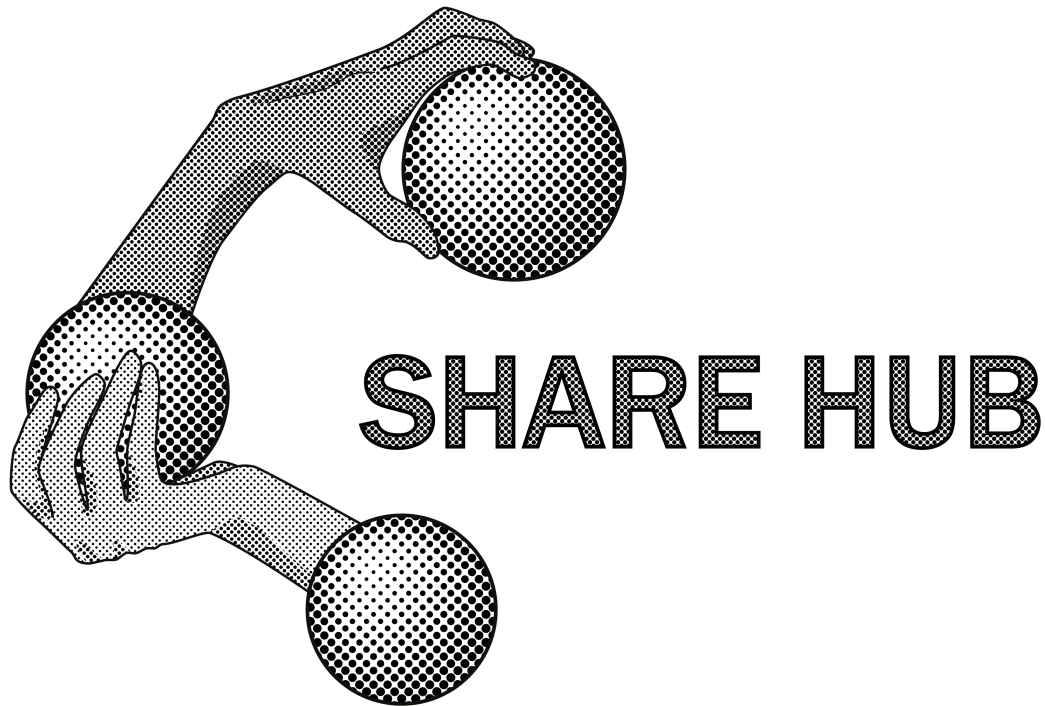




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## **Collaborative consumption**

How to promote sharing in a small-scale apartment building.  
A case study of HSB Living Lab.

Master's thesis in Industrial Ecology

**BEATRICE RINGSTRAND**  
**LINN WAHLGREN**



MASTER'S THESIS FRT 2017:19

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Gothenburg, Sweden 2017

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Cover: Suggested logotype for the HSB Share Hub. Beatrice Ringstrand, 2017.

Typeset in L<sup>A</sup>T<sub>E</sub>X

Gothenburg, Sweden 2017

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## Abstract

The greatest challenge of the 21st century is to transform society from one that favours the environmentally detrimental take-make-waste model, to one that features sustainable patterns of production and consumption. Transition processes are needed in the most resource-intensive sectors, where housing is one of the key areas. Living Labs are combined laboratory and household systems, and are the perfect setting for trans-disciplinary research of sustainable living, including the consumption patterns of its tenants. This study concerns the HSB Living Lab, recently constructed on the Johanneberg campus of Chalmers University of Technology, Gothenburg. In the living lab, students, researchers and the tenants themselves, take part in prototyping, testing and research. This thesis is an explorative study, focusing towards analysis and development of an infrastructure for *sharing* in the HSB Living Lab. The aim is to identify elements which may help to successfully implement such a facility in an apartment building. Through surveys sent to the tenants, interviews with experts, and a literature review, the attitudes, drivers and barriers to collaborative consumption—shared use of resources—are assessed and put into context. The study found that almost all respondents saw benefits in sharing, and that eleven out of fifteen respondents reported the risk of damage or disappearance of object as a hindrance to sharing. Further, a majority of respondents reported that they had not used sharing services in cases where such services were not available or convenient, or that they did not know that such services existed. It also found that expertise on the subject is widely scattered among sectors. To address these issues, it is recommended that the sharing system of the HSB Living Lab is made accessible in public areas of the building, and that emphasis is put on clear, direct information to the potential users. It is also recommended that actors get together to create a common vision for the practice, and that a system for governance is set in place.

Keywords: access over ownership, borrowing, collaborative consumption, HSB, lending, living labs, resource efficiency, sharing economy, sustainability.



# Acknowledgements

First and foremost, we would like to thank our supervisor Isabel Ordoñez for her support, good advice and ideas throughout the project. She streamlined our research as well as guided us in the right direction. Without her experience and engagement, the execution of this thesis would have been considerably more challenging. Secondly, we would like to thank Jörgen Larsson for taking over the role as our guide, helping us improve the structure of the thesis and supporting us with the completion of the project. Further, we would like to thank all of the experts who contributed to our study by sharing their valuable experiences with circular economy. Anna, Eva, Marina, Nina and Tove—we owe a lot to you. We would also like to thank all of our friends and acquaintances who have cheered us during the whole process and patiently listened to us during hard times. You are invaluable and we love you. Last but not least, we would like to thank Frida Bard, our link between Chalmers and HSB Living Lab and our most important source of information, for supporting us and for making this thesis possible.

Beatrice Ringstrand and Linn Wahlgren, Gothenburg, August 2017



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# 1

## Introduction

The built structure in which we live affects our everyday lives; the choices taken by the designers of infrastructure create palpable repercussions in the choices taken by the users. This is a widely known discourse in the field of architecture and urban planning, as well as in the field of marketing and commerce—the framing of a path, product or habit fundamentally changes the attitude of the pedestrian, consumer or individual. Meanwhile, the consumption of material commodities—that is, conversion or relocation of virgin materials to emittants, land use change, and overexploitation—is an ever-growing threat to ecosystem survival, and is contributing to the tremendous environmental stress, biodiversity loss, land degradation and climate change that is caused by anthropogenic activity (e.g. IPCC, 2014; Naturvårdsverket, 2012).

Although the Swedish government has invested in and promoted sustainable city planning—emphasising compactness and diversity, energy efficiency, heat insulation, public transport, bicycle lanes, green rooftops and solar PVs—for several decennia (Bradley, 2014), we have come to a point in consumption where efficiency improvements and technological advances alone will not meet the requirements of sustainable development—we need a shift in consumption patterns (Bradley, 2014). However, as Håkansson (2014) highlights, there is no consensus of what *a shift in consumption patterns* may entail. Material consumption generates physical infrastructures in the form of market squares and shopping malls, which in turn let us track the social and cultural patterns, priorities and ideals of society. As a consequence of this chain of effects, social change in the form of a consumption shift may have vast impacts on the physical structure (Håkansson, 2014), and vice versa. In practice, urban planning often focuses on increasing consumption by the expansion of commercial venues, confirming that urban planning does, to a very high degree, affect our consumption (Bradley, 2014).

At the same time, suggesting that private persons should decrease their material consumption may be seen as politically controversial, since such a suggestion may come in conflict with economic growth, employment and welfare goals—resulting in a political status quo that is difficult to handle, where officials exhort sustainable lifestyles, but encourage increased consumption—and where the consumption issue is regarded as a private concern, rather than a concern for societal development (Bradley, 2014). However, with increasing knowledge of the negative environmental impacts of energy-intensive consumption, it is plausible that future planning will comprise consumption goals, and steer away from unsustainable private consumption, and in the direction towards decreased and collective consumption. This is further substantiated by the fact that previously private concerns, such as indoor

smoking and private car traveling, have shifted to public concerns over time—and are now subjects for rules and regulations (Bradley, 2014). In addition to this, physical planning has, historically, actively created areas for collective consumption such as laundry rooms, work shops, civic halls and guest apartments (Bradley, 2014).

In today’s western societies, there is an abundance of cars, tools, gadgets, machines and instruments that are underutilised for most of the time (Bradley, 2014). This thesis explores means to use those assets in residential settings.

### 1.1 Concepts

This thesis will bear upon several concepts, some new and some more established. To prevent misunderstandings by cause of the multiple interpretations present in current literature, this section aims at giving a short overview of the authors’ definitions of the most important notions.

First of all, a definition of what is referred to with the word *consumption* is needed, since consumption is the main focal area of this thesis. The English Oxford Dictionary defines consumption as “the action of using up a resource”. This wider definition is what the word consumption alludes to throughout this thesis. Perhaps a more common perception of consumption is “the purchase of goods and services by the public”, and this is of course included but a too narrow denotation.

Secondly, this thesis concerns *systems*, rather than separate components or details. This means that the intention is not to, for instance, develop the ultimate smartphone app for sharing, but to look at different factors at different levels of abstraction, which, put together in the right way, would work to promote and facilitate the action of resource sharing between tenants.

Further, *sharing economy* and *collaborative consumption*, both describing shared consumption of goods and services, are two relatively complex concepts. Due to their central role in thesis, they are discussed in depth in Chapter 3.1.

Living labs and other concepts and contexts of this study are explained in subsequent chapters.

### 1.2 Local context

Gothenburg is the first and thus far the only Swedish city to have decided on taking concrete measures to facilitate reuse and sharing of resources (Larsson, 2014; Lund, 2017). Sub-target 73 of the Gothenburg Environmental Programme, adopted in 2013, reads “Create physical conditions for reuse and recycling” (Göteborgs stad, 2014, p. 52). More specifically, the goal is to establish sites for various forms of recycling and reuse near residential areas, where inhabitants can deposit unwanted clothing, gadgets and materials. At these same locations, reparation and crafts services could be made available. The Gothenburg Climate Strategic Programme further adds to the idea of a city with less waste and where consumption is made more efficient; as sub-target 21 states an aim to “[r]educe the purchase of resource-intensive goods” (Göteborgs stad, 2013, p. 62). Furthermore, sub-target 21 states that “the possibility of reuse, shared use and repair shall be improved in order

to reduce waste”. The environmental and climate targets are contributing reasons why several initiatives supporting circularity and sharing economy have popped up during the last few years. Some projects are managed by the municipality and some by private actors. Below are short descriptions of some of these projects. Since they are starting to become numerous, several initiatives have been left out—such as “Fritidsbanken” (“the Leisure Bank”), “Microfabriken” (“the Micro Factory”), bike kitchens, freeshops and clothing libraries.

## Cirkulära Göteborg

To facilitate and manage the task of preventing and reducing waste from both private and public consumption, the umbrella project “Cirkulära Göteborg” (“Circular Gothenburg”) was initiated. The project and its work group seeks to prevent waste in the many municipal administrations and also to give aid and advice to private promoters of circular economy, including sharing and lending systems, makerspaces, repair shops and such—one of the most recent initiatives being an infrastructure for food sharing called “Solikyl—Solidariskt kylskåp” (roughly “*Solidarity fridge*”) (Wolf, 2017). The purpose of Cirkulära Göteborg is not mainly to pursue their own projects but to pull the strings and utilise their large contact network to let actors with common interests meet and enable beneficial collaborations. They can also assist in, for instance, finding a place to start a new establishment.

## Tage

In addition to collaborations with private actors, the municipality manages a number of projects of its own, that relate to waste reduction and circularity. One example is “Tage” (a word play with the name Tage and the Swedish words for *take* and *give*, *ta* and *ge*), an internal web-based swapping platform where the administrations of Gothenburg can give away and find others’ used furniture and equipment. An example is desks from the city council, which have found new purpose in the reading-room of a library.

## Styr & Ställ

Another one of the city’s sharing systems, that has gained popularity and increased in size since its introduction in 2010, is the self-service bike sharing scheme “Styr & Ställ” (yet another pun—true to the Gothenburg spirit—that can be roughly translated to “Steer & Settle”). The number of bicycles available for lending for a small fee (25 SEK for a 3-day pass or 75 SEK for a season pass) has increased from 300 to currently about 1000, spread across approximately 60 stations in the city centre (Alexandros et al., 2016). Usage is free for the first 30 minutes, after which a progressive fee, ranging from 10 to 40 SEK per half hour, is applied. The bike sharing is not only utilized by an increasing number of people—it is also widely accepted and appreciated among those who have not yet tried it (Alexandros et al., 2016).

### **Dela Mera**

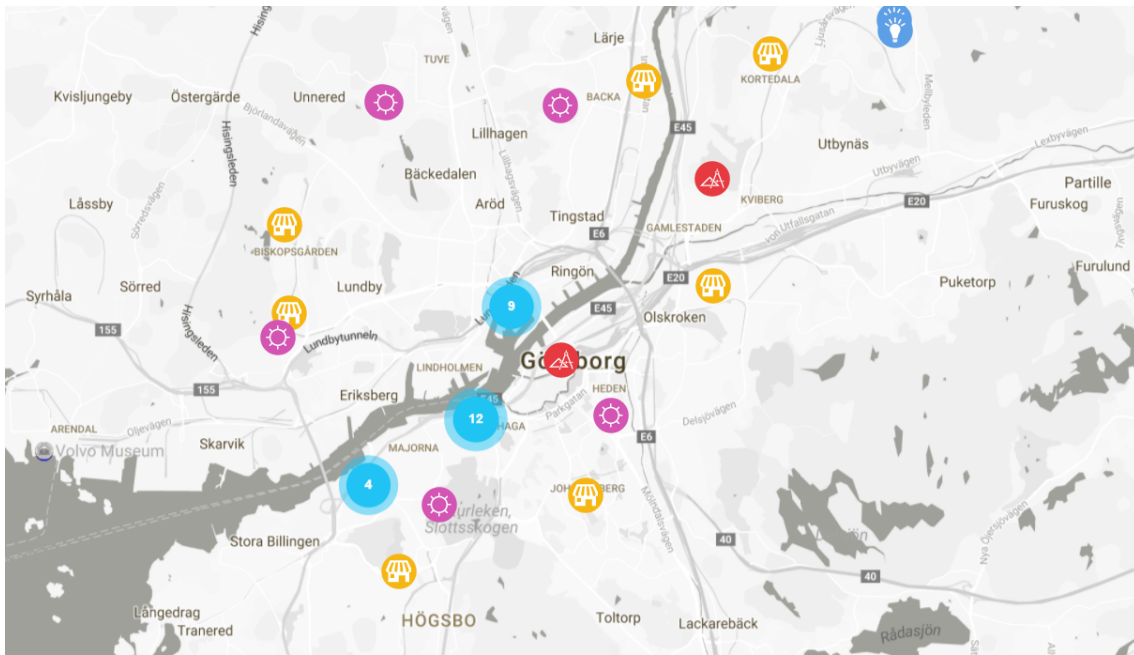
Styr & Ställ is not the only sharing system managed by the municipality. In 2016, part of Gothenburg's budget for environmental issues, was invested in an extension of the traditional libraries' activities. In addition to books and media, the aim of the project "Dela Mera" was and is to let residents borrow things such as board games, tools, kitchen appliances and outdoor equipment at their local library, as part of trying to reach the environmental targets concerning private consumption. So far, six libraries take part in Dela Mera, and two more will join later in 2017. The libraries' participation in the project is completely voluntary, and the staff decides what types of things that are made available for borrowing. In its current form, Dela Mera is somewhat of a pilot project, but if the turnout is good, the municipality has ambition to expand it further (Hjort, 2017). In order to plan expansions and to improve the current supply, they continuously survey the residents' wishes regarding what things the libraries should lend.

### **Hållbar konsumtion Göteborg and Smarta Kartan**

"Hållbar konsumtion", or "Sustainable Consumption", is a municipal activity which is a part of the Consumer and Citizen Service department. Their main objective is to inspire, and improve knowledge about, sustainable consumption. They do this primarily through giving lectures at schools, enterprises and organizations where they talk about e.g. sustainable diets, fair trade and collaborative and sharing economy. In 2015, "Hållbar konsumtion" also performed an extensive survey of the Gothenburgians' attitudes towards sharing, as part of the work with creating the foundation for Smarta Kartan, "The Smart Map" (Lund, 2017). The purpose of this interactive map (presented as a screencap in Figure 1.1), which was initiated by, and jointly developed with, the organization Kollaborativ Ekonomi Göteborg (KEG), is to facilitate sustainable lifestyles by encouraging community, new encounters and access over ownership. This is done by making e.g. bike kitchens, swapping communities, clothes swapping events, freeshops and digital platforms visible to the citizens (KEG and Göteborgs stad, nd). In addition to the map, KEG seek to facilitate peer-to-peer sharing by providing "lending stickers" through their website. The stickers are to be placed on the front door or mailbox, to show the neighbours what things can be borrowed.

The survey that preceded the development of Smarta Kartan consisted of 600 telephone interviews with randomly selected interviewees, carried out in the spring of 2015. The questions were aimed at framing the residents' views and attitudes towards sharing, borrowing, lending and swapping things with each other. The results showed that, when including books, music and film (including streaming sites), three fourths already participate in sharing. Statistically significant differences were seen between different age groups and levels of education. The lower the age and/or the higher the education, the more likely a person is to share things. Education was proved to have the most considerable impact.

Almost all (nine tenths) of the respondents had a positive attitude to sharing, where just 2 percent of the youngest age group were hesitant, compared to 21 percent among the oldest. More than half of the respondents would share tools and gardening



**Figure 1.1:** Screenshot from Smarta Kartan, showing local sharing initiatives such as book swapping shelves, freeshops and community fruit tree groves.

equipment, bikes and/or cars. Economic benefits is the main incentive, followed by environmental benefits/a sustainable society. The perceived hindrances to sharing compared to owning were not knowing the availability of things, and not knowing how to do it in practice. The second most common reason as to why the respondents are reluctant to share things is worry that their things would get damaged. Still, two thirds of the interviewees would use a sharing system/service where things are lent to private persons in the neighbourhood. The attitude varied a lot depending on age and educational background. 82 percent of people under 30 years of age would use such a service, to be compared with 34 percent of those over 65, and 25 percent of those whose highest level of education was elementary school.

## Re-circulation and sharing at municipal housing estates

Gothenburg's municipal housing companies work with environmental issues and some of the most recent additions to these initiatives are facilities for re-use and sharing of resources. For instance, Familjebostäder has a freeshop in the district of Högsbo, Poseidon has a “repurposing house” in Backa Röd, and Bostadsbolaget has a tool library in Torpa and a “swap room” in Haga. The tenants of approximately 100 apartments have a key to this swap room where they can drop off or pick up things that their neighbours no longer need. However, resource sharing has been going on under the aegis of Bostadsbolaget for a long time, without it necessarily being a conscious pro-environmental decision on their part. In principle, all tenants of Bostadsbolaget's 23,000 apartments can borrow tools, such as power drills, from the property care manager in their neighbourhood (Bengtsson, 2017).

### Ceres tool library

Ceres Tool Library is situated in Lindholmen and was initiated five years ago by Marina Povitkina, who in July 2012 moved to Gothenburg to study. Like other international students, she did not have the tools and appliances needed to organize her apartment. That problem, along with an interest for environmental issues and sustainability, made her apply for funding to start a tool library. The library was probably the first of its kind in the Gothenburg region, and has now been running for about four years, giving the students of the SGS Ceres housing area free access to tools (Povitkina, 2017).

## 1.3 National context

In late 2015, the Swedish Ministry of Finance (Finansdepartementet) sent out an enquiry to create a knowledge base for the sharing economy—more specifically, its transaction models, its users’ roles and legal positions, its legislative landscape, and its possible appurtenant measures, constitutional adjustments and development potentials (Finansdepartementet, 2015). The consecutive enquiry, published on the 3rd of April, 2017, defines the sharing economy as “that part of the economy in which *private individuals* grant each other access to *under-used* resources, property as well as services, both free of charge and in return for payment. [...] [T]heir common feature is that resources can be shared with users *beyond one’s own circle of acquaintances*” (Finansdepartementet, 2017, p. 32).

The enquiry puts clear emphasis on the user perspective, most notably through surveys and interviews with private persons. It found that overall, the sharing economy in Sweden is at an early stage, and that the population has limited experience of use of sharing economy services. Less than ten percent have used sharing economy services in the last two years, most of whom have used them only occasionally. Those who have used sharing economy services the most frequently tended to be young people who live in large urban areas; these early adopters were characterised by curiosity and openness to new phenomena, were more tolerant towards defects and frictions with other users and with the platforms, and had strong social driving skills and a certain willingness to take risks (Finansdepartementet, 2017).

Overall, the enquiry found a lack of clarity relating to applicable legal rules, relationships between the parties, and dispute settlement in the present-day sharing economy in Sweden.

## 1.4 The HSB Living Lab

After a period of urbanisation, lack of housing in cities and rising rental fees in the early 1900’s, the housing shortages in Swedish cities were urgent in the 1920’s. In reaction to this, HSB (Hyresgästernas Sparkasse- och Byggnadsförening; “Tenants’ Savings and Construction Association”) was founded in Stockholm in 1923, the purpose of which was to provide its members with decent, affordable housing in a time of “more or less permanent” housing shortage. The intent was that the members

themselves would, as a cooperation, achieve these goals (Häggmark, 2013b). A great emphasis was put on rationality, modernity and affordability: The residences were to be well-organised and deliver a higher standard to residents; running hot and cold water became a standard, as well as bathrooms and common laundry rooms (Ohlsson, 2013a). In the 1930's, Sven Wallander—an architect as well as a co-founder of HSB—donated the patent for refuse chutes to HSB, effectively removing dustbins from courtyards and hence making space for plantations and playgrounds (Ohlsson, 2013b), and in the 1940's, HSB developed a standardised system of measurements for kitchens in collaboration with Hemmens forskningsinstitut (“Research institute for homes”), which came into use in 1950 (Ohlsson, 2013a). The measurement standards allowed for e.g. kitchen furnishings to be produced in factories rather than on-site, reducing production costs. Overall, the maturation of HSB was notably tinged by functionalism and aspirations for innovation (Häggmark, 2013a).



**Figure 1.2:** HSB Living Lab, viewed from Rännvägen.

The HSB Living Lab is a newly constructed research infrastructure located on the Johanneberg campus of Chalmers University of Technology, Gothenburg. It houses 29 apartments where students, guest researchers and members of HSB live and take part in testing, prototyping and research; most notably through the comprehensive sensor system that measures indoor environment quality, water flows, electricity usage, positioning, heating, ventilation and outdoor conditions (HSB, 2016). The tenants were, at the time of applications, aware of the testing and agreed to share their data to researchers in this housing experiment.

To further support the development towards sustainable living, it has been decided by HSB Living Lab developers to implement two separate systems for supporting a ‘sharing ecosystem’ (Ordóñez, 2017) in the facility—the first is the *Swap Cube*, a system for reusing personal objects, such as clothes or books. This system is already in operation, though at a premature stage (Bard, 2016). The second is

the *Share Hub*, a system for temporary lending of products that are seldom in use, such as tools or kitchen appliances.

### 1.4.1 Swap Cube

The concept of both the “Swap Cube” and “Share Hub” is a result of a proposal from some of HLL’s tenants who, in autumn 2016, turned to Chalmers with their idea, asking for help to enable such a system within the HLL. Since then, the Swap Cube project has left the idea stage and been implemented in a common area of the building—partly developed by the tenants themselves. The space is an actual cube—a wooden frame furnished with shelves and a clothes rack—intended to accommodate the tenants’ leftover things such as clothes, accessories, books, home decorations, leisure and sports equipment. As of February 2017, the Swap Cube functioned as a swap shop, meaning it had a one-in, one-out-type policy. Thus, the tenants could take things for free from the Swap Cube, but not without putting in a corresponding number of things. To keep track of the items, mainly for research purposes, a manual logbook has been used to register the items that enter and leave the cube. Due to sometimes insufficient circulation of the things left in the cube, inviting people from the outside to participate in the swapping, is seen as a possibility (Bard, 2016; HLL, 2016b).

### 1.4.2 Share Hub

The purpose of the “Share Hub” is, as the name suggests, to encourage sharing of things between the tenants. The initial idea was to set up a space in the laundry studio—a common area that is used by all tenants—where the residents can place objects which they seldom use, and, for a limited amount of time, borrow things that they need. The system, as of February 2017, at the beginning of this project, was not yet put into practice, although there were some ideas concerning the digital platform and system. For instance, for practical, safety and research purposes, an idea is to attach a tag to each product to enable real-time tracking using HLL’s positioning system. As opposed to the Swap Cube, this facility is to be used by tenants only (HLL, 2016a).

# 2

## Research approach and methodology

The topic of this thesis is the possibilities of reduction of material consumption through sharing of items. Collaborative consumption of household goods is studied in a living laboratory, and analysed in respect to the drivers, incentives and hindrances of sharing material and social resources among tenants. One focal point of investigation is the tenants' consumption patterns from a *systems design* perspective, to understand and address the core mechanisms of consumption, collective consumption and the practice of sharing. This section aims at giving an overview of the process, strategies and perspectives upon which this thesis is built.

### 2.1 Aim

The aim of this thesis is to identify elements which may help to implement a sharing infrastructure in a residential building, and with that information as a backdrop present design goals for the program and process of a sharing infrastructure in the HSB Living Lab (HLL). The purpose of this study is to, with a layers and systems perspective, study values and attitudes to sharing and ownership, infrastructures for sharing in residential buildings, and sharing in everyday life and practicalities. The specific question that will be addressed is the following: *What are the views on sharing present among the tenants in HSB Living Lab?*—the purpose of which is to investigate the two-way interaction between sharing infrastructures, and the users' consumption patterns and social habits. The goal is ultimately to create more sustainable societies by reducing the linear flows of materials, that is, to reduce resource extraction and waste generation.

The intended audience of the results of the project is HSB Living Lab, its tenants and partners, other housing companies that are interested in implementing systems that reduce material flows, the municipality of Gothenburg, and the interested general public.

### 2.2 Delimitations

The mapping and analysis of existing infrastructure for sharing economy will be addressed with a wide perspective, including both large- and small-scale systems. However, the design proposal will be fitted to the HSB Living Lab's specific conditions, and is therefore not necessarily applicable to other contexts.

It has been suggested by HSB Living Lab to create a smartphone application to facilitate registration, tracking of items and data collection of the systems. However, this will not be accomplished within the limits of this thesis. The smartphone app could possibly be an idea for another MSc or BSc student to work on.

*Collective consumption* is another form of shared consumption of resources, but will not be dealt with in this thesis. The concept normally refers to services, rather than goods, which are provided by state agencies instead of by the market, for example through subsidies or regulation. An example is education, which is “consumed collectively”.

The thesis will address some aspects and concepts of sustainable development. However, potential environmental effects of collaborative consumption will be discussed at a general, low-detail theoretical level, focusing on resource use and waste generation.

### 2.3 Methodology

This section aims at reviewing the methods used in the study, wherein both primary and secondary data have been collected. The study has been a partly iterative process, carried out according to the following steps:

1. ASSESSMENT OF THE SITUATION: mapping of the prerequisites for sharing within HLL and analysis of current trends and research within the field of sharing economy.
2. INTERVIEWS WITH PROFESSIONALS: mapping of existing infrastructures for sharing and getting experts’ views on strengths and weaknesses.
3. SURVEY TO TENANTS OF HLL: study of the tenants’ experience and preferences to enable custom system design.
4. DATA ANALYSIS: system-oriented analysis of gathered data.
5. DEVELOPMENT OF SYSTEM DESIGN GOALS: compilation of the most relevant results into a specification of requirements and suggestions for the design of the system.

Below follows a brief description of the data collection.

#### 2.3.1 Primary data

Primary data were gathered through interviews and surveys. A literature review and discussions with experts laid the foundation for the subsequent surveys and system design. The execution of the interviews and surveys is described briefly below.

##### Expert interviews

During the first half of the project, a number of qualitative interviews with experts and managers of ongoing sharing projects, were conducted. Most of the interviewees had a key role in the environmental work of municipal administrations and were responsible for projects aimed to promote collaborative consumption among inhabitants of Gothenburg. The interviews were semi- to unstructured, since their

purpose was to explore an area of interest and gain insight in how the practical work of realising collaborative consumption in Gothenburg is carried out. Four interviews were performed through personal meetings, and one was conducted via e-mail. The interview template is presented in Appendix A.

### **Surveys**

In order to explore views on sharing and owning, preferences concerning the design and to detect practical hurdles for implementing an infrastructure for sharing, a survey, from hereon called Survey II, was sent out to the tenants of the HSB Living Lab. A web based survey, which also contained some questions aimed at evaluating the performance of the Swap Cube, was shared in the HLL tenants' Facebook group. To make sure it would reach all tenants, a complementary physical version of the survey was placed in the their mail boxes. The survey contained both closed- and open-ended questions which targeted several areas of interest. The purpose was to collect both quantitative and qualitative data. The survey sent to the HLL tenants in April 2017, and out of the 29 apartments, fifteen tenants responded. The survey and its results are presented in in Appendix D and E.

### **Interviews with users**

In Survey II, respondents were given the option to submit their contact information to further contribute to the study through interviews. Out of fifteen respondents, six people submitted their interest. Despite numerous attempts and reminders, however, no interview could be carried out in time for the submission of this thesis.

### **2.3.2 Secondary data**

The results of this study are partly based on raw data acquired directly from managers of different projects and enquiries on the topic of collaborative consumption and sharing economy, and of course from contemporary literature on the subject. The methods used for these purposes are described briefly below.

### **Surveys and interviews**

Some quantitative and qualitative data was acquired directly from Gothenburg Municipality through project managers, who shared the responses of surveys and telephone interviews on the topic of collaborative consumption. The survey sent to the HLL's tenants was also preceded by an earlier, similar survey (survey I) that was sent out before the installation of the Swap Cube—see Appendices B and C. These three studies were used both as inspiration for the formulation of questions in survey II, and for comparison of results.

### **Literature review**

A thorough review of mostly highly contemporary publications has been performed throughout the whole project. There is an abundance of literature written in the last

## 2. Research approach and methodology

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two years, which covers various aspects of the sharing economy. Some of the key-words used to narrow down the search results include: collaborative consumption, sharing economy, peer-to-peer sharing, living labs and collaborative and participatory design.

# 3

## Theoretical background

Sharing is inevitable—whether it is sharing space, resources, culture, thoughts, emotions or ideas. As human societies have developed, sharing has become more and more concentrated in nodes for trading and co-habiting, eventually evolving into cities. Cities have, for as long as they have existed, been founded on sharing systems—the sharing of space, interaction, goods and services (McLaren and Agyeman, 2015). While some argue that cities’ inherent population density, highly networked physical space and digital technologies converge to form a “critical mass in both demand for, and supply of, shared resources and facilities” (McLaren and Agyeman, 2015, p. 4), others denote that many cities have evolved from being *centres of production* to *centres of consumption* (Nilsson and Olsson, 2014), suggesting that they have not only increased in interdependency and complexity, but also become increasingly dependent on outside sources of production to fit a more globalised economy.

Further, urban areas are expected to grow over the coming decades: A UNPD report projects that 66 percent of the world’s population, and 90 percent of Sweden’s population, will live in urban areas by 2050—compared to 54 and 84 percent, respectively, in 2014 (UNPD, 2014). Thus, cities play a pivotal role in the future of society, and the key to halt infringement on the planetary boundaries and human rights may lie within them, if they are planned and governed thoughtfully (McLaren and Agyeman, 2015); as part of the problem, they might also be part of the solution.

Hence, urban areas are expanding, and at the same time reinforcing, rebuilding and rearranging their infrastructure networks. This raises the question of what is to be enlarged, reduced, conserved or removed—and more importantly, as Håkansson (2014) points out, there is an issue of equity: in development of overlapping physical, social, economic and cultural infrastructures, there are opposing alternatives and conflict points between affected groups and formations. Therefore, it is important to be aware of which groups and formations are able to affect what is considered to be valuable, feasible and desirable. To share means to trust and to collaborate—it is a social investment that requires equity and social justice to reach its full potential, and as such, it requires planners and decision-makers to collaborate with and participate with the users.

### 3.1 Sharing and the sharing economy

Sharing is a hybrid of consumption and anti-consumption; it is a form of anti-consumption in regard to possession, but not in regard to use (Akbar et al., 2016).

The idea of a sharing economy was spawned out of an opposition towards hyper-consumption, meant to shift access to services provided by ownership away from the ownership itself (Botsman and Rogers, 2011). For instance, if the service need provided by a toolbox can be fulfilled by access to a tool library, the need for access could replace the need for ownership. However, the enquiry from Finansdepartementet (2017) argues that the sharing economy *phenomenon* is better known than the sharing economy itself, since the sharing economy is highly diversified and its future very uncertain—like the early versions of other phenomena such as e-commerce, the Internet, and even earlier, electricity—and that there is no existing legislation fit for the purpose of sharing economy transactions between mutual users, partly because the economy has not yet adapted to these new models of transaction (Finansdepartementet, 2017). The Internet has made it fast and convenient to share, so much so that it has even shifted the boundary between public and private—and even makes up an infrastructure for participation (McLaren and Agyeman, 2015; Botsman and Rogers, 2011). Not only does it let us share our thought and ideas to people all over the world, but it has also let us open up to share our personal belongings and services—shifting advantages gained from ownership.

80 percent of the users of sharing economy services in Sweden perceived their experiences as primarily positive, and only a quarter reported that they ran into problems, most of which were single problems (Finansdepartementet, 2017). For those who have not used such services, most were not aware of their existence—while 83 percent of those who were aware stated that they simply did not need them. This response could be regarded as peculiar, considering the extensive number of sharing economy services that are available on the market, covering a wide range of needs. Other reasons to not use sharing economy services included uncertainty and unsafety, relating to recruitment and negotiation without a professional counterparty (Finansdepartementet, 2017). When asked what would be needed for them to start using sharing economy services, or to use them more frequently, 37 percent wanted laws that would protect users more effectively in transactions, a third wanted official quality labelling or certification, and 28 percent wanted simple and inexpensive dispute settlement. Therefore, the enquiry argues that there is a need for security-promoting measures and functions within the sharing economy, along with a simple and inexpensive form of dispute settlement (Finansdepartementet, 2017).

A study by Akbar et al. (2016) divides consumers into two categories: those who participate because of financial restrictions, and materialistic consumers. While the former category is driven by paying as little as possible for a desired service, the latter is driven by getting access to, or possessing, products. Akbar et al. (2016) found that possessiveness and materialism are key factors for participation in commercial sharing systems as they could inhibit those who are possessive of their belongings from sharing them with others—unless the service or product offered was *unique*, is not easily available to the consumer, or has a high product-need-fit, in which case they were more likely to participate to gain access to the product. In conclusion, moderating the conditions for sharing affects the outcome in participation (Akbar et al., 2016). Another study by Möhlmann (2015) found users' self-benefit to be a key factor in determining the likelihood of using car and accommodation sharing services again (i.e., utility, trust, cost savings and familiarity were more correlated to using a

service again than e.g. environmental impact or trend affinity) (Möhlmann, 2015), while another that examined the motivational variables (economic, environmental and social) of participation in peer-to-peer sharing found that motivation, to a large extent, differs between sectors of the sharing economy—more so than between different socio-demographic groups, or between users and providers. For instance, economic motivation is relatively higher in accommodation sharing, while social motivation is relatively higher in meal sharing (Böcker and Meelen, 2016).

In collaborative consumption communities, a majority support an introduction of a governance system, to a certain extent because of human egoism (Hartl et al., 2016). Hartl et al. (2016) state that the level of support may be linked to the level of trust in other people, and that governance is needed when users do not trust other community members to e.g. return goods. However, sanctions might push participants to think of the agreements in business terms, rather than ethical (Hartl et al., 2016).

There are multiple reasons to participate in sharing services, and the idea is attractive globally: a 2014 survey conducted by Nielsen concluded that 68 per cent of online consumers globally are willing to share personal items for a payment (Frighetto, 2014). There are substantial incentives on behalf of actors to create market value out of the sharability of objects, as well: a *sharing economy business model* framed by economic opportunity (Martin, 2016). This commercial sharing economy would function as a platform business model where resources are rented, shared, lendled or swapped, and where the platform owners create revenue from either percentage fees, membership fees, or by selling complimentary products or user data (Lacy and Rutqvist, 2015; Finansdepartementet, 2017). The sharing itself could then be regulated by deposits, refunds, reviews and ratings to assure trust, credibility and security. This stands in contrast to the *circular economy*, which puts emphasis on the resource use and environmental impact of underutilisation, rather than on profit margins (Lacy and Rutqvist, 2015). Advocates of the sharing economy typically argue that it is an economic opportunity for its higher productivity, resource utilisation rates and consumption growth for otherwise idle or under-utilised objects—essentially, a more sustainable form of consumption (e.g. Lacy and Rutqvist, 2015), while opposers argue that it implies ‘nudging’ rather than democratic guidance, fails to question capitalism as an organising principle (McLaren and Agyeman, 2015), creates unregulated marketplaces and reinforces the neoliberal paradigm; that the market has successfully re-framed the sharing economy from its original idea of anti-consumerism to economic opportunity (Martin, 2016).

In the light of this, there has been a resistance towards the sharing economy discourse, as it puts emphasis on *commercial* sharing and fails to account for *communal* sharing as well. McLaren and Agyeman (2015) argue that this communal sharing, the “social” or “solidarity” economy, would deliver spaces, services and goods *with* its users rather than *for* users—essentially recognising sharing as a social, cultural and collective activity at its core—making it key to equality, justice and sustainable development.

## 3.2 Design thinking

Botsman and Rogers argue that design *thinking*, as opposed to design *creation*, is not about designing products but to apply the process of intentional creation beyond discrete products, to solve big problems using systems and experiences. Design thinking is described as the result of the age of networks combined with increasing environmental pressures and consumer demands for businesses to design experiences over stuff. Botsman and Rogers further argue that design thinking intersects with collaborative consumption in several ways. For instance, the design becomes more focused on facilitation than object creation and the consumer transitions from being a passive receiver to an active participant. The designer's role is therefore to think about human experiences first, rather than the product itself. According to Ezio Manzini (Botsman and Rogers, 2011, p. 169), one of the most important things for designers of collaborative systems to think about, is the amount of effort required to participate in them. Systems that require a lot of effort require a lot of willpower and vice versa. Designers should strive to make collaborative systems so easy that they will be adopted instantly and intuitively.

Hasselkuß et al. (2017) concur with the importance of the consumer's active position and show that social practices should be a main focus in living lab research. Trying to achieve transition towards more sustainable consumption systems by focusing solely on technical solutions and viewing people's needs as fixed entities is counter-productive. It disregards the dynamics of everyday life in technologies themselves create needs which, in turn, often create unsustainable outcomes. Therefore, innovation and design should be user-driven and the interdependencies of everyday life routines need to be taken into account. Living labs are the ultimate arenas for this type of innovation. With their combined function of lab/households, they put the user (tenant) and value chain related actors at the centre of the innovation process.

## 3.3 Socio-technical systems

One eminent way of approaching the complexity of socio-technical transitions (i.e. major, long-term technological changes of societal functions) is analysis in multiple layers, that is, breaking down the system into sub-systems—levels of the socio-technical structures that constitute society—where transformative change can be understood in terms of interactions between different levels (Martin, 2016). The three main levels can be described as:

- the macro-leveled *landscape*: the slowly changing structures rooted in society, including infrastructure, culture, societal values and the prevailing economic paradigm;
- the meso-leveled *regime*: the prevailing socio-technical systems which serve the needs of society including the consumption, production, digital communications and transport systems;
- and the micro-leveled *niche*: the space within which innovations emerge and develop (Geels, 2005; Martin, 2016).

It is important to note that these levels are interlinked, as a nested hierarchy. Among *landscape developments*, we find wide processes that span and act as a foundation for all parts of society—e.g. industrialisation, digitalisation and globalisation—that have a large inertia and are difficult to interrupt. It is upon this landscape that the current world that we live in, the *socio-technical regime*, is built and interpreted: the regime establishes institutions, routines, norms and policies. However, the socio-technical systems have some dynamic stability that hinders radical innovation from being created on this level (Geels, 2005). The *socio-technical niche* is a breeding ground for innovation through e.g. research and development and experimental projects.

It is the interlinkages, reciprocation and intervention between the levels that spur transitions. For instance, if an innovation is proven to have the right momentum, it has the chance of diffusing and developing further into the socio-technical regime, opening up for a socio-technical transition (Geels, 2005). In the case of the sharing economy, Martin (2016) concludes that this phenomenon could be seen as a niche of socio-digital experiments that potentially reinforces the current economic paradigm and at the same time promotes sustainable consumption, and that there is a “need for research exploring how the sharing economy niche could be steered toward a pathway aligned with a transition to sustainability” (Martin, 2016, p. 159). Hence, there is an opportunity to use this analytical method to further study sharing, the sharing economy, and collaborative consumption in relation to sustainability to find the leverage points needed to steer the development in a desired direction.



# 4

## Results

The five expert interviews provided a clearer picture of the design of local infrastructures for collaborative consumption, some of which are described in Section 1.2. They also gave important insights about some of the problems with the existing systems. The interviews are summarised in [protonmail.com](mailto:protonmail.com) in Section 4.1.

Preceding this study, a short survey (hereon called Survey I) was issued to the tenants of HLL regarding the previous experiences and attitude towards swapping and sharing systems (Ordóñez, 2017). The survey consisted of a series of yes-or-no questions with space to fill in comments. The number of responses were seventeen, and the survey and its responses can be found as a whole in Appendices B and C, respectively. In Survey II, a consecutive survey issued by the authors, a short evaluation of the Swap Cube was included to follow its development since Survey I.

In Section 4.2, the results of the Survey II are presented. The survey consisted of both closed- and open-ended questions, some of which were multiple choice questions. Some of the questions were inspired by the questions used by Gothenburg Municipality (Göteborgs stad, 2015) in their survey of 600 citizens' attitudes to collaborative consumption. The number of respondents were fifteen. The survey with its responses can be found in Appendices D and E.

### 4.1 Expert interviews

Interviewee 1 is the manager of a tool library that is open primarily to the tenants of a local student housing company. The library is present on the Internet, and bookings and returns of the tools are handled via e-mail. The aim is to spread the idea and accustom people to sharing. The interviewee said that “[e]ach time people return a tool (e.g., a drill) and say: ‘Thank you, it was priceless’, you realise that the library has just prevented one more drill from being bought”. The biggest problem that this interviewee mentioned was how seldom people use the facility. She does not have any aggregated statistics—however, she knows every borrower personally and has all transactions recorded on e-mail. According to her experience, she probably gets more requests for interviews than she gets actual requests for things to borrow. She believes that a reason for this is the lack of significant informational campaigns, without which the society is simply not ready to use the existing sharing initiatives available to it. However, she is hopeful that sharing initiatives become a norm—just like recycling—and the mission of current initiatives is to help the processes of building this norm. To be able to reach more people and make a greater impact, she plans to possibly merge the tool library with a bigger, municipal sharing infras-

structure. She thinks that, in the future, there will be more grassroots initiatives for sharing, but that these initiatives and the spreading of the idea of sharing is not enough to make the sharing economy actually function. According to her, “[p]eople are not used to it, they don’t know how it works and they are simply not ready to engage in sharing”—therefore she strongly believes that there is also a need for government funding and promotion, extensive social advertisement and teaching of sharing economy in schools.

Interviewee 2, the manager of a swap room at a municipal housing company, confirmed the before-mentioned problems with low usage rates. She believes that the residents who have access to their room for swapping of items, generally use it only once—either when they have just moved in, are moving out, or after a big clear-up of the apartment. She said that even though a lot of people have access to the swap room, the circulation of items is so slow that the effects on waste-generation of the households in the area are small at best, but more likely non-existent. She believes that the key to higher usage is to introduce the concept early on, in this case at the time of occupancy, since “it is easier for people to change their behaviours [then], rather than after 20 years of residence in the same house”. Despite mediocre results, she has a very positive view on their swap room and similar initiatives, since they can serve to inspire and plant a new mind-set in the residents of Gothenburg, as well as contribute to a sense of community among residents.

Interviewee 3, a development manager in urban development and environment at the municipality of Gothenburg, explained that part of the municipal budget for environmental work (approximately 45 million SEK in 2016) was invested in the start-up of Dela Mera, a project that is intended to engage people from all parts of Gothenburg in sharing. As mentioned in Section 1.2, the affiliate libraries lend things such as board games, tools and kitchen appliances to anyone who has a library card. When borrowing one of the more valuable items, identification and agreement to the terms of service is also needed. Dela Mera is a pilot project, but the interviewee expressed a hope that it will eventually become an integral part of the library services. As with much else within the municipality, she said, it is largely dependent on the amount of money allocated to the project. So far, the new sharing service has been warmly received by the library staff, naturally, partly due to voluntary participation. The only, mild, resistance has come from staff having a more conservative view on the purpose libraries, and who are fully pleased with the lending services covering just the traditional books and media. The interviewee said that when asked directly about what hinders involvement in the project, the answer is usually “it is still so new”, but that engagement may come when people get used to the idea. However, according to the libraries’ statutes, they shall work to encourage creativity and culture, and tools, for instance, may well fall within that category.

Interviewee 4, a planning officer in sustainable consumption at the municipality of Gothenburg, put emphasis on the importance of encouraging a sharing culture to ultimately reduce consumption. She believes that nudging (i.e. positive reinforcement of beneficial habits) is a central concept, and her focus is on creating contexts where citizens want to develop the system themselves. She said that the municipality has the ability to invest in sharing systems and help people create and develop

such platforms, and that Gothenburg has come a long way in doing so. She stated that there is a notable difference among cities—a difference that can be deduced from contrasting politics. Her theory is that in cities where the political disposition is more right-wing, consumption is regarded as a private matter, not to be infringed on by the government or municipality. Consequently, not much resources are spent on sharing initiatives—such matters are left to private actors.

Interviewee 5, a process manager at the municipality of Gothenburg, works with waste-minimisation and pulls a lot of strings in projects concerning circular and sharing economy. She has a large network of contacts and can connect the right people with each other to create constructive collaborations. She explained that she also tries to help sharing system initiators with limited means and contacts find a place where they can start their activities. She has found that trust and credibility are crucial variables that determine whether a sharing service will be successful or not. Other factors are accessibility and convenience. She has insight in the waste management in Gothenburg, and has noticed that the garbage rooms of some multi-family houses have become informal spaces for sharing, where a tenant can pick up what someone else has thrown away. In some houses they have made use of this habit and set up a depository for fully functional items that, if not retrieved by another tenant within a certain time frame, will be collected and sold at a second hand shop.

In summary, two of the interviewees mentioned that people seldom use their facilities. All five mentioned the need for spreading the notion of collaborative consumption to a wider public. Thus, even though they have yet to gain greater popularity, the common perception is that these initiatives are important, no matter the degree of use.

## 4.2 Survey responses

Out of the tenants in the 29 apartments in the HSB Living Lab, fifteen filled out the survey. Among the respondents of the survey, ten were students, and a majority reported an age of 20–29. This is somewhat consistent with the distribution of student accommodations in HSB Living Lab, where half of the apartments are occupied by students.

The share of respondents who reported wanting to use a sharing system is consistent with the share who reported doing so after the Swap Cube was implemented. When asked if they wanted the facility to be kept in operation, two thirds of respondents said they did.

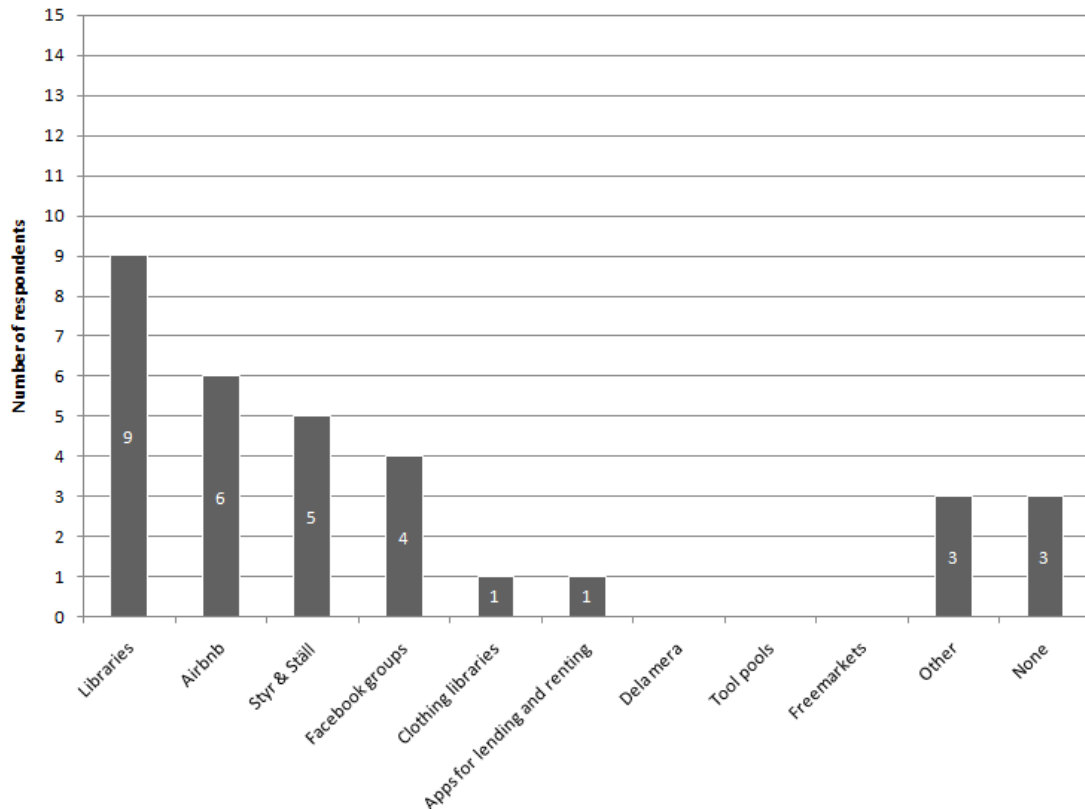
Out of the fifteen respondents, twelve had used any sharing service during the last three years (see Figure 4.1) A majority had used libraries for media, books, magazines and films, while newer variants of libraries, such as clothing libraries and tool pools, were less common or not used at all. The three respondents who filled in the *Other* category wrote “car pools”, “Sunfleet” and “Move about”. Almost half of the respondents reported using sharing services exclusively to borrow or rent things (7), while a third reported using them both to borrow and to lend things (5). The comments in this section were generally positive; users of sharing services reported having a good experiences.

## 4. Results

The reasons given as to why they have not used sharing services in situations when they could have, the respondents reported that the services were either not available (10), that they did not know they existed (8), and that they were not convenient (7). When asked what respondents felt hindered them from sharing with others, the most prominent hindrance was the risk that the things are damaged or disappear, as seen in Figure 4.4. In the *Other* category, respondents filled in “Accessing when needed” and “That it is not available when I need it”. On the question of what would make the hindrance smaller, respondents typically answered *consequences*, *compensation* or *guarantees* regarding damage, loss and wear on things they lend.

Overall, respondents reported that sharing is important (with a mean value of 3.5 on a 0 to 5 scale). In Figure 4.2, the aspects of sharing that are considered important by respondents. Notably, almost all respondents report environmental benefits as one of the important aspects (14), closely followed by economic benefits (13). The social benefits—a sense of community—was only considered important by a few (4), but overall, respondents reported multiple benefits of sharing, with only four respondents filling in less than three aspects.

All respondents would share things with their friends and family, and eleven out of fifteen would share things with their neighbours (see Figure 4.3).



**Figure 4.1:** Previous experience of sharing services among survey respondents.

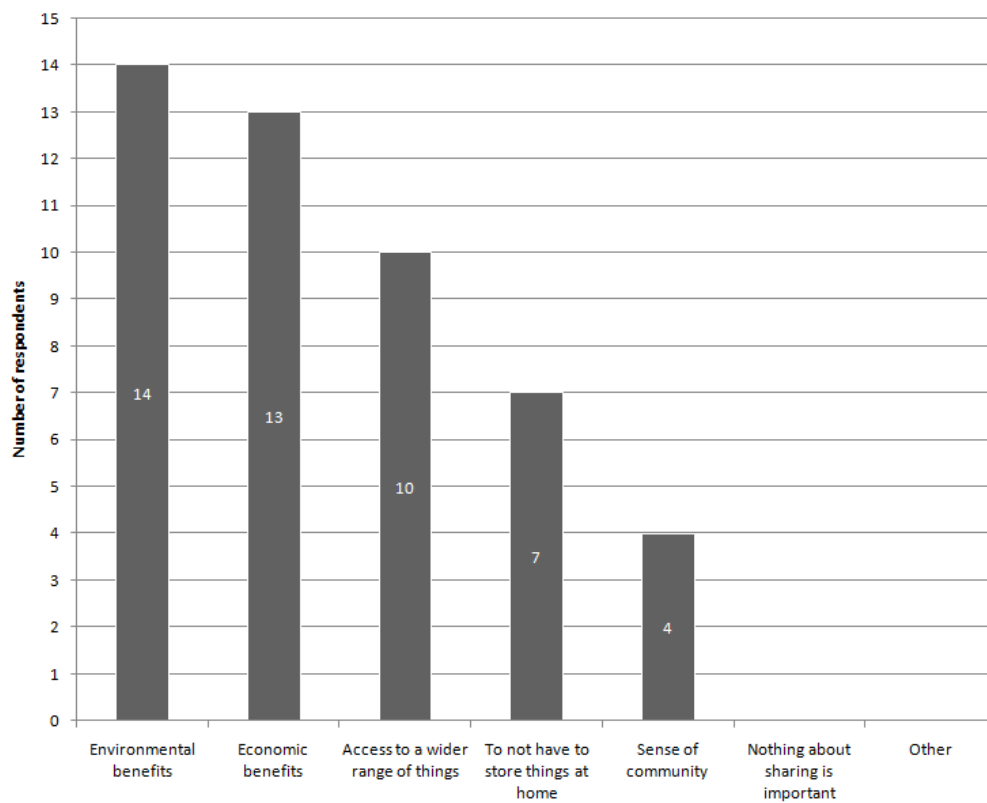


Figure 4.2: The aspects of sharing that are considered important.

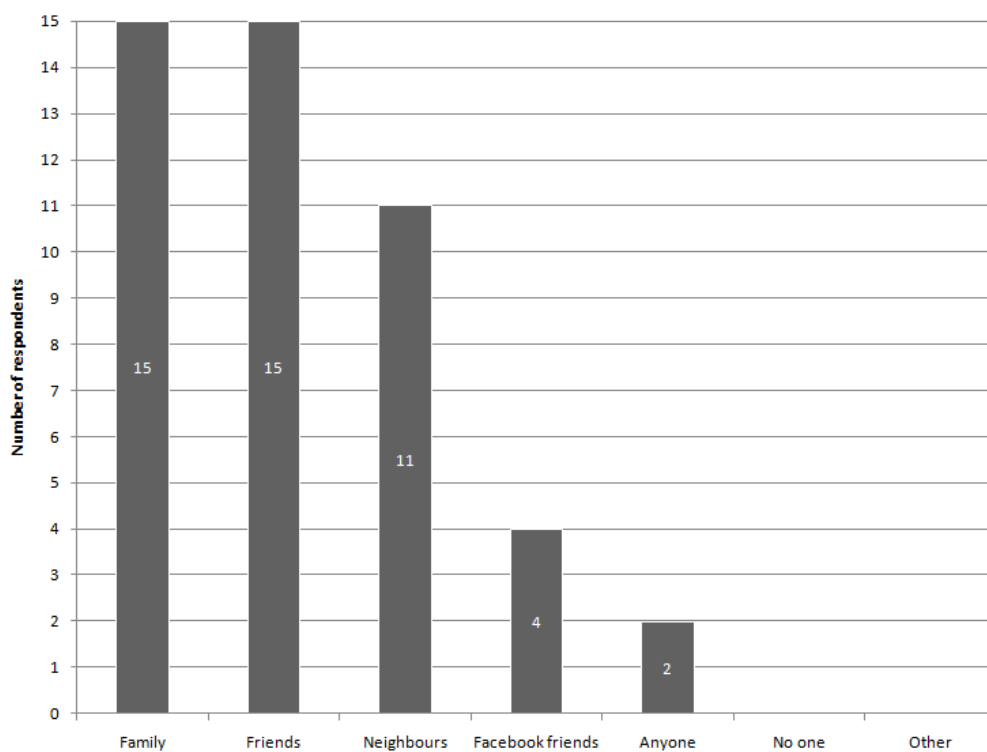
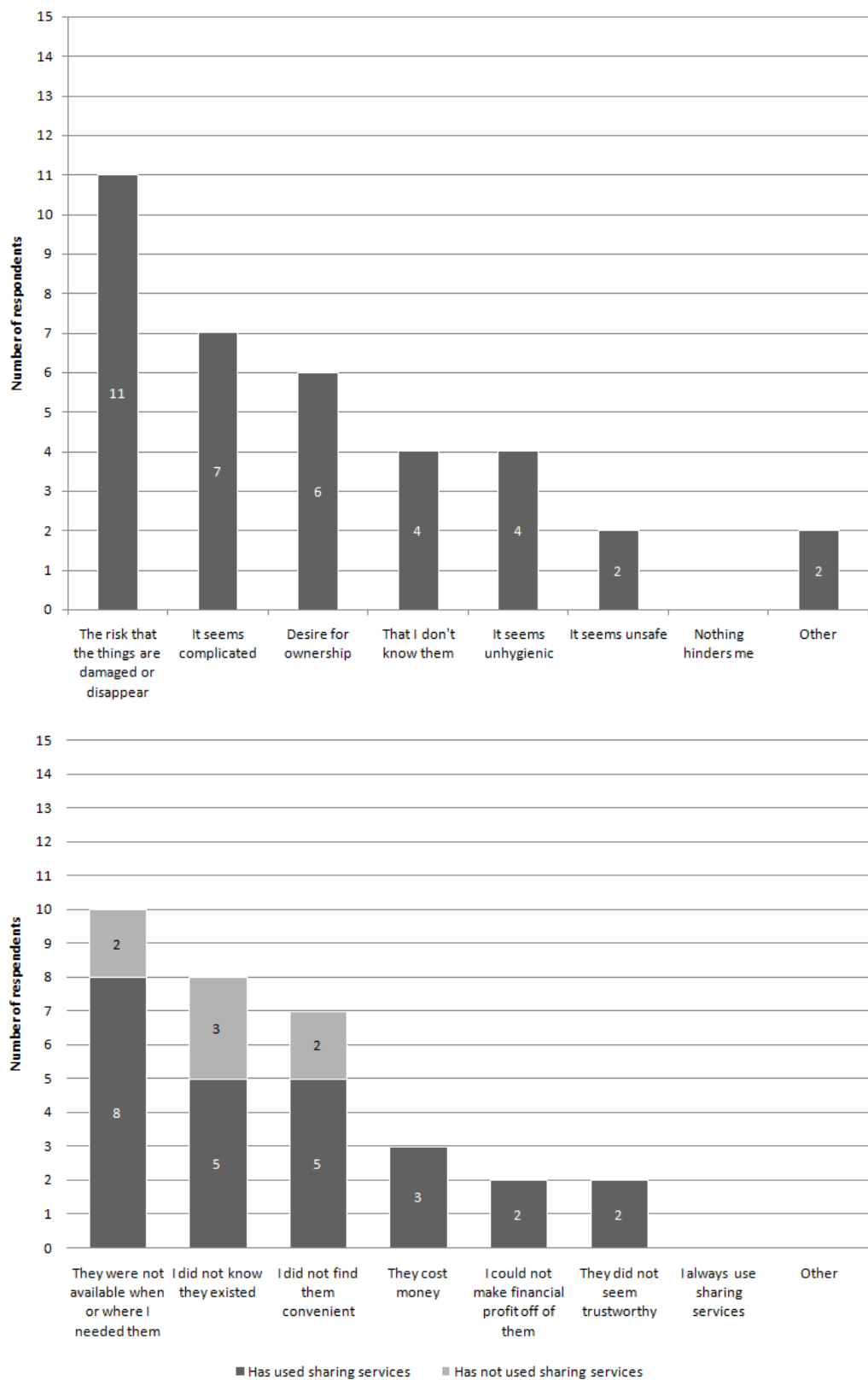


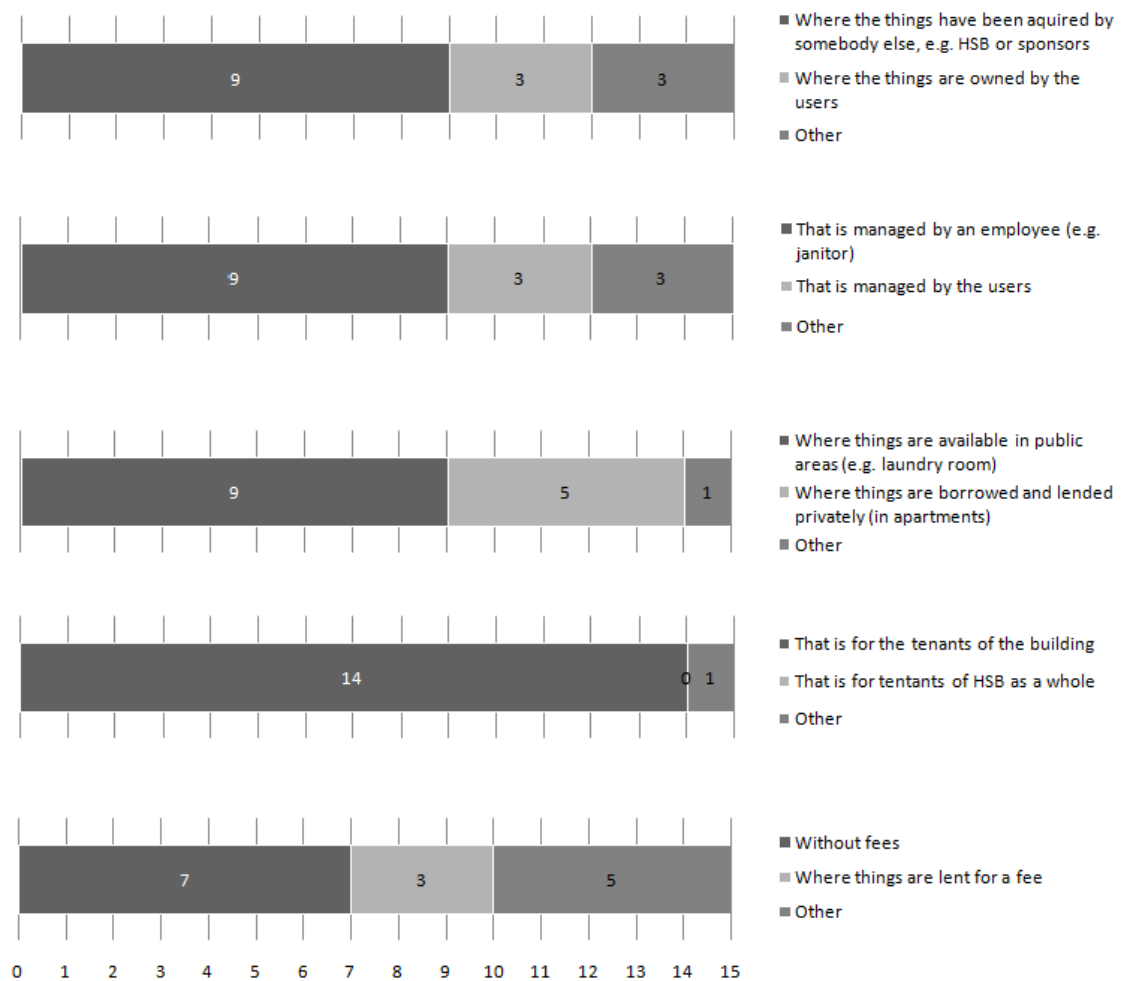
Figure 4.3: With whom respondents would share things.

## 4. Results



**Figure 4.4:** *Top:* The perceived hindrances to share things with others. *Bottom:* Perceived reasons not to use sharing services, even though they might have been available.

Presented in Figure 4.5 are five diagrams describing the replies to three-choice questions, where respondents were asked to finish the sentence “Would you rather share things in a system...?”. The results show that a majority of respondents would rather share things in a system where the things have been acquired by someone else (9), that is managed by an employee (9), and where things are available in public areas (9). The results also showed that almost all respondents would prefer if the system was meant for the tenants of the building (14), rather than for HSB as a whole. When asked if they would prefer a system with or without fee, most answered without (7), while some mentioned in the *Other* section that they would consider a monthly, yearly or late fee an appropriate alternative to fee-per-usage (5).



**Figure 4.5:** Desired sharing system design.

At the end of the survey, respondents were asked to fill in what things they would like to *borrow* from and *lend* out to their neighbours, what things they feel they *need to own* themselves, and what things they *could borrow every time they need it*.

In Figure 4.6, the statistics of the *Borrow* and *Lend* categories are presented. Among the things that respondents wanted to *Borrow*, over 75 percent answered *Power drill*, *Kubb*, *Waffle iron*, *Sewing machine*, *Grill*, *Balls*, *Books* and *Board games*. In the *Lend* category, over 75 percent filled in *Books*, *Board games*, *Screwdriver*, *Kubb*, *Waffle iron*, *Foldable chairs*, *Hammer* and *Video games*.

In Figure 4.7, the statistics of the *Need to own* and *Could borrow every time* categories is presented. In the *Need to own* category, over 75 percent filled in *Clothes* and *Bags*, while in *Could borrow every time*, the top items were *Power drill* and *Kubb*.

In Figure 4.8, a comparison is made between the willingness to *borrow an item every time it is needed* and willingness to *borrow an item*. The results highlight some items that respondents showed a greater will to borrow occasionally rather than borrow every time they are needed, e.g. books, video games, screwdrivers and hammers, sewing machines and board games—but overall, the discrepancies are small. In 4.9, the willingness to *borrow an every time it is needed* category is compared to *need to own an item*. Here, the results show that respondents feel a higher *need to own clothes*, bags and USB sticks and stereos than most other categories, most of which have a far higher rate of willingness to *borrow an item every time it is needed*. In particular, the items in the latter category include those who are seldom used on a day-to-day basis, such as outdoor games, foldable chairs and grills.

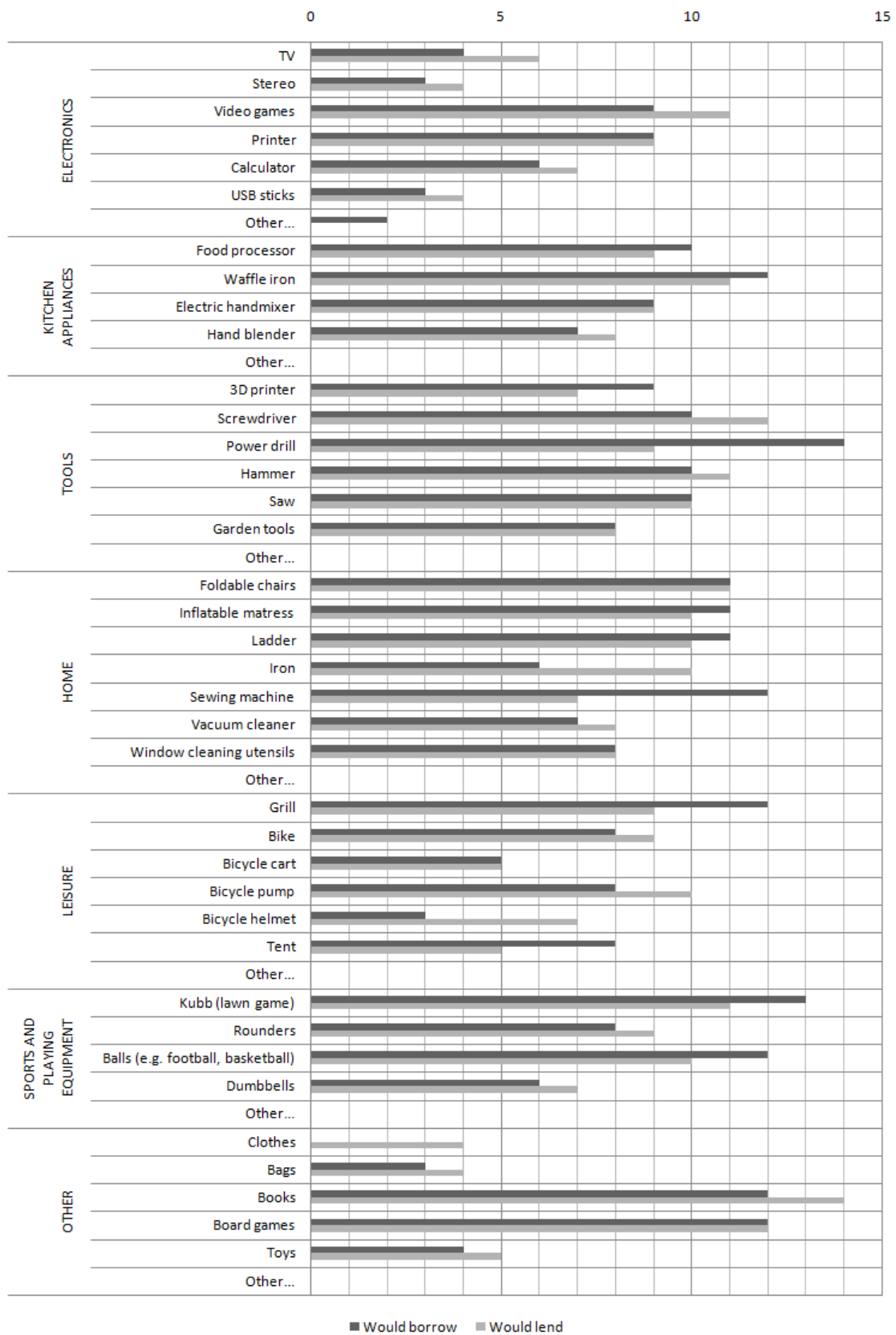
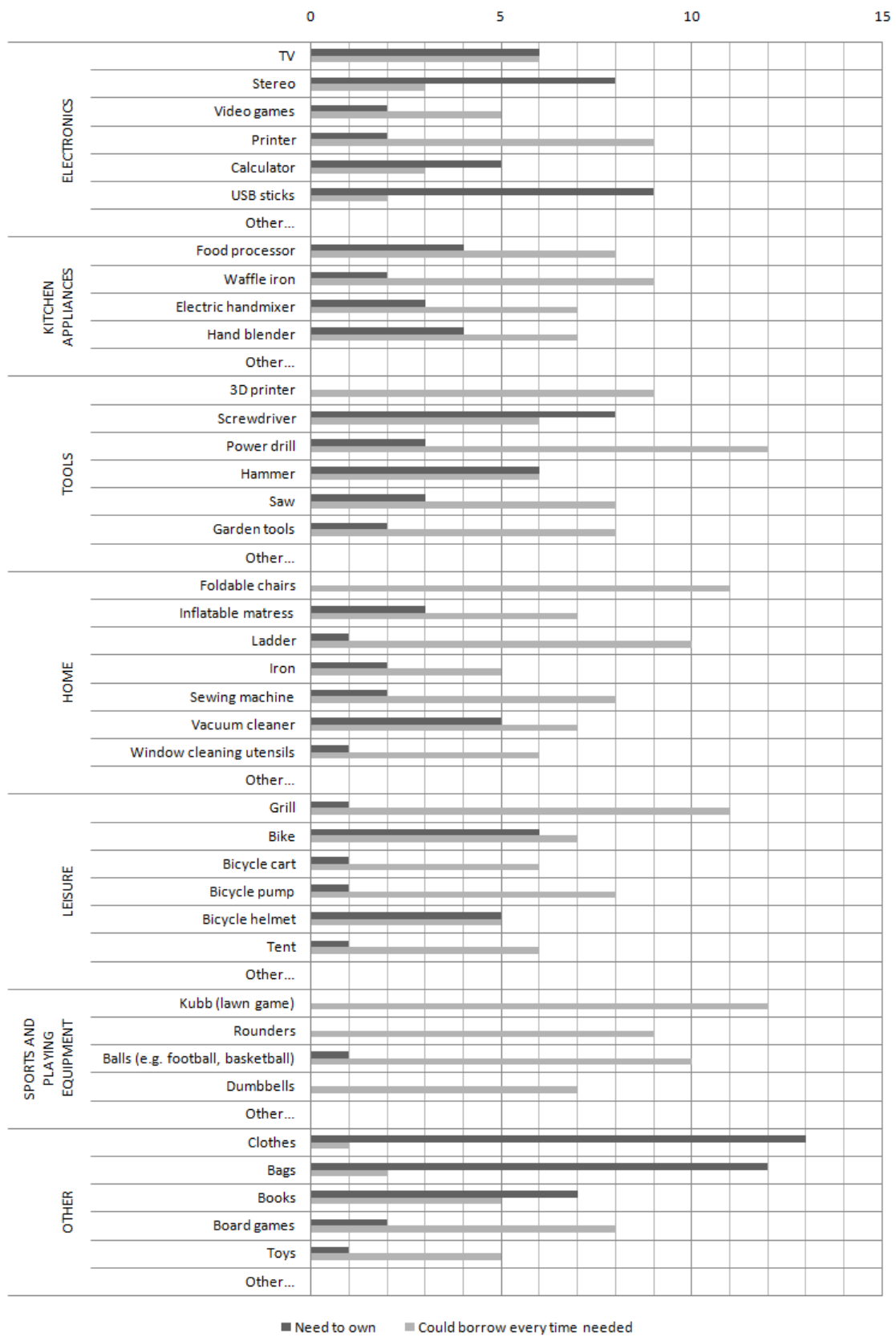
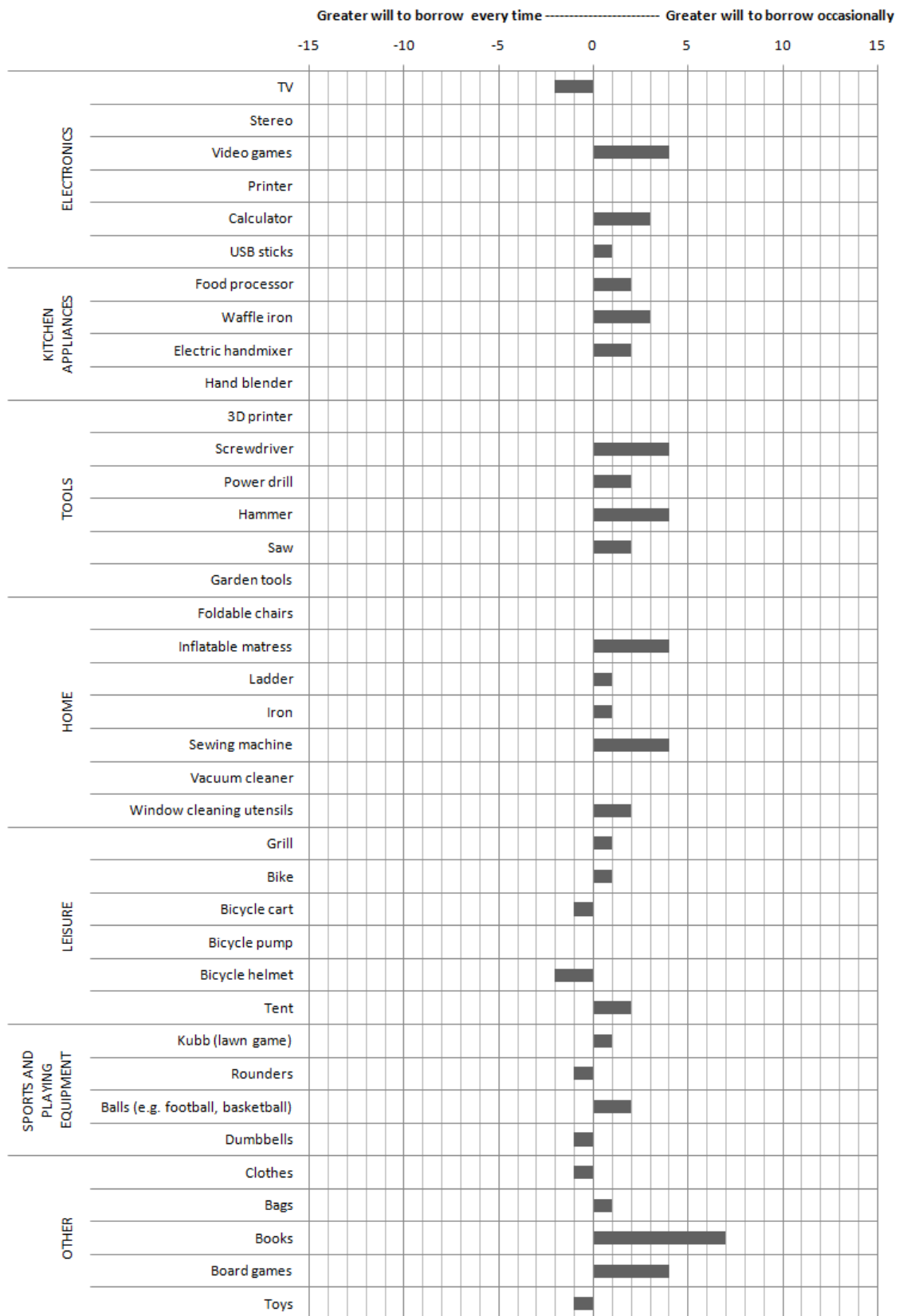


Figure 4.6: Statistics of the list of items. *Borrow* and *Lend* categories.

## 4. Results



**Figure 4.7:** Statistics of the list of items. *Need to own* and *Borrow every time* categories.



**Figure 4.8:** Will to borrow occasionally versus will to borrow every time needed. The horizontal axis shows the number of respondents reporting a will to borrow an item every time it is needed subtracted by the number of respondents reporting a will to borrow an item occasionally.

## 4. Results



**Figure 4.9:** Will to own versus will to borrow every time needed. The horizontal axis shows the number of respondents reporting a will to borrow an item every time it is needed subtracted by the number of respondents reporting a will to own.

# 5

## Discussion

### 5.1 Data gathering, survey responses and expert interviews

Out of the 29 apartments in the HSB Living Lab, only fifteen tenants filled out the survey. This raises two major concerns for analysis of the results: Firstly, the range of respondents was rather small, which could lead to inaccurate results. Secondly, the survey did not take into account the narrative of the respondents, meaning that those who do not want to or do not care to share things with their neighbours might also be the same people who did not care to fill out the survey. Additionally, the tenants of HSB Living Lab are well-aware of the testing that is conducted within the building, and the selection of tenants that applied for such a housing situation might have sorted out those who are less inclined to show inquisitive or audacious tendencies in regards to lifestyle. To make general conclusions for the public as a whole, it is therefore best to rely on studies which have compensated for this effect.

The fact that respondents were, overall, positive to sharing and consider multiple aspects of the sharing of resources as important. Additionally, respondents who had used sharing services in the last three years generally reported having good experiences with said services—however, relatively few had used other sharing services than libraries.

In the comparison diagrams (Figure 4.8 and 4.9), only the difference between the responses are accounted for. This could be considered misleading. However, the results give some interesting insight to response ambiguity as well as perspectives on ownership: In the case of the diagram of *Greater will to own versus Greater will to borrow every time*, it is clear that personal items such as clothes and USB sticks are preferred as possessions, while tools, machines and outdoor equipment are more accepted as subject for borrowing each time they are needed. This could be due to numerous reasons—the items with a higher borrow-to-own score tend to take up more space, be more expensive and/or be more expensive. These tendencies can also be seen in the responses on hindrances to sharing, where the most prominent answer was *The risk that the things are damaged or disappear*, suggesting value, affection or financial investment to the objects themselves to be a major hindrance to sharing.

In the survey, a few of the questions qualify as leading questions. These were formulated as such intentionally, to help point out weak spots that respondents might have been afraid to admit otherwise. The unfavourable aspects of this are quite obvious: When asking subjective questions, one will get tinted responses. However, one important issue to address is that of the responsibility of the individual.

Assuming that a majority of excessive consumption is a personal matter, the impacts of consumption should follow the same trail—and following this train of thought, the problem appears to lie within the individual. However, assuming that the problem of excessive consumption is societal, the individual has little to no role in resolving the perceived consequences of consumption. This is accentuated in the question of what hinders tenants from sharing, which focuses on the individual consumption patterns, and in the question of why they do not use sharing services, where the focus lies in societal structures.

Regarding the responses to Survey I and Survey II, it is clear that providing examples of services, alternatives, hindrances and shareable objects did affect the outcome of the survey. For instance, when presented with a pre-constructed list of shareable items, all respondents filled in at least one item per item category and thus showed more interest in sharing than when asked a yes-or-no question on the matter. This could have been an effect of not wanting to leave the page blank, or an effect of seeing more options than one would come up with by oneself. However, the underlying psychological effects of ticking pre-filled boxes as opposed to filling out an empty line with one's own ideas remains unresolved in this study. Nonetheless, careful consideration should be taken to such effects when constructing a survey.

Further, it is plausible that there is a discrepancy in responses as a result of semantics. On the question about sharing *services* versus sharing *objects*, part of the difference could be due to a tendency to differentiate services providing objects from the objects themselves. In essence, the question is where one draws the line between e.g. renting a car (as an object), and buying a ride in said car (as a service). To some extent, sharing services could be seen as a broader concept, since it often includes immaterial matter, such as data, interaction, or workforce. Therefore, it is difficult to interpret the responses in regards to *actual* participation in sharing services, and even more so the societal impacts of sharing.

When comparing the results of this study to those of similar ones, there are no obvious discrepancies. The study performed by Collaborative Consumption, Gothenburg Municipality, found a generally positive attitude to sharing and broadly the same drivers, incentives and barriers as could be concluded from the responses of Survey II. The similarities in results could support the validity of this study, despite its low response rate.

Concerning the expert interviews, the semi-structured approach led to open discussions which in turn gave valuable insights. A structured method could have eliminated the potential risk of leading questions, but would also reduce the chances of receiving exhaustive answers and the opportunity to incite open conversation. The selected interview technique worked well for the intended purpose.

### 5.2 Prerequisites for sharing material goods

Since sharing has been along since the dawn of time and is undeniably part of our life on Earth, it is reasonable to consider it part of landscape-like conditions—therefore, sharing is a vast concept as it spans multiple dimensions. It is in our language, our work, our relationships and even in our genes. As population rises and resource stocks are strained, it has come to public consciousness that there

is a certain need to establish sharing patterns in the realm of material resources. However, this structured, material segment of the sharing convention is far less prevalent than that of, for instance, the structured sharing of information, even though it is practised in form of co-habiting. In a world where architects use the sharing of space as a tacit resource, only a few engage in planning resource-neutral living; as Bradley (2014) puts it, consumption is seen as a private matter. Thus, only part of the sharing doctrine can be regarded as included in the meso-level of society. On the other hand, collaborative consumption can be seen as a micro-level niche that is just beginning to break into the meso-level of connectivity, position tracking, and real-time updating.

Out of the fifteen respondents, nine had used libraries, and six had used Airbnb during the last three years—while very few had used services such as smartphone apps for sharing. Following the line of argument, this is not surprising since libraries have existed for quite some time and could be considered a part of the built infrastructure, i.e. in the meso-level of society. In a similar fashion, Airbnb uses the same inherent and established structure of temporary housing as hotels, motels, hostels and bed and breakfasts do, and could therefore also be considered part of the very same regime. Here, smartphone apps, *Dela mera* and tool pools would constitute a socio-technical niche, which would explain the low usage rate among respondents. However, since *Dela Mera* uses already-established libraries as its platform, there is great potential for a wider public adaptation.

There are, however, systems that have surpassed the self-confirmatory and self-expanding stage of conventional market development altogether, and successfully made a leap from innovation to full dispersion and societal integration with the help of government regulation and subsidies. One such example is the system for recycling (of e.g. bottles and cans), where small, local micro-level depots established a macro-level network, with a change of values and habits as a result. This example is of interest since it overlaps many of the characteristics prevalent in noncommercial sharing of material goods: the goal is to reduce material throughput; they have to be located locally, accessible and easy-to-use; and it is only made possible through community participation (i.e., the individual's "free will"). Additionally, the comparison raises an important question: If product disposal is seldom regarded as a private matter, why should product acquisition? The recycling infrastructures were made "big" through being small in big numbers, and as suggested by one of the interviewees, the function and spread of noncommercial sharing systems might depend on government promotion and regulation in a similar fashion. Regulation could also decrease strains derived from trust issues, as suggested by Hartl et al. (2016).

The respondents of the survey did, collectively, express that they are interested to participate in sharing—in particular, they expressed a willingness to borrow (and to a lesser extent lend) tools, appliances and outdoor equipment. This could follow the norms of multi-family housing, where space is limited and as for the case of student housing, often financially restricted. This in turn could act as a potential leverage point for changing the way we use and the public areas in these buildings; by utilising areas that are traditionally intended for laundry, postal services and outdoor leisure, other sharing services can take part of the already existing (spatial) sharing infrastructure—making the transition as seamless and convenient as possible

while also making the items accessible to all tenants. This fits together well with the respondents' wish for a sharing system that is meant to be used only by the tenants of the building.

The expert interviews filled in the gaps of what is lacking in the literature: a more hands-on, trial-and-error approach and empirical studies of existing infrastructures for sharing in a Swedish context: In addition to the accessibility of the items, information about the sharing system and its preconditions need to be clear and introduced early on, to make the system part of the habitual norms. Since safety was also a concern among respondents, credibility is necessary. Seeing that respondents were generally well-accustomed to libraries, a booking system with late fees would contribute to the familiarity and distinctions of rules and norms surrounding the system—which, in the end, will enhance credibility.

To implement sharing in multi-family housing as a means to reduce consumption, resource use and environmental impacts, as well as to enhance the social and cultural aspects, we must build upon the norms around ownership and access to resources, and further develop the digital as well as the physical infrastructure around these services. The HSB Living Lab is a great test bed for this since it was built to be intrinsically evolving, largely because the tenants of the building make up a niche-like group because of their living situation in the lab. However, it is prominent that knowledge on the matter is scattered, and much is to gain from sharing the knowledge, experiences, and expertise of those already involved in the field—and then sharing it to other housing associations, municipalities, and to the public as a whole.

# 6

## Conclusions

The results of this study show that the attitude to sharing among tenants of HSB Living Lab, as well as among other residents of Gothenburg, is positive. The common denominators are the belief in economic benefits for private persons and reduced environmental impact of consumption.

Sharing and collaborative consumption has the potential of breaking out from its current status as a niche, possibly with the help from top-to-bottom regulations. With the help of subsidies from the government or municipalities, sharing services could create a network of small-scale local instances, similar to that of recycling. This is especially true for noncommercial sharing, that cannot rely solely on market discourse to function.

The role of HSB will be to pioneer a common sharing service for multi-family houses. Even though usage rates of sharing services in residential buildings are relatively low as of today, they create a social value, and there is comfort in that “every item borrowed is one less item bought” and in that continued information gathering and prototyping will improve the services.

### 6.1 System design recommendations

The following section is intended to describe the most crucial variables of a successful infrastructure for sharing, adapted to the conditions of HSB Living Lab. This is presented in a list of criteria, identified after literature studies, interviews and surveys. The list shows the goals of the system design, and gives some suggestions of suitable ways to reach the goals.

- **ACCESSIBILITY:** Tenants expressed that they would rather share things with their neighbours, than use a system that is open to everyone. Therefore, it is suggested that the sharing system makes use of already existing public spaces in the building, to make it accessible to the tenants.
- **INFORMATION:** It is clear that the more informed users are of available sharing services, the more likely they are to use them. Therefore, information should be clear and introduced as early as possible, preferably in connection to the move-in of new tenants, to make the sharing system a part of everyday life in their new dwelling.
- **SAFETY:** One of the major concerns is that things will be damaged or lost when lent to peers. To ensure credibility, it is suggested that there is a booking system with late fees in place, similar to that of a library.
- **FUNDING:** It is suggested that the investment and maintenance of the Share

Hub is financially supported by either part of the rental fees for the apartments, or a membership fee for users. In a larger perspective, government regulation and subsidies is favourable for expansion of sharing services in multi-family housing in general.

- **COLLABORATION:** The sharing services in Gothenburg are too scattered to easily get an overview of available options. Therefore, it is suggested that all actors get together and share their knowledge and experiences with sharing and collaborative consumption.

## 6.2 Future research and development

In this thesis, the behavioural patterns that determine the line between *considering sharing a good practice* and *participating in sharing practices* have only been minimally explored. More research is needed in this area, perhaps with the help of interviews with the tenants themselves.

The sharing economy has yet to intervene fully with the prevailing socio-technical regime and create a transition. Since there is no consensus on whether collaborative consumption and the sharing economy will lead to less resource use, more research is needed concerning the presumptive reduction in resource use and waste generation, given the possible rebound effects. In other words, there is a need for research that explores how the sharing economy and collaborative consumption niche can be steered toward a pathway aligned with a transition to sustainability.

Regarding the future of the infrastructure for sharing within the HSB Living Lab, there is a great opportunity to take the information provided by this thesis to test and iterate a share hub, that could later be re-iterated to fit the needs of other residential areas.

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# A

## Project managers, interview questions

Template for semi-structured interviews with project managers at the Gothenburg Municipality and public housing company Bostadsbolaget. The interviews were performed between the 15<sup>th</sup> of February and the 21<sup>st</sup> of March 2017.

## Interview – Project managers

Sharing of resources between tenants/citizens

- Why is that important to you and your organization?
- What spurred the initiative to work with these issues?

Your project(s) **X**

- When was it put into practice, and why?
- What was/is the core idea?

If applicable:

- How did you decide where to implement your sharing system(s)?
- How does the system work?
- What do you think has been the most significant positive outcomes?
- Has there been any problems so far (e.g. negligent handling of borrowed objects)?  
What have you done to deal with them?
- Who is responsible for the operation and maintenance of the facility/system/objects?

Monitoring

- Do you monitor the outcome in any way? Statistics? How do you use the results?

Future plans

- Will you somehow develop this project further? Are you planning to expand it?
- Do you have, or plan on having, collaborative projects with other organizations?
- What do you personally see in the future, regarding sharing/collaborative consumption?

To what extent do you think that the municipality/your organization should, and can, affects citizens'/tenants' material consumption?

Do you have something to add or any advice you want to give us?

# B

## HSB Living Lab, Survey I, questions

Enkät till hyresgästerna i HSB Living Lab, aug/sep 2016.

The 5th of September, on the HSB Living Lab Grand Opening event, two new facilities will be introduced in the building

# Swap Cube

- Exchange of things
- Take things you need (for free)
- Give away usable things you don't need
- Hopefully reduce waste and need for buying new things
- Examples: books and clothes

# Share Hub

- Sharing of things
- Borrow things for shorter times
- Lend things you don't use often
- Hopefully reduce the need for owning your own things
- Examples: iron, blender waffle maker, pick-nick grill

The Swap Cube will be launched on Monday, you are welcome to place things which you want to give away starting on Sunday. It will be located on the bottom floor in the big open space.

This survey is aimed to find out what your thoughts are on this types of facilities, in order to investigate what effect they may have on people's lifestyles. Please take 5 minutes to fill it in and leave it on the table, Ambra or Erik who also live in the building will pick it up on Sunday.

## Questions about swapping

Have you ever heard of this concept where you can swap things through a third-party system?

YES ☐ NO ☐ Comment: \_\_\_\_\_

Have you previously used any facility for swapping objects? YES ☐ NO ☐

Comment: \_\_\_\_\_

If yes, what was your experience from that? Did it work well or not? YES ☐ NO ☐

Comment: \_\_\_\_\_

Do you often swap things with your friends? YES ☐ NO ☐

Comment: \_\_\_\_\_

What do you normally do when you need to get rid of an object which you no longer wish to own? ☐ throw in garbage ☐ donate to second hand/charity ☐ give to a friend

☐ use swapping system to give it to someone who I don't personally know

Other/Comment: \_\_\_\_\_

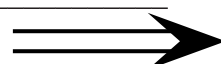
Could you imagine yourself using things which have been previously owned by other tenants in your building? YES ☐ NO ☐

Why/why not? \_\_\_\_\_

Do you see any problems with swapping objects with other tenants in your building? YES ☐ NO ☐

If yes, why? \_\_\_\_\_

Continue on other side



Do you think that you will take things from this facility in the HSB Living Lab? YES ☐ NO ☐

Why/why not? \_\_\_\_\_

Do you think you will give away (unwanted) things to this facility in the HSB Living Lab? YES ☐ NO ☐

Why/why not? \_\_\_\_\_

Do you think that such facility would make you buy less new things? YES ☐ NO ☐

Comment: \_\_\_\_\_

Do you think this facility will reduce the amount of waste which you generate? YES ☐ NO ☐

Comment: \_\_\_\_\_

Other Comments : \_\_\_\_\_

#### Questions about sharing:

Have you ever heard of this concept where you can share things through a third-party system?

YES ☐ NO ☐ Comment: \_\_\_\_\_

Have you previously used any facility for sharing objects? YES ☐ NO ☐

Comment: \_\_\_\_\_

If yes, what was your experience from that? Did it work well or not? YES ☐ NO ☐

Comment: \_\_\_\_\_

Do you often borrow or lend things to your friends? YES ☐ NO ☐

Comment: \_\_\_\_\_

Can you imagine yourself sharing leisure items (e.g. games, grill, sports gear etc.) with other tenants in your building? YES ☐ NO ☐

Comment: \_\_\_\_\_

Can you imagine yourself sharing household appliances (iron, waffle maker, blender etc.) with other tenants in your building? YES ☐ NO ☐

Why/why not? \_\_\_\_\_

Do you see any problems with sharing such things as mentioned in the two previous questions?

YES ☐ NO ☐ If yes, why? \_\_\_\_\_

Do you own many things which you only use on rare occasions? YES ☐ NO ☐

Comment: \_\_\_\_\_

Could you imagine sharing those things with other tenants in your building? YES ☐ NO ☐

Why/why not? \_\_\_\_\_

Do you think that you will borrow things from this facility in the HSB Living Lab? YES ☐ NO ☐

YES ☐ NO ☐ Why/why not? \_\_\_\_\_

Do you think that you will lend some of your own things to this facility in the Hsb Living Lab?

YES ☐ NO ☐ Why/why not? \_\_\_\_\_

Do you think that this facility will prevent you from buying some things for yourself? YES ☐ NO ☐

Comment: \_\_\_\_\_

Other Comments : \_\_\_\_\_

Thank you!



# C

## HSB Living Lab, Survey I, responses

Svar på enkäten till hyresgästerna i HSB Living Lab, aug/sep 2016.

## Compilation of survey responses

Survey concerning sharing and swapping, performed 1st to 22nd of September 2016. Total 17 respondents.

### Questions about swapping:

Question	Response	Comment
Have you ever heard of this concept where you can swap things through a third-party system?	Yes 10 No 6 - 1	Klädbytardagar och bokbytarhyllor. There is supposedly a free shop at Olofshöjd. Kind of "hostellike".
Have you previously used any facility for swapping objects?	Yes 5 No 12	Klädbytardagar och bokbytarhyllor. Swapping books.
If yes, what was your experience from that? Did it work well or not?	Yes 5 No - 12	Perfect while backpacking.
Do you often swap things with your friends?	Yes 5 No 12	Mostly books and similar. I tend to be very careful and protective of the things that I own. Sometimes clothes.
What do you normally do when you need to get rid of an object which you no longer wish to own?	Throw in garbage 5 Donate to second hand/charity 11 Give to a friend 6 Use swapping system to give it to someone who I don't personally know Other	I used to leave it with a "take me home" note outside my apartment. Sell. Maybe sell it at a yard sale. Det beror på i vilket skick objektet är.
Could you imagine yourself using things which have been previously owned by other tenants in your building?	Yes 17 No	Why not? Så länge det är fräscht. Saves waste and some money. I often buy second hand stuff. Depends on what it is and as long as it works. Om det är fint så spelar det väl ingen

		roll om någon haft det innan.
Do you see any problems with swapping objects with other tenants in your building?	Yes 2 No 14 - 1	Could potentially spread lice in the building (not likely in a new building like HLL though). I have special interests. Sharing is always good because it helps in building good relationship
Do you think that you will take things from this facility in the HSB Living Lab?	Yes 12 No 3 - 2	Most likely books. I have most of what I need. If I find them useful. Depends on what it is. Maybe. Om det är något jag behöver. If I find something I like and need.
Do you think you will give away (unwanted) things to this facility in the HSB Living Lab?	Yes 15 No 2	Most likely books. I sell my shit. If it will be of help to someone. Better than just collecting dust. If I don't use it it feels better if someone else does. Jag har redan ställt ner något som jag inte behöver längre. If I have things I don't need.
Do you think that such facility would make you buy less new things?	Yes 11 No 6	Inte säkert att det man behöver finns där. I like having a warranty. If there is alternative, it will always save cost
Do you think this facility will reduce the amount of waste which you generate?	Yes 13 No 4	It's like recycling no accumulation. Lätt att bara ställa ner något än att åka till

		second hand eller återvinningscentral.
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Questions about sharing:

Have you ever heard of this concept where you can share things through a third-party system?	Yes 11 No 6	Car pools and similar. Air bnb?
Have you previously used any facility for sharing objects?	Yes 3 No 14	Been in a car pool.
If yes, what was your experience from that? Did it work well or not?	Yes 3 No - 14	Worked out fine.
Do you often borrow or lend things to your friends?	Yes 11 No 5 - 1	Mostly books. Sometimes.
Can you imagine yourself sharing leisure items (e.g. games, grill, sports gear etc.) with other tenants in your building?	Yes 16 No 1	However it depends on other factors. As I said before, I am very careful and protective of my things.
Can you imagine yourself sharing household appliances (iron, waffle maker, blender etc.) with other tenants in your building?	Yes 15 No 2	It builds good human relationship. Seems like a good idea to share things that aren't used that often. We already do.
Do you see any problems with sharing such things as mentioned in the two previous questions?	Yes 2 No 12 - 3	People suck at taking care of things. The objects might receive less maintenance than when owned by a single person.
Do you own many things which you only use on rare occasions?	Yes 9 No 8	As a collector t should be this way.
Could you imagine sharing those things with other tenants in your building?	Yes 12 No 2 - 3	Not fragile/volatile things etc.
Do you think that you will borrow things from this facility in the HSB Living Lab?	Yes 16 No - 1	If there is the need. Depends on what it is. Mainly household appliances.

Do you think that you will lend some of your own things to this facility in the Hsb Living Lab?	Yes 14 No 3	Yes because we all need to support each other where is the need. Don't own anything to share. Maybe a waffle iron.
Do you think that this facility will prevent you from buying some things for yourself?	Yes 11 No 4 - 2	If it contains things I would like to borrow. It depends
Other comments		This is a good model for building confidence in the society.



# D

## HSB Living Lab, Survey II, questions

Enkät till hyresgästerna i HSB Living Lab, april/maj 2017.

# Sharing in HSB Living Lab

*'Access without ownership' can mean anything from libraries and streaming services to carpooling or bike sharing schemes. There are also variants where you can borrow, trade or share things like clothing, tools or toys with others.*

*This survey aims to collect your experiences and thoughts on joint ownership and ultimately to find determinants of how to construct such a system in a good way.*

*The responses will be used to develop a structure for sharing within the HSB Living Lab and the responses are treated confidentially. The survey is expected to take 20 minutes.*

*THANK YOU for contributing to our study!*

## Background

Age: \_\_\_\_\_

### Occupation

- |                                                                       |                                                    |
|-----------------------------------------------------------------------|----------------------------------------------------|
| <input type="checkbox"/> Student                                      | <input type="checkbox"/> Employed in public sector |
| <input type="checkbox"/> Researcher, PhD or other academic employment | <input type="checkbox"/> Unemployed                |
| <input type="checkbox"/> Employed in private sector                   | <input type="checkbox"/> Prefer not to answer      |
|                                                                       | <input type="checkbox"/> Other: _____              |

## Swap Cube

*Swap Cube, a space in HSB Living Lab where you can drop off and pick up items for free, has been in operation since autumn last year. There, you can leave things that you no longer have use for, or take other's items. The items you pick up or drop off are, at the moment, registered in a notebook.*

*We have a few questions about your experience of the Swap Cube so far.*

### Have you used the Swap Cube?

- |                                                  |                                                                     |
|--------------------------------------------------|---------------------------------------------------------------------|
| <input type="checkbox"/> Yes, dropped off things | <input type="checkbox"/> Yes, both dropped off and picked up things |
| <input type="checkbox"/> Yes, picked up things   | <input type="checkbox"/> No                                         |

### What aspects of Swap Cube have worked well?

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### What aspects of Swap Cube have been flawed?

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### If you have not used the Swap Cube, why not?

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### Would you like Swap Cube to be kept in operation?

- |                              |                             |                                       |
|------------------------------|-----------------------------|---------------------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> I don't know |
|------------------------------|-----------------------------|---------------------------------------|

### Comments:

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## Sharing services

*Sharing services make items and goods available when you need them, without the need to purchase. You can also borrow or rent things you seldom use. A library is an example of a sharing service, while other services deal with e.g. renting out flats when the owners are away (as the case for Airbnb).*

*Examples of sharing services: Dela Mera, Airbnb, libraries (media, books, magazines, films), Styr & Ställ (a bicycle rental service), clothing libraries, tool pools, Facebook groups for sharing, freemarkets, smartphone applications for lending and renting.*

**Have you, during the course of the last three years, used sharing services?**

☐ Yes

☐ No

**Which sharing service(s) have you used during the last three years?**

☐ Dela mera

☐ Airbnb

☐ Libraries (media, books, magazines, films)

☐ Styr & Ställ (rental bicycles)

☐ Clothing libraries

☐ Tool pool

☐ Facebook groups

☐ Freemarkets

☐ Apps for lending and renting

☐ Other: \_\_\_\_\_

**Was it to...**

☐ Borrow/rent things

☐ Lend/rent out things

☐ Both

**How was your experience of sharing things in such a way? What aspects have been positive and negative, respectively?**

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**Think back on the occasions where you have not used sharing services even though you could have used them. (If you have used sharing services before: consider the occasions where you chose NOT to use them.) Was it because...**

☐ I did not know they existed

☐ I did not find them convenient

☐ They were not available when or where I needed them

☐ They cost money

☐ I could not make financial profit off of them

☐ They did not seem trustworthy

☐ I always use sharing services

☐ Other: \_\_\_\_\_

**Comments:**

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**Do you borrow things from your family/friends/neighbours? If so, what things? If not, why not?**

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## Values on sharing

*We have some questions about how you feel about sharing and ownership. Many things such as tools, kitchen appliances, sports and outdoor equipment, clothing and electronics are used only occasionally, and thus may be borrowed or shared with others to increase the utilization rate.*

## Sharing is...

[illegible]

## What about sharing is important?

- ☐ Environmental benefits (saving resources and waste)
  - ☐ Sense of community (getting closer to one another)
  - ☐ Economic benefits (less spending on purchases)
  - ☐ Access to a wider range of things
  - ☐ To not have to store things at home
  - ☐ Nothing about sharing is important
  - ☐ Other: \_\_\_\_\_

### Who would you share items with?

- ☐ Family
 ☐ Anyone
- ☐ Friends
 ☐ No one
- ☐ Neighbours
 ☐ Other: \_\_\_\_\_
- ☐ Facebook friends

### What hinders you from sharing with others?

- ☐ That I don't know them
  - ☐ The risk that the things are damaged or disappear
  - ☐ Desire for ownership
  - ☐ It seems complicated
  - ☐ It seems unsafe
  - ☐ It seems unhygienic
  - ☐ Nothing hinders me
  - ☐ Other: \_\_\_\_\_

### What would make the hindrance smaller?

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## Wishes

*Here you describe your preferences on how a system for sharing would look like in HSB Living Lab.*

### Would you rather share things in a system...

- ☐ Where the things are owned by the users (and one can borrow, lend or rent anything)
- ☐ Where the things have been acquired by somebody else, e.g. HSB or sponsors (and one can borrow or rent specific items or product categories)
- ☐ Other: \_\_\_\_\_

### Comments:

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### Would you rather share things in a system...

- ☐ That is managed by the users
- ☐ That is managed by an employee (e.g. janitor)
- ☐ Other: \_\_\_\_\_

### Comments:

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### Would you rather share things in a system...

- ☐ Where things are borrowed or lent privately (in apartments)
- ☐ Where things are available in public areas (e.g. laundry room)
- ☐ Other: \_\_\_\_\_

### Comments:

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### Would you rather share things in a system...

- ☐ That is for the tenants of the building
- ☐ That is for tenants of HSB as a whole
- ☐ Other: \_\_\_\_\_

**Comments:**

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**Would you rather share things in a system...**

- ☐ Without fees
- ☐ Where things are lent for a fee
- ☐ Other: \_\_\_\_\_

**Comments:**

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## To BORROW and to LEND

*The following questions are divided into two parts: First, we wonder what things would you be willing to BORROW FROM your neighbours. Second, we wonder what things you would be willing to LEND TO your neighbours.*

### What things would you be willing to BORROW from your neighbours in HSB Living Lab?

#### Electronics

- ☐ TV
- ☐ Stereo
- ☐ Video games
- ☐ Printer
- ☐ Calculator
- ☐ USB sticks
- ☐ Other: \_\_\_\_\_

#### Kitchen appliances

- ☐ Food processor
- ☐ Waffle iron
- ☐ Electric handmixer
- ☐ Hand blender
- ☐ Other: \_\_\_\_\_

#### Tools

- ☐ 3D printer
- ☐ Screwdriver
- ☐ Power drill
- ☐ Hammer
- ☐ Saw
- ☐ Garden tools
- ☐ Other: \_\_\_\_\_

#### Home

- ☐ Foldable chairs
- ☐ Inflatable mattress
- ☐ Ladder

- ☐ Iron
- ☐ Sewing machine
- ☐ Vacuum cleaner
- ☐ Window cleaning utensils
- ☐ Other: \_\_\_\_\_

#### Leisure

- ☐ Grill
- ☐ Bike
- ☐ Bicycle cart
- ☐ Bicycle pump
- ☐ Bicycle helmet
- ☐ Tent
- ☐ Other: \_\_\_\_\_

#### Sports and playing equipment

- ☐ "Kubb" (lawn game)
- ☐ Rounders
- ☐ Balls (e.g. football, basketball)
- ☐ Dumbbells
- ☐ Other: \_\_\_\_\_

#### Other

- ☐ Clothes
- ☐ Bags
- ☐ Books
- ☐ Board games
- ☐ Toys
- ☐ Other: \_\_\_\_\_

### Under what conditions would you borrow things from your neighbours?

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**What things would you be willing to LEND to your neighbours in HSB Living Lab?**

**Electronics**

- ☐ TV
- ☐ Stereo
- ☐ Video games
- ☐ Printer
- ☐ Calculator
- ☐ USB sticks
- ☐ Other: \_\_\_\_\_

**Kitchen appliances**

- ☐ Food processor
- ☐ Waffle iron
- ☐ Electric handmixer
- ☐ Hand blender
- ☐ Other: \_\_\_\_\_

**Tools**

- ☐ 3D printer
- ☐ Screwdriver
- ☐ Power drill
- ☐ Hammer
- ☐ Saw
- ☐ Garden tools
- ☐ Other: \_\_\_\_\_

**Home**

- ☐ Foldable chairs
- ☐ Inflatable mattress
- ☐ Ladder

- ☐ Iron
- ☐ Sewing machine
- ☐ Vacuum cleaner
- ☐ Window cleaning utensils
- ☐ Other: \_\_\_\_\_

**Leisure**

- ☐ Grill
- ☐ Bike
- ☐ Bicycle cart
- ☐ Bicycle pump
- ☐ Bicycle helmet
- ☐ Tent
- ☐ Other: \_\_\_\_\_

**Sports and playing equipment**

- ☐ "Kubb" (lawn game)
- ☐ Rounders
- ☐ Balls (e.g. football, basketball)
- ☐ Dumbbells
- ☐ Other: \_\_\_\_\_

**Other**

- ☐ Clothes
- ☐ Bags
- ☐ Books
- ☐ Board games
- ☐ Toys
- ☐ Other: \_\_\_\_\_

**Under what conditions would you lend things to your neighbours?**

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## To OWN and to BORROW

*The following questions are divided into two parts: First, we wonder what things you feel you NEED TO OWN YOURSELF. Second, we wonder what things you could BORROW EVERY TIME you need them.*

### What things do you NEED TO OWN yourself?

#### Electronics

- ☐ TV
- ☐ Stereo
- ☐ Video games
- ☐ Printer
- ☐ Calculator
- ☐ USB sticks
- ☐ Other: \_\_\_\_\_

#### Kitchen appliances

- ☐ Food processor
- ☐ Waffle iron
- ☐ Electric handmixer
- ☐ Hand blender
- ☐ Other: \_\_\_\_\_

#### Tools

- ☐ 3D printer
- ☐ Screwdriver
- ☐ Power drill
- ☐ Hammer
- ☐ Saw
- ☐ Garden tools
- ☐ Other: \_\_\_\_\_

#### Home

- ☐ Foldable chairs
- ☐ Inflatable mattress
- ☐ Ladder

- ☐ Iron
- ☐ Sewing machine
- ☐ Vacuum cleaner
- ☐ Window cleaning utensils
- ☐ Other: \_\_\_\_\_

#### Leisure

- ☐ Grill
- ☐ Bike
- ☐ Bicycle cart
- ☐ Bicycle pump
- ☐ Bicycle helmet
- ☐ Tent
- ☐ Other: \_\_\_\_\_

#### Sports and playing equipment

- ☐ "Kubb" (lawn game)
- ☐ Rounders
- ☐ Balls (e.g. football, basketball)
- ☐ Dumbbells
- ☐ Other: \_\_\_\_\_

#### Other

- ☐ Clothes
- ☐ Bags
- ☐ Books
- ☐ Board games
- ☐ Toys
- ☐ Other: \_\_\_\_\_

### Comments:

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**What things could you BORROW EVERY TIME you need them?**

**Electronics**

- ☐ TV
- ☐ Stereo
- ☐ Video games
- ☐ Printer
- ☐ Calculator
- ☐ USB sticks
- ☐ Other: \_\_\_\_\_

**Kitchen appliances**

- ☐ Food processor
- ☐ Waffle iron
- ☐ Electric handmixer
- ☐ Hand blender
- ☐ Other: \_\_\_\_\_

**Tools**

- ☐ 3D printer
- ☐ Screwdriver
- ☐ Power drill
- ☐ Hammer
- ☐ Saw
- ☐ Garden tools
- ☐ Other: \_\_\_\_\_

**Home**

- ☐ Foldable chairs
- ☐ Inflatable mattress
- ☐ Ladder

- ☐ Iron
- ☐ Sewing machine
- ☐ Vacuum cleaner
- ☐ Window cleaning utensils
- ☐ Other: \_\_\_\_\_

**Leisure**

- ☐ Grill
- ☐ Bike
- ☐ Bicycle cart
- ☐ Bicycle pump
- ☐ Bicycle helmet
- ☐ Tent
- ☐ Other: \_\_\_\_\_

**Sports and playing equipment**

- ☐ "Kubb" (lawn game)
- ☐ Rounders
- ☐ Balls (e.g. football, basketball)
- ☐ Dumbbells
- ☐ Other: \_\_\_\_\_

**Other**

- ☐ Clothes
- ☐ Bags
- ☐ Books
- ☐ Board games
- ☐ Toys
- ☐ Other: \_\_\_\_\_

**Comments:**

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## Additional comments

**Do you have any additional ideas or comments?**

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**Would you be willing to contribute further to our study, e.g. through a workshop? Please write your e-mail address or phone number below! You will be rewarded with a cinema ticket for the effort.**

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# E

## HSB Living Lab, Survey II, responses

Svar på enkäten till hyresgästerna i HSB Living Lab, april/maj 2017.

# Sharing in HSB Living Lab

*'Access without ownership' can mean anything from libraries and streaming services to carpooling or bike sharing schemes. There are also variants where you can borrow, trade or share things like clothing, tools or toys with others.*

*This survey aims to collect your experiences and thoughts on joint ownership and ultimately to find determinants of how to construct such a system in a good way.*

*The responses will be used to develop a structure for sharing within the HSB Living Lab and the responses are treated confidentially. The survey is expected to take 20 minutes.*

*THANK YOU for contributing to our study!*

## Background

**Age:** 18: 1, 21: 1, 22: 4, 23: 2, 24: 1, 27: 1, 28: 3, 38: 1, 57: 1

### Occupation

- |                                                                         |                                                      |
|-------------------------------------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> Student 10                                     | <input type="checkbox"/> Employed in public sector 1 |
| <input type="checkbox"/> Researcher, PhD or other academic employment 3 | <input type="checkbox"/> Unemployed                  |
| <input type="checkbox"/> Employed in private sector 1                   | <input type="checkbox"/> Prefer not to answer        |
|                                                                         | <input type="checkbox"/> Other: _____                |

## Swap Cube

*Swap Cube, a space in HSB Living Lab where you can drop off and pick up items for free, has been in operation since autumn last year. There, you can leave things that you no longer have use for, or take other's items. The items you pick up or drop off are, at the moment, registered in a notebook.*

*We have a few questions about your experience of the Swap Cube so far.*

### Have you used the Swap Cube?

- |                                                           |                                                                              |
|-----------------------------------------------------------|------------------------------------------------------------------------------|
| <input type="checkbox"/> Yes, dropped off things <b>3</b> | <input type="checkbox"/> Yes, both dropped off and picked up things <b>4</b> |
| <input type="checkbox"/> Yes, picked up things <b>5</b>   | <input type="checkbox"/> No <b>3</b>                                         |

### What aspects of Swap Cube have worked well?

- Bra att man har möjligheten!
- Praktiskt att inte behöva köpa saker innan en kollat om det finns i Swap Cube.
- The book keeping system.
- Found some cool stuff
- Det finns alltid fler behov än sina egna, att kunna lämna saker som andra har användning för sparar på allas resurser.
- Jag har hittat ett par saker, såsom dörrhängda krokar, som jag har behövt
- Tillit
- Delandet.
- jag har hittat nån bra grej jag behövt
- Location and convenience
- Fun thing. Easy to swap things.

### What aspects of Swap Cube have been flawed?

- Det kommer inte så ofta nya grejer!
- Utbudet är rätt begränsat.
- Nothing I can think of.
- Inget direkt
- Kan bli att man dumpar skräp man inte vill ha där
- Inte så många intresserade
- Det känns som att den är allt för isolerad till boende i LL. Hade hellre sett en lösning där många fler får tillgång till den. Hade dessutom varit härligt om alla i huset fick en liten "utbildning" vad ni vill uppnå med Swap Cube.
- den är ganska oaktiv
- Some more trash-like items left and never taken.

**If you have not used the Swap Cube, why not?**

- Jag äger inte massor saker som jag inte vill ha, och jag har inte behov/intresse av saker som finns i vår Swap Cube.
- There hasn't been anything I'd like to share

**Would you like Swap Cube to be kept in operation?**

- |                                        |                                  |
|----------------------------------------|----------------------------------|
| <input type="checkbox"/> Yes <b>10</b> | <input type="checkbox"/> I don't |
| <input type="checkbox"/> No            | know/Maybe <b>5</b>              |

**Comments:**

- Det kanske borde vara i perioder istället för hela tiden och att innehållet flyttar runt mellan olika swap cubes för att det inte skall gå i stå.
- I've used it once and didn't think about it a lot.
- men det förutsätter att den blir mer aktiv
- Ingen åsikt.
- Really good thing! Easy to get rid of clothes that are too small or books you've finished.

## Sharing services

*Sharing services make items and goods available when you need them, without the need to purchase. You can also borrow or rent things you seldom use. A library is an example of a sharing service, while other services deal with e.g. renting out flats when the owners are away (as the case for Airbnb).*

*Examples of sharing services: Dela Mera, Airbnb, libraries (media, books, magazines, films), Styr & Ställ (a bicycle rental service), clothing libraries, tool pools, Facebook groups for sharing, freemarkets, smartphone applications for lending and renting.*

**Have you, during the course of the last three years, used sharing services?**

☐ Yes **12**

☐ No **3**

**Which sharing service(s) have you used during the last three years?**

☐ Dela mera

☐ Airbnb **6**

☐ Libraries (media, books, magazines, films) **9**

☐ Styr & Ställ (rental bicycles) **5**

☐ Clothing libraries **1**

☐ Tool pool

☐ Facebook groups **4**

☐ Freemarkets

☐ Apps for lending and renting **1**

☐ None **3**

☐ Other: \_\_\_\_\_

**Was it to...**

☐ Borrow/rent things **7**

☐ Lend/rent out things

☐ Both **5**

**How was your experience of sharing things in such a way? What aspects have been positive and negative, respectively?**

- Det var bra!
- Positive
- Libraries is an excellent institution. Saved a lot not having to buy course literature.
- Generellt trevligt, inte alltid man kan investera så mycket direkt
- Att hyra bil ibland är fint, eftersom det är för dyrt för mig som student att äga bil\
- Worked well.
- Airbnb was smooth but renting out my own flat didn't. It was hard to check whom was reliable + be responsible for complaints from my landlord

**Think back on the occasions where you have not used sharing services even though you could have used them. (If you have used sharing services before: consider the occasions where you chose NOT to use them.) Was it because...**

- |                                                                                        |                                                                                 |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <input type="checkbox"/> I did not know they existed <b>8</b>                          | <input type="checkbox"/> I could not make financial profit off of them <b>2</b> |
| <input type="checkbox"/> I did not find them convenient <b>7</b>                       | <input type="checkbox"/> They did not seem trustworthy <b>2</b>                 |
| <input type="checkbox"/> They were not available when or where I needed them <b>10</b> | <input type="checkbox"/> I always use sharing services                          |
| <input type="checkbox"/> They cost money <b>3</b>                                      | <input type="checkbox"/> Other: _____                                           |

**Comments:**

- It really depends on the circumstances. Sometimes it didn't work for one reason, other times because of something else. It's a complement - not always the best choice if even possible.

**Do you borrow things from your family/friends/neighbours? If so, what things? If not, why not?**

- Ja
- Ja, böcker.
- Tools
- Sometimes, often Kitchen supplies.
- Books, tools, food, vehicles...
- Ja, spel, böcker, tidningar, verktyg, bil
- Nej. Behöver sällan något som jag inte har.
- Kaffe, ägg, övriga matvaror
- Nej
- Jag vill ha mina egna saker
- Torrvaror
- litegrann, typ Photoshop och kläder
- Clothes from sisters when in Canada. No friends here with my style/size
- Sometimes. If I want to play a game of thiers.
- Kitchen supplies, books

## Values on sharing

*We have some questions about how you feel about sharing and ownership. Many things such as tools, kitchen appliances, sports and outdoor equipment, clothing and electronics are used only occasionally, and thus may be borrowed or shared with others to increase the utilization rate.*

**Sharing is... (0 = Completely unimportant, 5 = Highly important)**

- |                              |                              |
|------------------------------|------------------------------|
| <input type="checkbox"/> 0   | <input type="checkbox"/> 3 5 |
| <input type="checkbox"/> 1   | <input type="checkbox"/> 4 6 |
| <input type="checkbox"/> 2 2 | <input type="checkbox"/> 5 2 |

**What about sharing is important?**

- |                                                                                 |                                                                |
|---------------------------------------------------------------------------------|----------------------------------------------------------------|
| <input type="checkbox"/> Environmental benefits (saving resources and waste) 14 | <input type="checkbox"/> Access to a wider range of things 10  |
| <input type="checkbox"/> Sense of community (getting closer to one another) 4   | <input type="checkbox"/> To not have to store things at home 7 |
| <input type="checkbox"/> Economic benefits (less spending on purchases) 13      | <input type="checkbox"/> Nothing about sharing is important    |
|                                                                                 | <input type="checkbox"/> Other: _____                          |

**Who would you share items with?**

- |                                             |                                       |
|---------------------------------------------|---------------------------------------|
| <input type="checkbox"/> Family 15          | <input type="checkbox"/> Anyone 2     |
| <input type="checkbox"/> Friends 15         | <input type="checkbox"/> No one       |
| <input type="checkbox"/> Neighbours 11      | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Facebook friends 4 |                                       |

### What hinders you from sharing with others?

- |                                                                               |                                                |
|-------------------------------------------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> That I don't know them 4                             | <input type="checkbox"/> It seems unsafe 2     |
| <input type="checkbox"/> The risk that the things are damaged or disappear 11 | <input type="checkbox"/> It seems unhygienic 4 |
| <input type="checkbox"/> Desire for ownership 6                               | <input type="checkbox"/> Nothing hinders me    |
| <input type="checkbox"/> It seems complicated 7                               | <input type="checkbox"/> Other                 |

### What would make the hindrance smaller?

- En tredje part som har koll på att allt går rätt till (om man inte känner personen)
- Att göra det lätt att dela.
- A guarantee of economical compensation when something has been damaged after use or not properly cleaned and so on..
- I'm a person who likes to collect things so for me the step away from Desiree for ownership is a big One.
- Need a change in society from capitalism
- Not sure
- Konsekvenser vid felanvändning/
- Om vissa människor inte var så vårdslösa.
- Någonting som gör att man kommer runt slitageproblemet
- Att jag hade vetat andra bryr sig om mina saker lika mkt som jag bryr mig om deras när jag lånar något
- En liten app med ett avtal kanske - påminnelser etc.
- vet inte
- Depends on what is shared
- I don't know

## Wishes

*Here you describe your preferences on how a system for sharing would look like in HSB Living Lab.*

### Would you rather share things in a system...

- ☐ Where the things are owned by the users (and one can borrow, lend or rent anything) 9
- ☐ Where the things have been acquired by somebody else, e.g. HSB or sponsors (and one can borrow or rent specific items or product categories) 3
- ☐ Other 3

### Comments:

- Varför inte en kombination?
- Om saker bara är från sponsorer så slutar folk bry sig om skicket (pingisbordet/köksutrustningen), om det ägs av någon så tar folk det lugnare.
- Less personal responsibility.
- Depends on what one is sharing

### Would you rather share things in a system...

- ☐ That is managed by the users 3
- ☐ That is managed by an employee (e.g. janitor) 9
- ☐ Other 3

### Comments:

- Varför inte en kombination? Jag tror det är viktigt att någon specifik har det yttersta ansvaret oavsett.
- It's usually better to have someone who is responsible.
- Depends on what one is sharing

### Would you rather share things in a system...

- ☐ Where things are borrowed or lent privately (in apartments) 5
- ☐ Where things are available in public areas (e.g. laundry room) 9
- ☐ Other 1

### Comments:

- Mer lättillgängligt är nyckeln tror jag.
- Om dom finns i lägenheter så finns en risk att inte få tag på det man behöver när man behöver det, vi har inga ringklockor heller!
- Om prylar ligger på en allmän plats så har ingen person uppsyn eller koll på vad som finns där. Det blir väldigt lätt för någon att ta något utan att skriva upp sig och sen glömma bort det, samt för människor att dumpa sin skit där i en stor hög.
- More accessible.
- Depends on what one is sharing. It has to be practical, safe, easy, hygienic and so on. HOW Differs between products

### Would you rather share things in a system...

- ☐ That is for the tenants of the building 14
- ☐ That is for tenants of HSB as a whole
- ☐ Other 1

### Comments:

- Snarare för tillgängligheten än tryggheten.
- För stor pool går inte hantera smidigt, många små pooler som hanterar sig själva är en tryggare tanke.
- Det är viktigt att saker finns nära!
- Feels more secure.
- Same answer! Can't generalize it.

**Would you rather share things in a system...**

- ☐ Without fees 7
- ☐ Where things are lent for a fee 3
- ☐ Other 5

**Comments:**

- Hyra saker går ju göra redan. Eventuellt kan en ha en deposition för att vara med.
- A small monthly/yearly fee is ok, but not per usage
- Gratis är gott. :P
- No fees are nice, but maybe not so practical for alot of things

## To BORROW and to LEND

*The following questions are divided into two parts: First, we wonder what things would you be willing to BORROW FROM your neighbours. Second, we wonder what things you would be willing to LEND TO your neighbours.*

### What things would you be willing to BORROW from your neighbours in HSB Living Lab?

#### Electronics

- ☐ TV
- ☐ Stereo
- ☐ Video games
- ☐ Printer
- ☐ Calculator
- ☐ USB sticks
- ☐ Other: \_\_\_\_\_

#### Kitchen appliances

- ☐ Food processor
- ☐ Waffle iron
- ☐ Electric handmixer
- ☐ Hand blender
- ☐ Other: \_\_\_\_\_

#### Tools

- ☐ 3D printer
- ☐ Screwdriver
- ☐ Power drill
- ☐ Hammer
- ☐ Saw
- ☐ Garden tools
- ☐ Other: \_\_\_\_\_

#### Home

- ☐ Foldable chairs
- ☐ Inflatable mattress
- ☐ Ladder

- ☐ Iron
- ☐ Sewing machine
- ☐ Vacuum cleaner
- ☐ Window cleaning utensils
- ☐ Other: \_\_\_\_\_

#### Leisure

- ☐ Grill
- ☐ Bike
- ☐ Bicycle cart
- ☐ Bicycle pump
- ☐ Bicycle helmet
- ☐ Tent
- ☐ Other: \_\_\_\_\_

#### Sports and playing equipment

- ☐ "Kubb" (lawn game)
- ☐ Rounders
- ☐ Balls (e.g. football, basketball)
- ☐ Dumbbells
- ☐ Other: \_\_\_\_\_

#### Other

- ☐ Clothes
- ☐ Bags
- ☐ Books
- ☐ Board games
- ☐ Toys
- ☐ Other: \_\_\_\_\_

**Under what conditions would you borrow things from your neighbours?**

- Om det är större grejer som jag inte vill äga, men använda ibland!
- Att det var enkelt att göra det.
- when needed
- That I trust Them and I Know what for and when the productions I lens Them is used.
- I know my neighbour
- If I wanted them
- Om jag inte har det själv och vet att någon granne har men använder ej.
- Utan förutsättningar.
- Känner personen väl
- När det är ömsesidigt
- -
- okränkligt
- If I need something quickly and for a short time
- If it was easy. And I knew what they had.
- If it's for free

**What things would you be willing to LEND to your neighbours in HSB Living Lab?**

**Electronics**

- ☐ TV
- ☐ Stereo
- ☐ Video games
- ☐ Printer
- ☐ Calculator
- ☐ USB sticks
- ☐ Other: \_\_\_\_\_
- ☐ Iron
- ☐ Sewing machine
- ☐ Vacuum cleaner
- ☐ Window cleaning utensils
- ☐ Other: \_\_\_\_\_

**Kitchen appliances**

- ☐ Food processor
- ☐ Waffle iron
- ☐ Electric handmixer
- ☐ Hand blender
- ☐ Other: \_\_\_\_\_
- ☐ Grill
- ☐ Bike
- ☐ Bicycle cart
- ☐ Bicycle pump
- ☐ Bicycle helmet
- ☐ Tent
- ☐ Other: \_\_\_\_\_

**Tools**

- ☐ 3D printer
- ☐ Screwdriver
- ☐ Power drill
- ☐ Hammer
- ☐ Saw
- ☐ Garden tools
- ☐ Other: \_\_\_\_\_
- ☐ "Kubb" (lawn game)
- ☐ Rounders
- ☐ Balls (e.g. football, basketball)
- ☐ Dumbbells
- ☐ Other: \_\_\_\_\_

**Home**

- ☐ Foldable chairs
- ☐ Inflatable mattress
- ☐ Ladder
- ☐ Clothes
- ☐ Bags
- ☐ Books
- ☐ Board games
- ☐ Toys
- ☐ Other: \_\_\_\_\_

**Leisure**

**Sports and playing equipment**

**Other**

### Under what conditions would you lend things to your neighbours?

- Om jag kunde vara ganska säker på att utlånet inte skulle förstöra sakerna
- Att jag kände att det tas hand om på ett bra sätt och att det var enkelt.
- with guarantee that everything is brought back clean and in perfect condition and in a timely manner.
- Same as before.
- Knowing them
- Freely if returned. If destroyed then something similar.
- Att jag ser vem som lånar och när, överenskommen återlämning.
- Att de lämnar tillbaka sakerna kompletta och i samma skick som de fick dem, samt att de gör det på eget initiativ inom en rimlig tid.
- Känner personen väl
- Vilket som
- -
- vet inte
- If I am not currently needing them
- If they ask nicely.
- If they take good care of it

## To OWN and to BORROW

*The following questions are divided into two parts: First, we wonder what things you feel you NEED TO OWN YOURSELF. Second, we wonder what things you could BORROW EVERY TIME you need them.*

### What things do you NEED TO OWN yourself?

#### Electronics

- ☐ TV
- ☐ Stereo
- ☐ Video games
- ☐ Printer
- ☐ Calculator
- ☐ USB sticks
- ☐ Other: \_\_\_\_\_

#### Kitchen appliances

- ☐ Food processor
- ☐ Waffle iron
- ☐ Electric handmixer
- ☐ Hand blender
- ☐ Other: \_\_\_\_\_

#### Tools

- ☐ 3D printer
- ☐ Screwdriver
- ☐ Power drill
- ☐ Hammer
- ☐ Saw
- ☐ Garden tools
- ☐ Other: \_\_\_\_\_

#### Home

- ☐ Foldable chairs
- ☐ Inflatable mattress
- ☐ Ladder

- ☐ Iron
- ☐ Sewing machine
- ☐ Vacuum cleaner
- ☐ Window cleaning utensils
- ☐ Other: \_\_\_\_\_

#### Leisure

- ☐ Grill
- ☐ Bike
- ☐ Bicycle cart
- ☐ Bicycle pump
- ☐ Bicycle helmet
- ☐ Tent
- ☐ Other: \_\_\_\_\_

#### Sports and playing equipment

- ☐ "Kubb" (lawn game)
- ☐ Rounders
- ☐ Balls (e.g. football, basketball)
- ☐ Dumbbells
- ☐ Other: \_\_\_\_\_

#### Other

- ☐ Clothes
- ☐ Bags
- ☐ Books
- ☐ Board games
- ☐ Toys
- ☐ Other: \_\_\_\_\_

### Comments:

- Jag behöver inte äga kläder men det känns som om jag sliter mer på dem än andra saker så det känns oschyst att låna.
- TV mest pga logistiska skäl, stora, tunga och dyra. Svårt att dela
- Nothing, really.
- I mainly just listen to records, love the look of having many books and owning bags is just practical but not necessary

**What things could you BORROW EVERY TIME you need them?**

**Electronics**

- |                                       |                                                   |
|---------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> TV           | <input type="checkbox"/> Iron                     |
| <input type="checkbox"/> Stereo       | <input type="checkbox"/> Sewing machine           |
| <input type="checkbox"/> Video games  | <input type="checkbox"/> Vacuum cleaner           |
| <input type="checkbox"/> Printer      | <input type="checkbox"/> Window cleaning utensils |
| <input type="checkbox"/> Calculator   | <input type="checkbox"/> Other: _____             |
| <input type="checkbox"/> USB sticks   |                                                   |
| <input type="checkbox"/> Other: _____ |                                                   |

**Kitchen appliances**

- |                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <input type="checkbox"/> Food processor     | <input type="checkbox"/> Grill          |
| <input type="checkbox"/> Waffle iron        | <input type="checkbox"/> Bike           |
| <input type="checkbox"/> Electric handmixer | <input type="checkbox"/> Bicycle cart   |
| <input type="checkbox"/> Hand blender       | <input type="checkbox"/> Bicycle pump   |
| <input type="checkbox"/> Other: _____       | <input type="checkbox"/> Bicycle helmet |
|                                             | <input type="checkbox"/> Tent           |
|                                             | <input type="checkbox"/> Other: _____   |

**Tools**

- |                                       |                                                            |
|---------------------------------------|------------------------------------------------------------|
| <input type="checkbox"/> 3D printer   | <input type="checkbox"/> "Kubb" (lawn game)                |
| <input type="checkbox"/> Screwdriver  | <input type="checkbox"/> Rounders                          |
| <input type="checkbox"/> Power drill  | <input type="checkbox"/> Balls (e.g. football, basketball) |
| <input type="checkbox"/> Hammer       | <input type="checkbox"/> Dumbbells                         |
| <input type="checkbox"/> Saw          | <input type="checkbox"/> Other: _____                      |
| <input type="checkbox"/> Garden tools |                                                            |
| <input type="checkbox"/> Other: _____ |                                                            |

**Home**

- |                                              |                                       |
|----------------------------------------------|---------------------------------------|
| <input type="checkbox"/> Foldable chairs     | <input type="checkbox"/> Clothes      |
| <input type="checkbox"/> Inflatable mattress | <input type="checkbox"/> Bags         |
| <input type="checkbox"/> Ladder              | <input type="checkbox"/> Books        |
|                                              | <input type="checkbox"/> Board games  |
|                                              | <input type="checkbox"/> Toys         |
|                                              | <input type="checkbox"/> Other: _____ |

**Leisure**

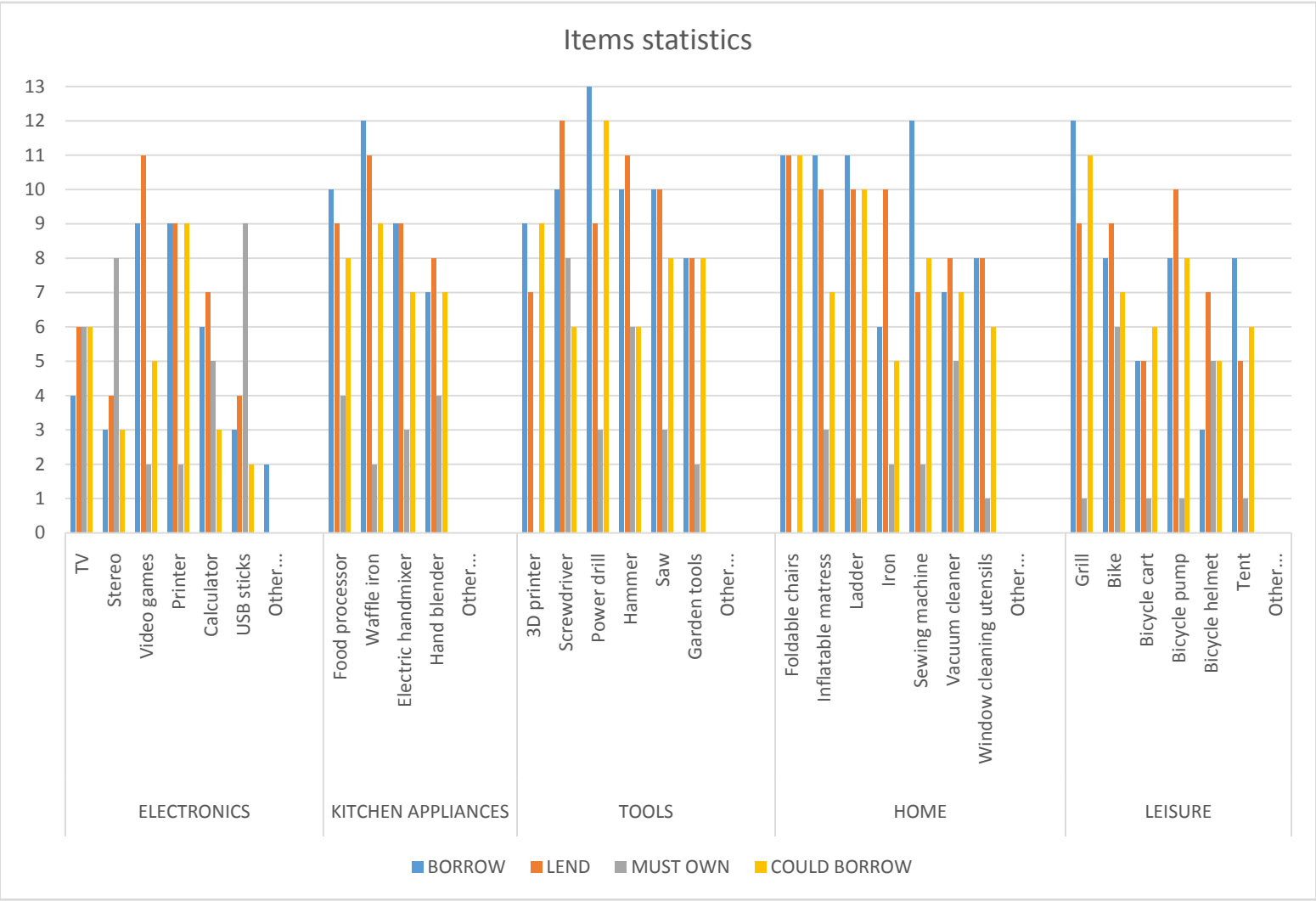
**Sports and playing equipment**

**Other**

**Comments:**

- The main question here is how easily accesible thing are. Could borrow more things if ALWAYS accessible, at all times of the day, and always clean and ready to use.
- Everything

Items statistics



## Additional comments

**Do you have any additional ideas or comments?**

- Varför ska så många behöva äga så mycket? Man hinner aldrig använda allt, hygienprodukter är personligt dock.
- Not really. But have a nice day! :)

**Would you be willing to contribute further to our study, e.g. through a brief interview?  
Please write your e-mail address or phone number below! You will be rewarded with a  
cinema ticket for the effort.**

[removed for privacy]