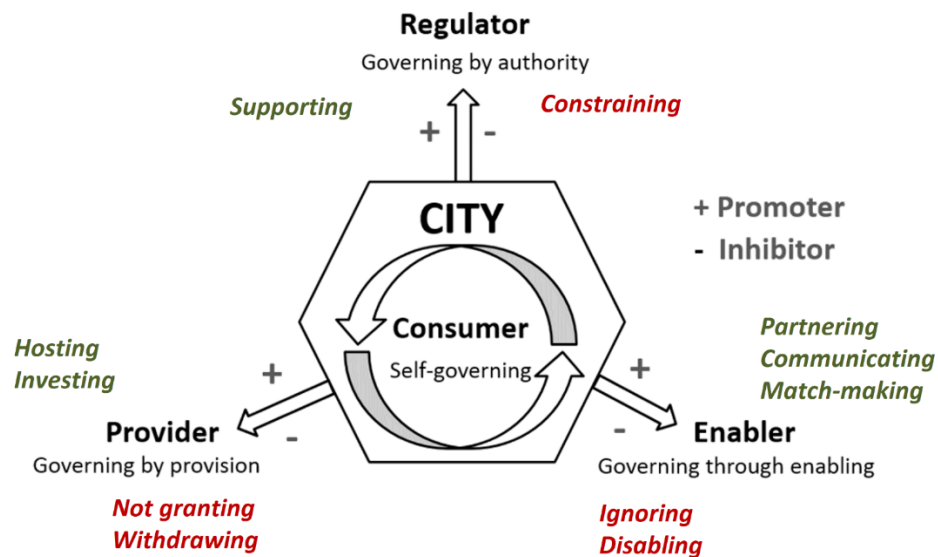


Figure 3. Governance modes for cities

These two sets of institutionalisation processes provided input to research themes and related interview questions explored during the mobile lab in Malmö (Section 2.3).

2.2 Mobile lab approach

The term 'mobile lab' was coined by Harriet Bulkeley (Durham University) and Johannes Stripple (Lund University) to represent a type of research activity where an interdisciplinary group of researchers visits various sites to study a certain phenomenon in an urban context. According to Bulkeley, the method is based on a concept of infra-labs (infrastructure labs) put forward by Simon Marvin (Sheffield University) and colleagues in the 2000s (Bulkeley 2016). Infra-labs implies a process of collectively researching infrastructure-related controversies in urban contexts.

In the context of this work and this report, the mobile lab is an approach that comprises a collaborative process of conducting in-situ data collection and reflexive analysis¹ by a research team focusing on actors directly and indirectly involved in sharing in cities. These may include social and business entrepreneurs, users, city governments, incumbent companies, civil society organisations and NGOs working for or against urban sharing.

The Sharing and the City project and the Sharing Cities Sweden programme are conducting mobile labs in several cities, including Gothenburg, Umeå, Stockholm and Amsterdam. These cities offer a diversity

¹ The reflexive analysis is carried out by a research team from diverse backgrounds, and includes reflections of the interviewed stakeholders.

of drivers, socio-cultural and economic contexts, engaged actors and levels of maturity that all affect the processes for institutionalisation of sharing.

2.3 Mobile lab in Malmö

The mobile lab in Malmö included planning meetings of the mobile lab team, development of research themes and questions to investigate, preparation of interview guides, one day of empirical data collection, written post-lab reflections of 500-1000 words and photos by each team member, processing the collected material, post-lab meetings to discuss reflections, and writing a mobile lab report.

Methods for data collection included in-depth semi-structured interviews and participant observations with audio- and video-recording of data, as well as photos and note taking. Methods for data analysis included data coding and rationalising from field notes, interview transcripts, individual reflections and group discussions.

Preparations for the mobile lab in Malmö included a review of literature on the sharing economy, sharing in cities, sustainable urban governance and experimentation, and neo-institutional theory (including the concepts of institutional work, institutional logics, institutional complexity and legitimacy building). The sharing economy landscape in Malmö was reviewed and key sharing economy initiatives were mapped.

The literature included academic publications, such as papers presented at four International Workshops on the Sharing Economy (IWSE) and at the Sharing Cities Symposium, scientific reports, and grey literature, including periodicals (e.g. Forbes, The Financial Times, The Guardian), business reports, and websites of SEOs in case study cities. In addition, eight in-depth interviews were held with founders and operational representatives from Malmö-based SEOs, representatives of the city government, and experts on sharing in Malmö. These activities helped to scope research themes and develop interview questions used during the mobile lab in Malmö (Table 1).

The mobile lab on the sharing economy in Malmö was arranged on 7 March 2018. The mobile lab team comprised seven persons representing academia, the City of Malmö and an NGO, Bike Kitchen. During the mobile lab, the team visited and interviewed an organisation for swapping clothes (Swop Shop), a tool library (Garaget), and the Streets and Parks Department at the City of Malmö, and had a meeting with an expert on the sharing and collaborative economy from a think-tank, Drivhuset, which is based at Malmö University (Table 2).

After the mobile lab, all its participants documented and shared their reflections of the day, which form the basis for this report. The mobile lab in Malmö was innovative compared to many other mobile labs conducted by IIIIEE researchers, as it had brought together a heterogeneous team of people representing different sectors – not only academia.

Table 1. Interview guide for the mobile lab in Malmö

Group	Research themes	Interview questions
1	1. History, motivations and operations	1.1 Where did the idea for you to work with sharing/borrowing/renting/swapping come from? 1.2 How do you engage with sharing/borrowing/renting/swapping in your everyday life?
	2. The sharing economy at a glance and the work by Malmö municipality	2.1 What is the role of sharing/ borrowing/renting/swapping in Malmö today, in your view? 2.2 When reflecting on your working and personal experience, in what ways do you see the City of Malmö engaging with sharing/borrowing/renting/swapping?
2	3. Drivers and barriers to sharing	3.1 What drives people to share/borrow/rent/swap in Malmö, in your view? 3.2 What constrains people from sharing/borrowing/renting/swapping in Malmö, in your view?
	4. Work for sustainability and city challenges	4.1 What are the main sustainability (economic, social and environmental) issues that you try to address in your work? 4.2 How do these issues relate to broader sustainability challenges facing the City of Malmö (e.g. economic development, social inclusion, employment, climate change, waste generation etc.)?
3	5. Collaboration and collective action for sharing	5.1 Which organisations or actors do you collaborate with in your work relating to sharing/ borrowing/renting/swapping? 5.2 What are the benefits of such collaborations? What are the associated challenges?
	6. Citizens and sharing as a social norm	6.1 Who are your users/customers? In which ways do you work with Malmö citizens? 6.2 What is your perception of how well people understand the concepts of sharing/ borrowing/renting/swapping in Malmö?

Table 2. Detailed Agenda for Mobile Lab on Sharing in Malmö

Time	Activity	Person	Address
8:30	Meet for a coffee and planning of the day	Sharing Cities Team	Espresso House, Stortorget 7, Malmö
9:00-10:15	Clothes swapping boutique Swop Shop	Jane Olsson	Själbodgatan 2C
<i>Walk 15 min</i>			
10:45-11:45	Municipal bike sharing initiatives	Olof Rabe	Stadshuset, August Palms plats 1
<i>Walk 7 min</i>			
12:00-12.50	Lunch meeting with a sharing activist from Drivhuset (MAU)	Kim Gerlach	Grand Öl och Mat, Monbijougatan 17
12:50-13:15	Group reflections of the day	Sharing Cities Team	
<i>Walk 20 min</i>			
13:45-15:00	Library of books and things Garaget	Gustav Ekman	Lönngatan 30

3. Activities

3.1 Clothes swapping boutique Swop Shop

Swop Shop (Fig. 4) is a boutique in Malmö that sells and exchanges vintage, brand, unique and modern clothes, accessories and shoes for women, men and children. Customers may leave up to ten items from their wardrobe at a time, and pick up other items in the Swop Shop. It uses alternative currency in the form of a points system, 'green heart', to value garments and accessories and to display the items' price (Fig. 5). Swop Shop positions its business model as "an easy, sustainable and economic way to update your wardrobe" (Swop Shop 2018).

The manager of Swop Shop values the items when she receives them in terms of their quality, price and suitability for swapping. Her aim is to make it as easy as possible to attract her customers and keep them using the service. One of the key issues is to set a fair price for those depositing the clothes and those picking up new garments. While very passionate about what she does, the manager has overcome many challenges over the last five years since the start of the business. Swop Shop has not received any external support for developing its business concept, so has to find its way independently.

According to the Swop Shop manager, attracting and maintaining customers is a challenge, as swapping is associated with a certain type of behaviour – "one has to be a swapper". Swapping requires time and attention, as it is very rare that a customer comes to the Swop Shop and finds a garment in the precise style and size, and "just what they want". The manager is optimistic about the future of swapping as, potentially, any consumer item can be swapped. However, she, thinks that "it will be at least five years more before this becomes common, if it doesn't speed up the municipality nudging people", so identifying the role of the City of Malmö in the sharing economy as important.



Figure 4. Swop Shop – a clothes swapping boutique in Malmö



Figure 5. Swop Shop – a female clothes selection

3.2 Municipal bike sharing initiatives

The mobile lab team visited Malmö City Hall (Fig. 6) to discuss municipal bike sharing initiatives. The City of Malmö works with bike sharing in two principal ways: one is oriented at municipal employees and the other at Malmö citizens. The Service Department at the City of Malmö owns 1800 bikes and 300 electric bikes, which it leases to other municipal departments for employees when they are on duty. There is a similar scheme for car-pooling within municipal departments.

The City of Malmö used to offer electric bikes (e-bikes) for citizens living outside the city to try out for three weeks (Wickberg 2017). The users were interested in purchasing these bikes after the trial period, so the City of Malmö established a collaboration with Ecoride Bike Store by leasing e-bikes from them and offering these e-bikes to the citizens for eight weeks rental for free. After the trial period people could purchase the e-bikes. The purpose of this project is to change the norm of owning and/or using a car by promoting e-bike use, to tackle the rather new issue of limited space in the city as well as its environmental challenges. As the next step, the City of Malmö is discussing leasing e-bikes from a company and letting them to companies. According to the project manager (Fig. 7), the municipality is also looking into ways it could support a car sharing company that would also offer e-bike sharing to its users; some initial moves have been made.

Bike and car sharing is becoming integrated in the planning of new housing in Malmö. For example, a 'bicycle house' Ohboy! in the Western Harbour district, which is well-known for its sustainable innovations, hosts a car and a bike pool under its roof (Boplats Syd 2018). The bike pool includes

different kinds of bikes, including cargo and family bikes. This solution has allowed the developers to avoid building extra car parks – a trend that is becoming increasingly popular in Malmö.



Figure 6. Mobile lab team at Malmö City Hall (Stadshuset)



Figure 7. Project manager Olof Rabe describes municipal bike sharing programmes

3.3 Drivhuset and sharing in Malmö

The mobile lab team had a meeting with an environmental and sharing activist, Kim Gerlach, who works at Drivhuset in Malmö (Fig. 8). Drivhuset is a meeting place for people who want to develop business

ideas and learn more about entrepreneurial tools. They help with practical guidance on how to be an entrepreneur. Drivhuset supports a mix of sharing economy activities, including helping the City of Malmö become a sharing city as part of the Shareable network, and mapping sharing initiatives in Malmö through a MapJam.



Figure 8. Meeting with a sharing and environmental activist Kim Gerlach from Drivhuset (below left)

3.4 Garaget: Library of books and things

Garaget (Fig. 9) positions itself as an innovative and progressive library that does not focus solely on books but rather on things that people in the surrounding community are interested in renting. These include tools, board games, musical instruments and creative space for adults and kids. Garaget also offers its space for various activities in the evenings and at weekends (Fig. 10). Garaget has been criticised for its innovativeness regarding media by those holding conservative views on what libraries should and should not do. Garaget employs eight people, but only two are librarians. According to the development secretary of Garaget, this is a very particular constellation of skills that a conservative library would be unlikely to accept.

Garaget works strongly with creating and maintaining its identity as a space for everyone, and the services provided are co-created with its users. The organisation sets its goals based on user input into their biannual survey. The organisation has a very strong social agenda, which is shown through its vision, everyday activities (they conduct regular evaluations with their users, where they collect user feedback and adjust their activities in line with user preferences) and geographical location (area with a

high share of immigrant population, low employment rates, low wages, and high crime levels). They also give their users the opportunity to volunteer, e.g. there are English and Arabic language cafes led by Garaget users on a voluntary basis. Garaget works with children to educate them on leisure time activities.



Figure 9. Garaget – a library for books and things



Figure 10. Inside Garaget library

4. Reflections

The participants in the mobile lab in Malmö were divided into three groups, each focusing on two research themes (Table 1): 1) History, motivations and operations; 2) The sharing economy at a glance and the work by Malmö municipality; 3) Drivers and barriers to sharing; 4) Work for sustainability and city challenges; 5) Collaboration and collective action for sharing; 6) Citizens and sharing as a social norm. The groups reported reflections from the mobile lab based on the research themes and also identified 1-2 things that surprised or excited them most. The answers to the questions under each theme, which are based on reflections from mobile lab members, are provided in the following sub-sections.

4.1 History, motivations and operations

Under this research theme two interview questions were asked:

1. *Where did the idea for you to work with sharing/borrowing/renting/swapping come from?*
2. *How do you engage with sharing/borrowing/renting/swapping in your everyday life?*

The motivations for establishing Swop Shop (Fig. 11) were based on personal experiences of the owner with buying, owning and sharing clothes. In particular, accumulation of dozens of kilograms of clothes in her own wardrobe stimulated the Swop Shop owner to explore new ways of consuming. The owner of the shop said that much had been learned while the shop was developing, its points system for swapping, and the ways to establish an alternative way of exchanging clothes.



Figure 11. Swop Shop in Malmö

E-bike sharing initiatives by the City of Malmö have developed as a way to fast-track market development in Malmö. A general observation is that after people try out and experience e-bikes they are quite positive in surveys. Interestingly, while there are intentions to connect extended e-bike use to

the challenges of space and environmental pollution in the city, the motivations for the City of Malmö to support e-bikes seemed rather vague.

Garaget grew organically in the space left empty when a repair shop for electric buses and trains was shut down. The neighbourhood had no cultural activities or libraries. It was the time when the City of Malmö started talking about participation and democracy, and inviting people to participate in urban politics. A firm from Stockholm held several workshops, to which citizens, businesses, associations and other community actors were invited, and asked people what they wanted the space to represent. In the end, a choice was made involving a library, which also hosts a coffee shop, a public living room for people to sit down and relax, as well as an open stage for events.

4.2 The sharing economy at a glance and the work by Malmö municipality

Under this research theme two interview questions were asked:

1. *What is the role of sharing/ borrowing/renting/swapping in Malmö today, in your view?*
2. *When reflecting on your working and personal experience, in what ways do you see the City of Malmö engaging with sharing/borrowing/renting/swapping?*

An interesting observation from Swop Shop is that swapping clothes takes time for customers. If customers in their everyday lives have little time, then swapping will not be a priority. A driver for many customers is awareness of the negative impacts of conventional clothes production. A discussion started around how best to 'design' swapping of clothes – many locally-embedded stores, whole malls for swapping, online swapping or integrating swapping into existing clothes stores. Swapping of clothes has developed in Malmö over time, but it remains only a very small niche. Five years ago, the founder of the Swop Shop asked the City of Malmö for support, but without success, so she decided to develop the concept herself.

The City of Malmö works with bike and e-bike sharing in two principal ways: offering bike pools to municipal employees on duty and offering bikes for rental, citizen trials, and through bike pools in the new housing developments (section 3.2). For e-bikes to expand in Malmö, investment is needed in biking infrastructure. Malmö and Lund are already leading cities on biking and e-bikes, but much more can be done. Barriers for e-bikes include the price, security of parking, and possible accidents. E-bike sharing can help overcome the price and security concerns.

Drivhuset is helping to organise a MapJam as part of helping the City of Malmö become a sharing city. MapJam events bring communities together in cities around the world to connect the dots and map grassroots sharing projects, cooperatives, community resources, and urban commons.

Being a library, Garaget is formally a part of the City of Malmö, but has also experimented with sharing, including tools, musical instruments and clothes (Fig. 12). The sharing of clothes was also considered an educational exercise in helping people to learn about sustainability impacts of the clothes industry. The sharing of tools has been a learning process for Garaget on how to manage sharing of (expensive) products.



Figure 12. Accessories for sewing at Garaget in Malmö

4.3 Drivers and barriers to sharing

1. *What drives people to share/borrow/rent/swap in Malmö, in your view?*
2. *What constrains people from sharing/borrowing/renting/swapping in Malmö, in your view?*

The mobile lab team identified drivers and barriers for the sharing of clothes, bikes, tools and other items. These are summarised in Table 3.

Table 3. Drivers and barriers for sharing in Malmö: Experiences from Swop Shop, city led (e)bike sharing and book and tool library Garaget

<i>Sharing economy organisation</i>	<i>Drivers</i>	<i>Barriers</i>
Swop Shop	<ol style="list-style-type: none"> 1. Availability of unused clothes 2. Low quantity over high quality 3. Only clothes that people want are kept(stock-waste elimination) 4. Preference for a reduced clothing budget 5. Easy accessibility and visibility of the shop (high street location) 	<ol style="list-style-type: none"> 1. Availability of customers' time 2. Less outreach could reduce the variation in shop, thereby affecting the business 3. Incentives needed for property owners to support such businesses 4. Current regulations and taxation do not account for the specifics of swapping initiatives

Sharing economy organisation	Drivers	Barriers
Municipal bike sharing	<ol style="list-style-type: none"> 1. Facilitates commuting 2. Municipality's agenda to increase bike use from 22% to 30% by 2030 3. Easy accessibility of the sharing platforms (a single app solution) 4. Discounts for purchasing new e-bikes 5. The issue of space (when cars take too much space in the city, bikes become an alternative) 6. Environmental concerns 	<ol style="list-style-type: none"> 1. Infrastructure for bike stands, roads, turns, bumps, speed, etc. 2. High price of e-bike 3. Unfamiliarity with the new product, forming a barrier to investing in a product 4. Safety (high speed of e-bikes is a concern for riders and pedestrians) 5. Security of bikes when parked 6. Regulations as a barrier to greater use of e-bikes
Garaget	<ol style="list-style-type: none"> 1. Volunteers across Malmö City with similar goals 2. Local community needs 3. A (social) void to be filled 4. Highly diverse activities to engage everyone (promoting equity) 	<ol style="list-style-type: none"> 1. Negative image in the media and among traditional libraries 2. Uncertainties about handling other items than books (human skills, security etc.) 3. Blurred rules of competition laws (a need to justify why and how they are not competing with companies selling similar items). 4. A constructed image of 'a day care centre for adults', which had negative connotations

4.4 Work for sustainability and city challenges

Under this research theme two interview questions were asked:

1. *What are the main sustainability (economic, social and environmental) issues that you try to address in your work?*
2. *How do these issues relate to broader sustainability challenges facing the City of Malmö (e.g. economic development, social inclusion, employment, climate change, waste generation etc.)?*

Environmental sustainability impacts of the Swop Shop are connected to the reuse of clothes and fashion items, which is generally better for the environment, as it reduces waste by extending the lifetime of these items. Extended lifetime is achieved because the clothes and accessories are transferred to a new owner through swapping or second-hand purchase. In terms of social impacts, the Swop Shop provides full-time employment for one person and offers opportunities for interns to gain

work experience in the fashion branch. According to the founder of the Swop Shop, the City of Malmö should support enthusiasts who seek to do what they like and who positively contribute to the environment through their work. The Swop Shop initiative helps address the challenge of waste reduction in the City of Malmö.

Municipal bike sharing helps deliver health and environmental benefits by promoting active travel by bike instead of using a car (Fig. 13). In particular, it targets short trips with the hope of reducing overall traffic and the use of parking space. The initiatives contribute to the environmental sustainability agenda in the city, and could improve the well-being and health of Malmö citizens.



Figure 13. Municipal bike sharing scheme Malmö by Bike

Activities at Garaget mainly contribute to the social sustainability agenda of the City of Malmö by addressing social needs of Malmö citizens. Garaget helps to strengthen social cohesion among people who attend the public space and therefore helps build ties within their local community. It promotes equity and democracy through free access to books, tools and other items for all population groups, as well as access to daytime activities for disadvantaged young people. Garaget improves knowledge and raises awareness about Swedish bureaucracies by providing immigrants with coaching services and support with official documents. Garaget stimulates cultural exchange and learning of foreign languages at its language cafes, and emphasises skills development and self-learning (Fig. 14). On the environmental side, lending of tools, games and other items has a potential to reduce material demand, improve resource use efficiency and help to raise the environmental awareness of people using the lending services at Garaget.



Figure 14. Creative workshop at Garaget library

4.5 Collaboration and collective action for sharing

Under this research theme two interview questions were asked:

1. *Which organisations or actors do you collaborate with in your work related to sharing/borrowing/renting/swapping?*
2. *What are the benefits of such collaborations? What are the associated challenges?*

Six years ago, the founder of the Swop Shop approached the City of Malmö for support, but without success. This is why she decided to develop the concept herself. The owner of the Swop Shop participates in all interviews with students and provides input to student projects. She believes this is very important for education and awareness, but also for the future change in society:

"University students have become more interested in me. I don't know how many interviews I've done. And that's good because these are future politicians and business leaders, they will do something on their own."

The City of Malmö collaborates with private companies to promote e-bikes. It leases e-bikes from Ecoride Bike Store and offers them to Malmö citizens for eight weeks free rental, after which people can buy the bikes. The challenge has been to ensure that this pilot scheme complies with procurement laws. The City of Malmö is also discussing leasing e-bikes from a company (probably Ecoride) and letting them run the business. A discussion is taking place with ÅF, which has 600 employees. According to the project manager Olof Rabe, this process has been rather challenging:

"First of all, we put a lot of effort into making the company see that this is important. They show us CSR reports, which look very good. But when it comes to commuting for employees and internal service trips, work-related trips, they don't know that they should include these questions in the report. Then we start talking more about why this is a problem. We say, these are electric cars, and we can have different types of solutions. Mostly they talk about electric cars as the solution, so then we have to talk about the space problem – they don't see that cars are taking up space. The other companies can go by bike, why should we do it? We meet them once, and we come back later, and then they start thinking that maybe they can work with these questions. The space aspect is something new, that cars take lots of space in the city. People have not thought about it before. Creating good qualities in the city is one of the main tasks." (Project Manager at the City of Malmö)

The City of Malmö also collaborates with developers to plan new housing areas with restricted parking spaces for cars, and instead offers car and bike pools in the areas, as in the case with Ohboy! Bicycle House. The City of Malmö is also discussing the possibility of supporting a car sharing company (e.g. one similar to Sunfleet) that would also offer bike pools to its users.

Garaget has worked with The Red Cross on tutoring volunteers. This resulted in opportunities for volunteers to get references from Garaget when they are looking for jobs. Garaget also works with children, educating them on leisure time activities, and collaborates with the Workers' Education Association ABF. The clothes library, Klädoteket, which previously existed in Malmö, was located on the Garaget premises. It is now closed, as it was for free and run by volunteers, and its staff has now moved on. However, according to the development secretary at Garaget, it had an educational effect on the population about renting instead of buying clothes (Fig. 15):

"When [Klädoteket] was running, it was a very successful initiative. It was used to make people aware of sustainability issues. Why throw away clothes if you can share them?" (Development Secretary of Garaget)



Figure 15. Meeting Gustav Ekman (centre), a development secretary at Garaget

4.6 Citizens and sharing as a social norm

Under this research theme two interview questions were asked:

1. *Who are your users/customers? In which ways do you work with Malmö citizens?*
2. *What is your perception of how well people understand the concepts of sharing/borrowing/renting/swapping in Malmö?*

The Swop Shop has 3000 subscribed users, but not all of them are active. According to its owner, the Swop Shop would not face financial challenges if all its subscribers used its services at least once per month. The most common customers are females in the 25-45 age group with small children. The Swop Shop owner believes that both the City of Malmö and the developers can support institutionalisation of the sharing economy in Malmö and accelerate it by nudging people into more sustainable behaviour.

Malmö citizens have been positive about trial projects with e-bikes, and most of them wanted to purchase the bike after the rental/trial period. The City of Malmö then started to offer this through their partnership with Ecoride Bike Store. People mainly use e-bikes for commuting. The project manager for municipal bike sharing sees good prospects for e-bike sharing in the future, mainly due to their high costs and the risks of theft. The major target group for bike sharing projects at the moment are car drivers that particularly engage in very short trips by car.

There was a period when people started associating Garaget with 'day-care for adults', and this label has not created a positive image, which in the end constrained its institutionalisation. Garaget responded by developing a narrative of how it is a place for everyone, which it tries to popularise through various channels. To follow this image of 'a library for anyone', Garaget sets its goals based on user input into their big biannual survey. It also works with children to educate them on leisure time activities.

5. Conclusions

The mobile lab in Malmö was methodologically innovative, as it included a heterogeneous group of participants. In addition to researchers, who traditionally use mobile labs, non-academic actors (i.e. a civil servant and an NGO activist) also joined the core group. This arrangement turned out to be successful, as it helped capture multiple perspectives and allowed participants to learn from different experiences regarding the sharing economy. In the future, we will be looking to form similar teams when arranging mobile labs on the sharing economy in cities.

In terms of content, several conclusions can be drawn from the mobile lab in Malmö. First, collaborative consumption practices, such as sharing, renting, swapping and borrowing, are seen as a way to achieve sustainability goals by the City of Malmö or to tackle its urban sustainability challenges. For example, e-bike sharing is used to promote biking and address environmental and space issues. The challenges of social equity, justice, integration and unemployment are among those that the sharing organisations like Garaget and Bicycle Kitchen aim to tackle, by offering items and spaces to Malmö citizens to use for free.

Second, the sharing practices examined by the mobile lab group are targeted at altering normative institutions. For example, the e-bike initiative aims to change the norms of car ownership and car use. The same applies to designing housing that does not have parking spaces but instead offers car and bike pools for its residents. Garaget is trying to change the norm of owning rarely used tools, while Swop Shop seeks to change the norm of always buying new clothes.

Third, national taxation systems and regulations appear to play a significant role in creating barriers to the sharing economy in cities in general, and Malmö in particular. Our current accounting systems in society need to be changed to accommodate the new forms of consumption activities. This is essential, not only for addressing the needs of businesses engaged in these activities, but also to investigate their sustainability impacts.

Forth, the potential for positive economic and social impacts from the sharing services appears evident, but the positive environmental benefits are difficult to judge. At the same time, shared spaces like Garaget or Bicycle Kitchen could help spread environmental awareness in society.

Fifth, collaborations between the city governments and business-oriented sharing organisations are problematic, as these may contradict free market competition rules. One way to address this challenge is through the development of experimental and pilot projects where various actors, including city governments, sharing organisations, academia and NGOs, collaborate to test new sharing solutions.

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