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Resource Consumption in Copenhagen Municipality During Residential Moving

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Abstract

This Master's Thesis researches how can Copenhagen Municipality foster a greater degree of circularity among its citizens when moving. The study focuses on resource consumption in three material categories: Textiles, electronics and furniture. Furthermore, the study takes departure in collaboration with Copenhagen Municipality in the development of the Climate Action Plan for 2035.

The topic of resource consumption whilst moving is very relevant for a metropolitan city like Copenhagen with more than 90.000 residents moving per year. The residential moving is connected to resource consumption from both acquiring new, and disposal of belongings. The approach of this study is rooted in taking the citizen's perspectives and experiences into the problematisation of resource consumption concerning moving. Therefore, the topic is researched using Practice Theory, Circular Economy, and Circular Societies. Eight residents who have recently moved have been interviewed and a survey has been conducted to gather data on resource consumption during the moving period.

This research shows that moving is a bundle of practices consisting of three main practices preparation, moving and settlement. Furthermore, two analyses show that consumption drivers are life-phase changes that result in new needs. The *practice of acquiring* and the *practice of disposing* have been identified and analysed. A workshop was conducted with residents and three field experts. Finally, two suggestions to foster circularity during moving have been made for Copenhagen Municipality. These suggestions have been designed to be suitable within the framing of CM's abilities to influence residential resource consumption.

Acknowledgements

During the master thesis, we had the privilege to work with and meet many people, to whom we owe our gratitude. Their contribution to our project was guiding and influential regarding the results and the direction of this project.

Firstly, we would like to thank our supervisor, who has relentlessly followed us through every step of the way and shown extreme devotion, enthusiasm, and eagerness to help. Thank you for your insightful supervision and for sharing your knowledge with us.

Wethank Copenhagen Municipality, especially Helene Albinus for the opportunity for collaboration and for sharing their project with us.

Furthermore, many thanks to the experts who have participated in our workshop Charlotte Louise Jensen from CONCITO and Julie Bangsgaard Abrahams from Rådet for Grøn Omstilling, as well as our residential moving expert Michel Bjørnskov Cirulli. Your professional insights have given us valuable and further knowledge on the topic.
Finally, we use this opportunity to thank our interview participants for insightful and long conversations and for devoting their time to participate in our project.

Thank you all for your collaboration!



Abbreviations

DBA - Den Blå Avis
FB Marketplace - Facebook Marketplace
CM - Copenhagen Municipality
CE - Circular Economy
CS - Circular Society
PT - Practice Theory
DIY - Do It Yourself

Terminology

Resource consumption	Resource consumption is applied to both the new resources coming into the material life cycle, and the resources coming out of the material life cycle. Resource consumption refers to the three material categories, listed in the scope of the project which are: textiles, electronics and furniture. More concretely, resource consumption is a term used to describe acquiring and disposing of items in these categories.
Life phase change	The term life phase change is used to describe a big event in life that results in a big change e.g. getting a first full-time job, moving in together with a partner, getting a child etc. Moving to a new residential address is also defined as a life phase change.
Good and bad consumption behaviour	Good and bad behaviour in consumption is a theoretical expression, later defined in the theory section. It is a theoretical way to express the material value of the item connected to personal behaviour.
Essential and non-essential needs	Essential needs are defined as ordinary needs e.g. for food, clothes, education, medicine, otherwise said indispensable. Where non-essential needs are defined as needs for items that are nice to have or luxuries. These needs are better described as desires or wishes.
Residential Moving	Residential moving is a term defined as the process of individuals moving their households into a new residence (address)
DIY - Do it yourself	Do it yourself is the activity of decorating or repairing your home, or making things for your home yourself, rather than paying someone else to do it for you.
DBA - Den Blå Avis	A Danish digital platform for buying and selling (primarily second-hand).

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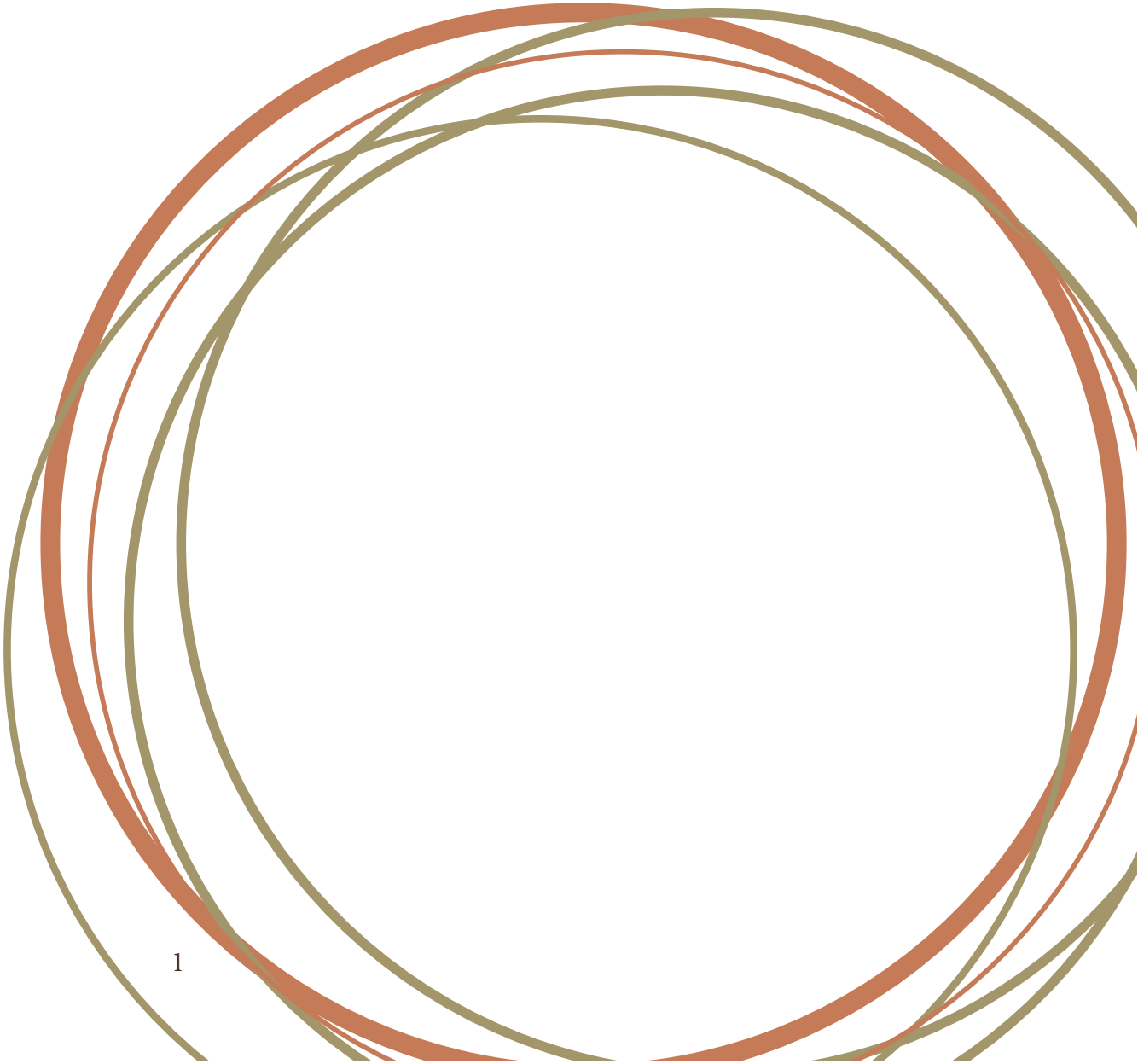
1.0 Introduction



Pic. 1.1. Erik Henningsens painting “Thrown out” (SMKb, n.d.)

In the National Gallery of Denmark, on the second floor, room 222 hangs an oil painting by Erik Henningsen painted in 1892. The painting portrays a family standing outside on a cold winter day, with all of their belongings, thrown out of their home, hence the name *thrown out* (SMKb, n.d.).

As can be seen, their belongings can be carried by them. All they have is some furniture, household goods, a few items of clothing, a duvet, and a pillow (ibid.). Whilst the father, on the right-hand side, is pleading his case to a police officer, the mother stands with her child and seems to have a baby on the way (ibid.).

With this painting, Erik Henningsen creates a contemporary reportage of an emotional story which people can sympathise with. This is the time for the modern breakthrough when some painters paint motives reflecting the social and political upheavals in Danish society (ibid.). As one of the most significant figures of the modern breakthrough, literature researcher Georg Brandes called it: "*set problems up for debate*" (*det moderne gennembrud - Tiden og litteraturen - lex.dk*, no date).
Erik Henningsen sets a problem up for debate by presenting the story of a poor family that is struck by fate's disfavour and in a changeable world is suddenly threatened by social misfortune (SMKb, n.d.). In this moving process, notice that the family seemingly leaves none of their belongings behind.
Even though a social critic painted this painting, which conveys injustice in Copenhagen society 132 years ago, a related scene can be seen in the streets of Copenhagen today. If the social and political standpoints of modern culture today were to be challenged, a very different picture would be painted.

On the one hand, it is arguably a success story that the welfare state and general economic prosperity ensure that poor families are rarely thrown out of their homes. On the other hand, it is a devastating consequence of consumerism that can be seen as the furniture, household goods, and textiles are left in the streets the time before bulk waste is picked up, as seen in the picture below.

Pic. 1.2. Bulk waste (*Storskrald | Vestforbrænding*, n.d.).

Picture 1.2. portrays one of the problems in society today: relation and approach to resources. More resources are being used and wasted than the Earth's biological systems can sustainably provide (Earth Overshoot Day n.d.; Ecological Footprint - Global Footprint Network, n.d).

The trending buy-and-throw-away culture is ubiquitous in Copenhagen which is indisputably related to the environmental- and climate crises. The city of Copenhagen and its citizens are a part of this picture. Fortunately, Copenhagen Municipality (CM) means to address this issue in the future Climate Action Plan towards 2035 (Bæredygtig Byudvikling, KK n.d.; (*Climate Plan 2035*, n.d.). This Climate Plan will be implemented from 2026 and up to 2035 (ibid).

What is particular about the 2035 Climate Action Plan is that the municipality wishes to address the citizens' consumption footprint and patterns in climate actions. This can be done in a variety of different areas. Consumer study shows that during residential moving in CM, a large quantity of resources are used and wasted (Daugaard *et al.*, 2019). According to the municipality, 90.000 moves happen yearly in the city ('Anonymised document 1', 2024). These residential moves are often caused by a life phase change, which are e.g. students finishing their studies and moving out of their dorm to their first own apartment, e.g. couples moving in together, or couples starting a family and moving to a bigger home etc. (Norion Consult, 2023). Therefore, it is relevant to ask, what can CM do about citizens' consumption related to moving, when the reasons for consumption seem to be interwoven with the various situations, values, circumstances and life phases.

2.0 State of the Art

2.1 Consumption Trends

According to the United Nations (UN), global natural resource consumption is forecasted to rise 60% by 2060 compared to the 2020 levels. This increasing demand for resources is happening due to urbanisation, growing population and industrialization (Charlton, 2024). The human impact on climate and environment has been visualised by the Stockholm Resilience Centre through a model of 9 of Earth's planetary boundaries (see footnote). Six planetary boundaries are in the red zone with some of their tipping points being already crossed, which puts the planet at further risk of which the consequences are unknown (Stockholm Resilience Centre, 2023). However, some of the consequences can already be seen like, loss of biodiversity, pollution, extreme weather events, risk of supply disruption of critical raw materials etc.

Action is urgently needed to ensure sustainable consumption of resources. In 2020 the New Circular Economy Action Plan in the European Union was adopted (European Commission, n.d.). As part of the supranational climate goal achievements, Denmark has an ambitious national goal of becoming a net zero country by 2045 (*IEA*, n.d.) However, the national efforts to lower virgin material consumption have not been very successful. According to the latest Circularity Gap Report 2024, Denmark is only 4% circular, making Denmark one of Europe's highest municipal waste-generating countries per capita (*The Circularity Gap Report Denmark*, 2024). The resources that are not being circulated are utilised through incineration of energy recovery to provide heat to industries and households (ibid).

Furthermore, the Danish material footprint is more than double (24.5 tons) the global average (11.9 tons) and triple the sustainable level (8 tons) per capita (ibid).

2.2 A Historical Development of Resource Consumption

To understand consumption today, a look back at how consumption has developed is made by using the history of furniture as an example.

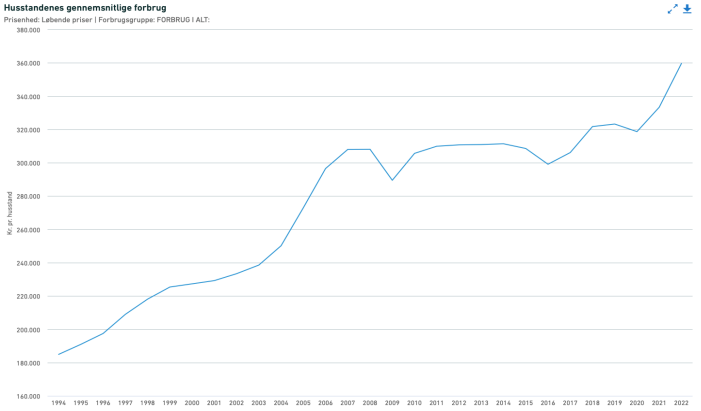
During the 20th century, the Danish income rose which made room in the budget for other things than necessities, resulting in an increased purchasing power. While Danes are becoming richer and most market goods are becoming cheaper, spend-based consumption has risen (see graph 2.2).

When looking at household furniture, two points of impact in history stand out: Firstly when FDB[1] established FDB Furniture in 1942, and secondly in 1968 when IKEA opened their first retail store in Denmark (Information, 2019). Børge Mogensen as head of FDB Furniture had a vision to increase the life quality of the Danish people through functional quality furniture at a price the common man could afford. FDB succeeded in creating quality furniture at a low cost by being inspired by American mass production. In parallel with the development of the Danish

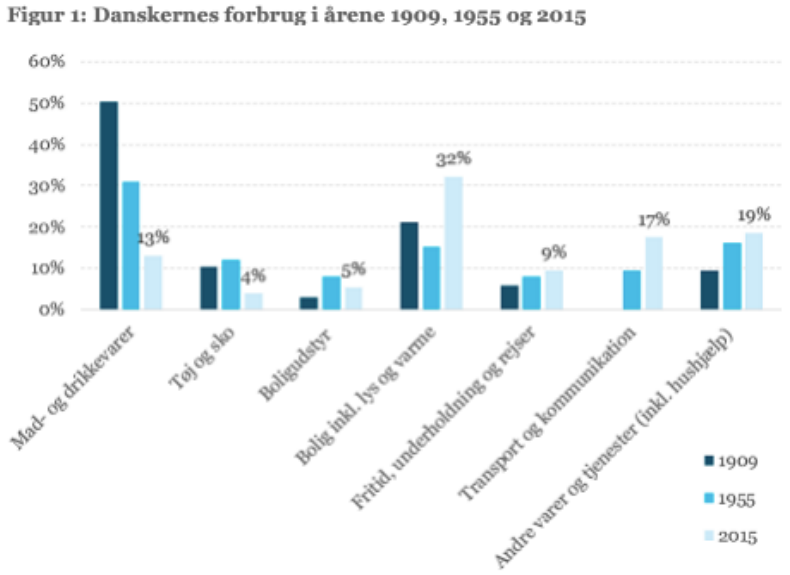
[1] Fællesforeningen for Danmarks Brugsforeninger (*FDB Møbler*, n.d. a)

welfare state, giving the Danes better economic possibilities, FDB succeeded after years of struggle in getting the Danes to replace their old, bulky, and often inherited furniture with new modern furniture like the *People's Chair* (FDB Møbler). A name for a chair manifesting the present societal spirit of the time. A time when the culture was a collective one and a socially shared perspective concerning developed prosperity and higher life quality. As can be seen in the interior design of the Danish middle class in the 1950s by the popularity of acquiring quality furniture from e.g. FDB (Petersen, 2015; Sørensen, 2019).

With the rise of globalisation and capitalism, FDB lost in competition with companies such as IKEA in the 1960's (ibid). The culture changed from a collective to a competitive individualistic one. Resulting in the Danish consumption of furniture expressing the consumer's individualism. With their furniture, the FDB's architects had defined what good design was, whereas IKEA offered a broad range of designs and trends, for a cheaper price often on behalf of quality. Lower quality was not a concern due to the rise of a buy-and-throw-out-culture (Sørensen, 2019).
The same development is present concerning electronics and textiles and the buy-and-throw-out culture has become easier to subscribe to with continuously rising incomes (Dansk Erhverv 2017). Since 1994, the average household consumption has nearly doubled (*Statistikbanken*, n.d.). Noticeably, Danes spend less on food and more on housing, leisure and pleasures, as seen in Graph 2.2 (Dansk Erhverv 2017). Overall, the development of consumption concludes that Denmark is far from being a poor country with a consumption pattern that is reminiscent of that of developing countries.



Graph 2.1. Development in the average Danish household consumption, from 1994 to 2022 (*Statistikbanken*, n.d.)



Graph 2.2. The Dane's Consumption in 1909, 1955, and 2015 (Dansk Erhverv 2017).

2.2.1 Consumption of Electronics, Textiles, and Furniture

Consumption in Denmark has developed drastically throughout history. Today, the consumption of resources has further increased due to the development of Internet services, globalisation, and economic prosperity (IB Geography Revision, 2018; Central Statistics Office 2018.;Earth.org, 2023).

The consumption of resources in Denmark is only increasing, meaning that Danes are consuming increasingly more (CONCITO 2023.); (*Statistikbanken*, n.d.). Shopping and buying new items has become a fun and leisure activity and impulse buying has become more common (Norion Consult, 2023). The consumption in Denmark is observed in three categories electronics, textiles and furniture.

Electronics

When looking specifically at electronics consumption has increased due to accelerating technological developments, and the variety of choices available on the market. Furthermore, the online availability of products increased the consumption of electronic devices drastically. According to Norion, consumers in Denmark tend to spend more time on choosing the right product and look more closely into product specifications before purchasing electronics (Norion Consult, 2023: 18). The motivation for buying electronics lies in practical needs for electronics and society becoming more digitalised. The technological development of products and the reduction in price foster greater consumption of electronics (ibid: 41). When replacing especially phones, tablets, and computers, it is often done because of technological obsolescence or items not containing new features as the newly launched devices (ibid.) This leads to Danes disposing of a lot of products that could have had a longer lifetime (ibid; erhvervplus.dk, n.d.; DR, n.d.).

Textiles

In the last 20 years, the use of textiles has increased drastically (Norion Consult, 2023: 42). The use of textiles in 2021 was 116.300 tons (ibid.). There has been an increase of 36% in textile consumption from 2016 to 2021 (ibid.). In one year, from 2022 to 2023, consumption of textiles grew by 4%. According to Norion, the increased textile consumption relates to shopping being a leisure activity. Clothes are used as self-expression and to stay socially relevant by following new trends. One of the biggest drivers for the consumption of clothes is cheap prices (Norion Consult, 2023).

Furniture

According to Norion, Danes move more often, and when moving the average Dane spends an average of 50.000 - 100.000 DKK. on renovations and interior design (ibid). Danes are buying more furniture than ever before and more of them are bought online for convenience (Norion Consult, 2023: 43). According to Norion, 12% of online buys of metropolitans are used in interior design. When purchasing furniture online, it is either the low price or the design that is driving consumption. Interior design is used as a way of self-expression. When furniture is bought second-hand, it is to save money (ibid).

2.3 Collaboration with Copenhagen Municipality

Copenhagen is the country's most populous municipality, with 653.648[2] inhabitants and also the "youngest" municipality with an average age of 36 (Trap Danmark, 2020;Status på København 2023).
According to Sophie Hæstorp Andersen, the mayor of Copenhagen, Copenhagen Municipality (CM) will *"be ambitious in our objectives to strengthen social and planetary sustainability"* (Københavns Kommune, 2023), As part of its sustainability ambitions, CM is currently creating a new Climate Action Plan for 2035 (City of Copenhagen, n.d.). What particularly stands out about the 2035 Climate Action Plan, is that CM wishes to address the citizens' consumption-based emissions in their future climate actions (*Cirkulær København* n.d.). To address this, the team of Teknik- og Miljøforvaltning in CM has decided to focus on the consumption patterns of individual citizens in the municipality. It was due to this shared ambition that we engaged in a Collaboration with CM.
Thereby, this project approaches the consumption patterns of individuals when moving *to, within and away from* Copenhagen.

[2] Per the 1. of January 2023.

This project is framed to align with CM's already formulated plans and goals[3].
CM was further chosen as a collaborating partner as it has a young demographic composition, hence it is mostly young people who are moving (Status på København 2023). Furthermore, CM has a greater political mandate to achieve some more radical climate policies, which may not be the case in other municipalities in Denmark (b *Borgerrepræsentationen - Medlemsoversigt*, n.d.).
As an authority, CM can act in five different roles: 1) a facilitator, 2) a developer of local knowledge infrastructure that supports the local incentives 3) a supporter of green public procurement and marked development for green solutions 4) a policy developer e.g. establishing tax structures, rules, etc. 5) innovation, investment and operation of infrastructure facilities (Jørgensen, 2019). Therefore it is relevant to investigate what Copenhagen can do to realise its sustainability goals and foster a circular transition in Copenhagen. The approach of this study set out to find the reasons behind the consumption patterns during the residential moving and what affects the decision-making when purchasing and disposing. The goal of this study is to develop suggestions for CM on how they can ensure a greater degree of circularity in residential moving. Therefore, the framing of the project is led by the roles CM can take.

[3] Due to the established collaboration with CM we have gotten access to an internal working document about ideas and goals of CM in influencing citizens to consume less and consume more circularly. This document has been used as inspiration for research done in this project.

This has led to the following research questions:

Main research question:

What does the moving practice look like in relation to resource consumption and how Copenhagen Municipality foster a greater degree of circularity when moving?

Subquestion 1:

How does the moving practice looks like and where does the consumption show?

Subquestion 2:

What are the drivers of consumption and what is fostering good and bad behaviour?

Subquestion 3:

How can Copenhagen Municipality foster a greater degree of circularity concerning residential moving?

2.3.1 What is Copenhagen Municipality Already Doing?

Copenhagen Municipality is a part of C40 Cities, a global network of cities committed to halving emissions by 2030 (C40 Cities, 2024); (*Copenhagen - C40 Cities*, n.d.). The last resource and waste management plan, *Circular Copenhagen - Resource and Waste Management Plan 2024*, was adopted in 2018 and ran from 2019 to 2024 (*Circular Copenhagen*, 2022). In this climate plan, CM set an ambitious goal of being the first city to reach net zero by 2025. This goal was unreachable due to the lost tender for Carbon Capture and Storage (2022). The main focus of this plan rests on three pillars: Increasing waste sorting[4], significant CO_2 reductions, and tripling the reuse (ibid.).

CM has directed a lot of its forces to enhance the development of an extensive waste sorting system and established 550 new sorting stations by 2024 (*Cirkulær København | Bæredygtig byudvikling*, n.d.). Furthermore, CM has invested in technological development for sorting plastic which is expected to enhance recycling ('Anonymised document 1', 2024). The plan also focuses on tripling reuse (*The Circularity Gap Report Denmark*, 2024). CM has put an effort into creating more local recycling hubs and the development of existing ones to have swap stations and workshops on repair (*Circular Copenhagen*, 2022). Furthermore, a resource lab at Sydhavn Recycling Station is developed to develop new business concepts and partnerships to promote reuse and recycling - also among companies - thereby creating new value chains (ibid.). Below is two maps of CM's different physical waste-, recycling- and reuse stations, see figure 2.1 and 2.2 (*Find din nærmeste nær- og genbrugsstation | Affald KBH*, n.d. a) (*Find dit nærmeste sorteringssted | Affald KBH*, n.d. b) .

[4]CM aims at increasing waste by 70 % compared to the levels of 2016 (*The Circularity Gap Report Denmark*, 2024).

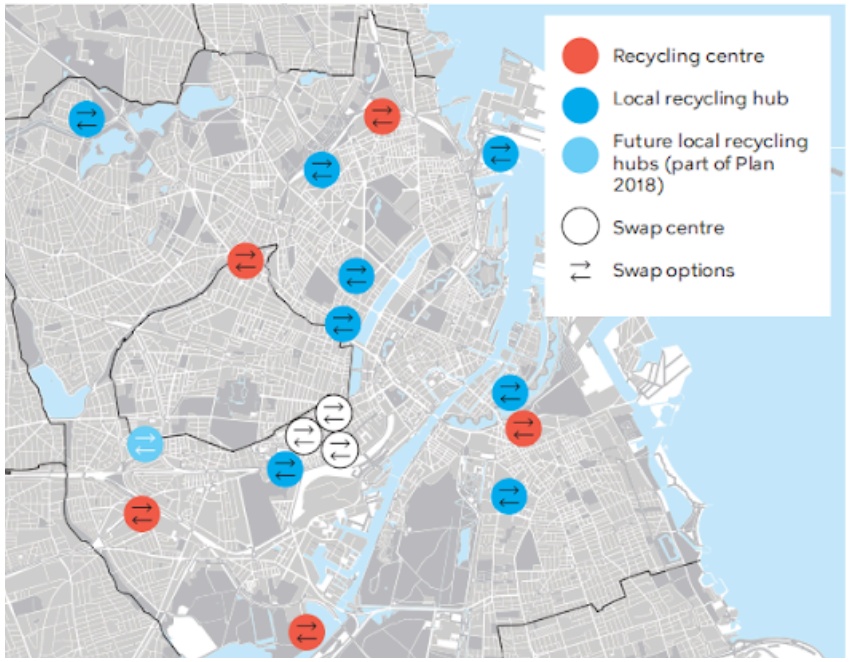


Fig. 2.1. Map of municipal recycling and swap stations (Affald KBH, n.d.a).

Beyond the physical stations and waste sorting, CM is putting effort into education, campaigns, workshops, and information availability to the citizens (ibid). For example, a much more extensive, informative, and interactive map is available for citizens on the municipality website (Affald KBH, n.d.a). This map shows all public second-hand stores, sorting stations, and glass sorting stations. The municipality has 17 second-hand stations in Copenhagen. Furthermore, the information and guides on sorting and waste can be found on the website as well as courses on repair, sharing, and reusing held at Sydhavn Recycling Station (Affald KBH, n.d.b).

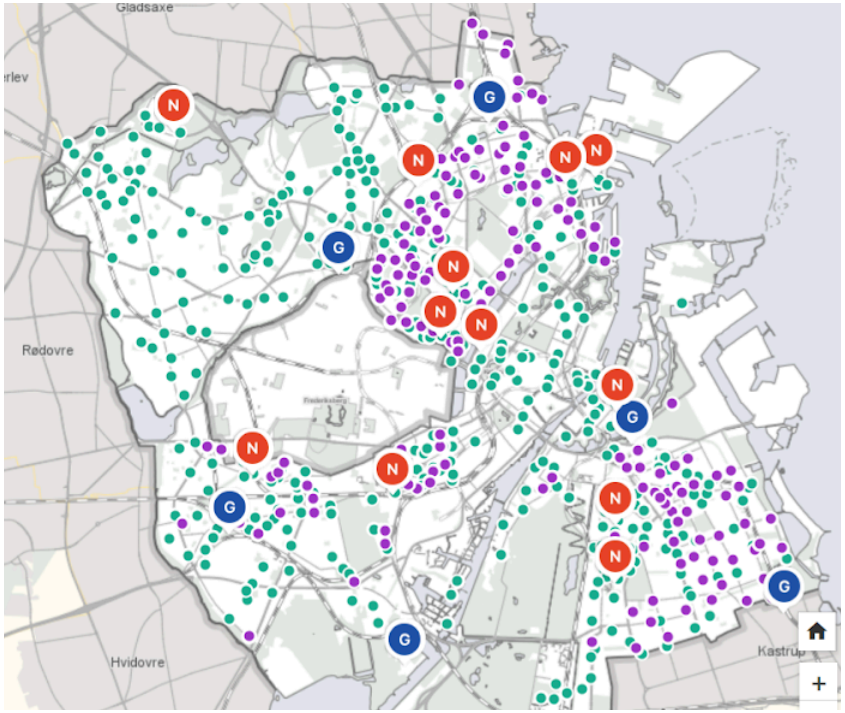
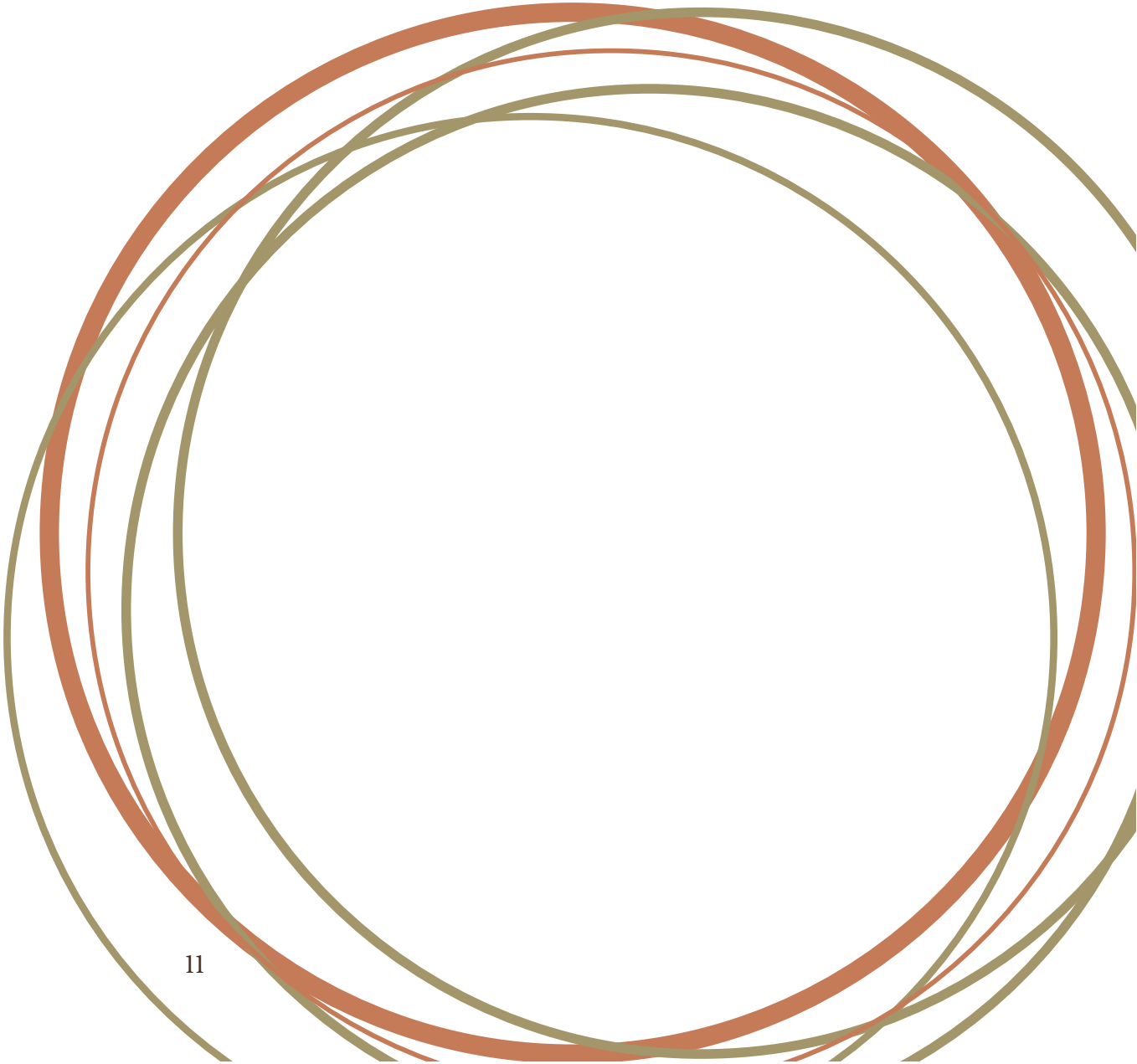


Fig. 2.2. Map of the sorting points in CM (Affald KBH, n.d.a).

The blue dots are recycling stations and the red dots are nearby exchange stations (Affald KBH, n.d.a).
These are just some of the incentives that Copenhagen has already adopted to meet its climate and resources goals.

3.0 Scope



This project investigates material consumption in residential moving. Greater Copenhagen is the geographical scope of this project. Furthermore, this project looks at moving from, to and in Copenhagen. The demographic target is limited to the age group 25-35 years, involving international and national citizens, in different life situations e.g. students, employees, couples and singles.

This project focuses on material consumption during moving, by looking at items of the predefined product groups of textile, electronics and furniture. The focus on the three product groups is chosen due to CM's project that focuses on these three categories.

Other types of resources connected to moving, e.g. transport will therefore be excluded.

The study focuses on how and why items are consumed from a Social Technical Science perspective through Practice Theory and an environmental perspective through Circular Economy and Circular Society.

The focus of this project is what affects the citizens' behaviour, and how can products be kept in use instead of ending their lifetime (Ellen MacArthur Foundation *The Technical Cycle of the Butterfly Diagram*, 2022). Where a specific focus on the environmental effects is out of the scope of the project and therefore consumption is not analysed using e.g. tools like LCA and CO_2 calculations.

4.0 Methodology

In this section the research approach to this thesis is presented, followed by the theories and methods used. Practice Theory (PT) has been used as the main theory to understand private consumption in relation to moving. Both the theoretical approach and concepts are explained. Circular Economy (CE) was used to define sustainable consumption and to analyse respondents' consumption. Furthermore, Circular Societies (CS) were used to ideate on how can CM foster a greater degree of circularity and thereby more sustainable consumption.

Finally, this section will display the methods used to collect empirical data. Interviews and surveys are used to collect residential moving cases, and the co-design method is used in a workshop and an expert interview. These were further used to generate and improve ideas for final suggestions.

4.1 Research approach

Figure 4.1. visualises the different methods used to answer the research questions. Quantitative and qualitative methods have been applied to answer the first subquestion, focusing mainly on qualitative research. This question is explored by an online survey and eight interviews focusing on citizens' moving experiences. The results are analysed using PT.

To answer the second subquestion, both the interviews and the analysis are used. The third subquestion has been answered through both analyses one and two as well as the findings from a co-design workshop with citizens and experts.

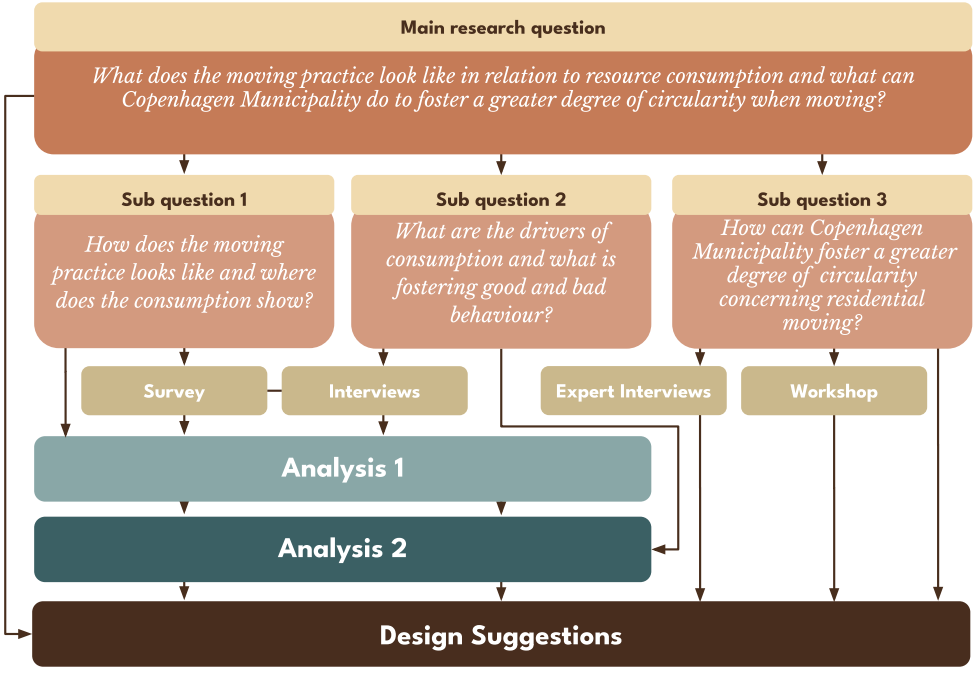


Fig. 4.1. Research approach.

4.2 Theory

4.2.1 Practice Theory

Practice Theory (PT) is used as an overall systemic approach in this thesis. Furthermore, it is used to understand the practices causing resource consumption and identify opportunities for change. The reason for including PT in this research is to gain a deeper understanding of behavioural patterns and causes of action. The theory is rooted in social science and has been subject to various interpretations, however, it always orbits around the practice as the core of the analysis (Reckwitz, 2002): 243-244). Used in socio-technical studies PT provides insights and understandings of irrational human action (Gram-Hanssen, 2009).

4.2.1.1 Framework and Terminology

According to Kuijer "*[Practice theory]....offers a conceptual framework to give a general and abstract account to gain understanding of a particular topic*" (Niedderer et al., 2020; Kuijer: 117 Niedderer, Clune and Ludden, 2020). Kuijer's interpretation of PT is oriented towards how PT may be used in design to tackle societal consumption issues, therefore it is used in this thesis. Kuijer's understanding of PT is influenced by Shove. In Kuijer's PhD, Shove's definition of a practice and its elements are used (Kuijer, 2014). According to Shove, a practice can be understood by the interplay of materials, competencies and meanings and the links between them (Shove, Pantzar and Watson, 2012). To give the reader an understanding of the PT terms used in the thesis a short description of essential terms is displayed:

Elements and links: Practice consists of three elements defined by Shove as *Meaning*, *Materials* and *Competencies* (Shove, Pantzar and Watson, 2012, p. et. al). The elements are interconnected through *links*, and it is when the elements are linked that a practice emerges, and when links are broken the practice disappears. The links can be broken by changing the elements or the links.

Meaning is the first element that describes the emotions and motivation in a practice. Shove defines meaning as: *"the social and symbolic significance of participation at any one moment"*(Shove, Pantzar and Watson, 2012):(Shove, Pantzar and Watson, 2012, p. 23).

Materials include, to some degree, the tangible elements of a practice like infrastructure, tools, hardware and the body.

Competences are used by Shove as a simplification of different types of understanding and practical knowledge. (Shove, Pantzar and Watson, 2012). Kuijer elaborates on the understanding of competencies as the elements of a practice that is bodily learned and mental routine, like know-how and inherently shared knowledge about what is good, acceptable, or appropriate (Kuijer, 2014). Kuijer further builds on Shove's approach by developing a way to reconfigure a practice (Kuijer, 2014). Shove talks about breaking links, which Kuijer refers to as *reconfiguration* by replacing elements with "unfamiliar" or new elements (ibid.); (Shove, Pantzar and Watson, 2012). Kuijer states that the primary goal of studying practices in sustainable design

is identifying the opportunities for intervention. The goal of this intervention is to ultimately facilitate the change toward the configuration of practice with a lower level of resource consumption (Kuijer, 2014).

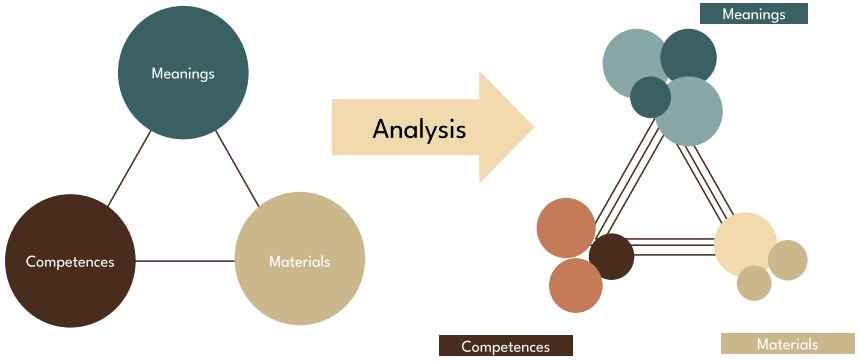


Fig. 4.2. Kuijers framework for analysing a practice as the grouping of elements (Kuijer, 2014).

4.2.1.2 The Use of Practice Theory in this Thesis

The reason for applying PT by Kuijer and Shove is that Kuijer offers a design-oriented approach to address resource consumption and sustainability. In sustainable design studies, the theory serves as a transition theory (Kuijer, 2014). In this case, PT is used to identify the main reasons for resource consumption when moving and offers a model on how to analyse a practice.

According to Shove some elements may be more crucial than others, likewise will some links be stronger than others (Shove, Pantzar and Watson, 2012). Analysing the different practices of respondents will firstly help clarify which elements and links cause *good and bad behaviour*. Following, identifying the elements and links will further indicate where there is an opportunity for intervention. This is where the reconfiguration of the practice happens by replacing elements and links.

4.2.1.3 Triangle of Meanings, Materials and Competences

As mentioned, PT has various interpretations. Kuijer interpreted and developed her understanding based on Shove. Kuijer builds on Shove's diagram of materials, meanings, and competencies. She analyses performances individually and as a practice and focuses on the links between the elements (Kuijer, 2014).
With this approach, Kuijer created a method of analysing PT through the triangle of *competencies, meanings* and *materials,* where they are seen as groups of elements see figure 4.2.
In this project, the triangle method is used to visualise the different practices and elements and show the opportunity for change. Furthermore, it is used to visualise the results of the analysis; Strongest links and elements recurring in the practice. Furthermore, this method is used to identify the opportunities for change in the practice and which elements and links can be influenced and replaced.
The strengths of this method lie in the simple visualisation of the most relevant elements and links. However, the limitations lie in the lack of identifying how these links and elements might practically be influenced and replaced.

4.2.2 Circular Economy

Circular Economy (CE) is a concept for sustainable resource consumption. It is used in the thesis as a sustainability concept of what good consumption is and thereby what *good behaviour* is when combined with PT (Ellen MacArthur Foundation, n.d.). CE is an essential part of the strategy in both the EU's green growth strategy and the UN's Sustainable Development Goals (Sachs *et al.*, 2019). CE is already used by CM and is therefore relevant when looking into what the municipalities can do to foster circularity (*Circular Copenhagen*, 2022). In this thesis, the concept of CE is understood and used by the Ellen MacArthur Foundation definition:

> *"The circular economy is a system where materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting."* (Ellen MacArthur Foundation, n.d.).

The Ellen Macarthur Foundation bases CE on three design principles: (1) Eliminate waste and pollution, (2) Circulate products and materials at their highest value, and (3) Regenerate nature (ibid.).
In this thesis, the focus is on the first two principles.

4.2.2.1 The Butterfly Diagram

The butterfly diagram (Fig. 4.3.) is used in this thesis to define how to keep the value of products at their highest value and eliminate waste. The butterfly diagram is made by the Ellen McArthur Foundation and illustrates different loops material can go through in its life cycle. The inner loops symbolise the loops where the material keeps the most value and uses the least energy to keep its value, see Figure 5.3 (Ellen MacArthur Foundation, 2022).

The butterfly diagram's left wing is about the biological cycle, where renewable resources are analysed. In this thesis, the right wing of the butterfly is especially relevant and will be applied, because it describes the technical cycle with a focus on finite materials (ibid.).

When referring to *good and bad consumption behaviour* this is a term that draws on both PT and CE. The *good consumption behaviour* is used to describe acts of consumption that keep the material value of a product in the loop (cf. figure 5.3). Whereas *bad consumption behaviour* will be used to describe acts of consumption that are not circulated and end product lifetime.

Following the Butterfly diagram (Fig. 4.3.), the most effective technical cycle is performed in the listed order:

1. **Prolong keeping**
2. **Share**
3. **Maintain**
4. **Redistribute**
5. **Refurbish**
6. **Recycle**

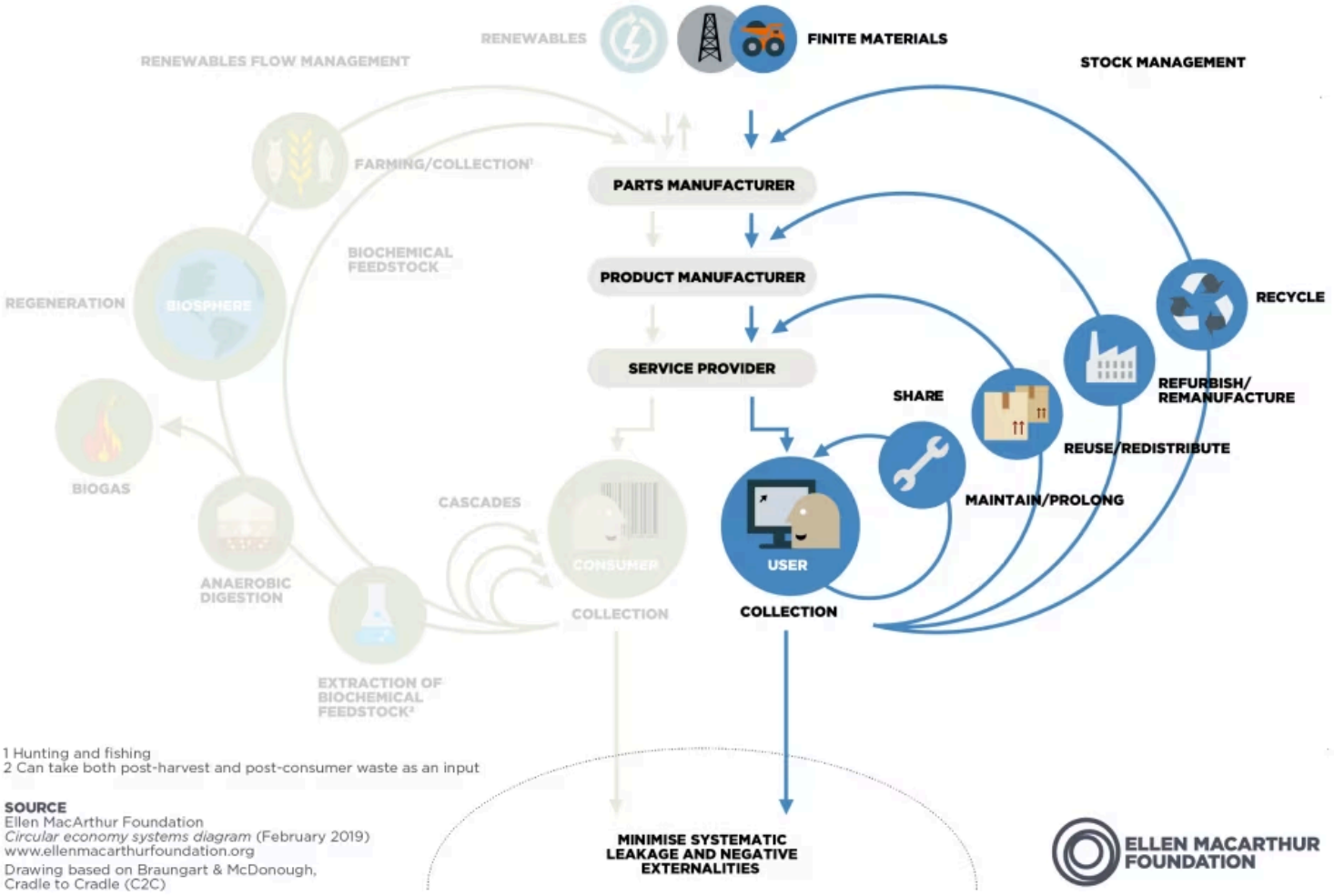


Fig. 4.3. The CE Butterfly diagram (Ellen MacArthur Foundation, 2022).

4.2.3 Circular Society

Defined by sustainability researcher Martin Calisto, Circular Society (CS) is a concept where not only materials and energy are circulated but there is also societal sustainable circulation of knowledge, wealth, power and technology (Calisto Friant, Vermeulen and Salomone, 2020). CS, according to Calisto, is a more holistic transition compared to a Circular Economy, since it includes all three sustainability pillars: Environmental, social and economic sustainability (Calisto Friant, Vermeulen and Salomone, 2020). Calisto argues that when looking at SC instead of CE, circularity becomes more complex and can not only be perceived from a technical and material efficiency perspective, which is the case in CE studies. Instead, CS gives room for inclusion and consideration of social, ecological and political aspects of circularity (ibid).

According to Calisto, CS can be either transformational or reformist. Transformational CS focuses on changing the reconfiguration of the system and changing the world view from a materialistic and individualistic view to a holistic and inclusive view, where it emphasises solutions through citizen participation in the construction of future democracy and bottom-up governance (ibid.). This view is supported by Jaeger-Erben, who states *"the aim of CS as "[...] a re-invention of inter-human and humanity-nature relationships which privileges care, connectivity and cooperation instead of neglect, separation and rivalry"* (Jaeger-Erben 2021: 1). Jaeger-Erben argues for viewing people as active embedded participants instead of passive, in the transition to sustainable systems of consumption and production (SCP), citizens can become active through co-creation and co-design when creating products and services, and Jaeger-Erben also encourage citizen involvement when developing social innovation processes.

According to Calisto, seven socio-ecological cycles demonstrate the holism of CS and at the same time a complexity because, according to Calisto all the cycles are interconnected and must be analysed as so. Thereby the other SC circles: Power, wealth, knowledge and social aspects also must be incorporated in CS strategies, systems and innovations. For this research, it is worth mentioning the interconnections of *slowing socio-ecological cycles*, *democratizing socio-ecological cycles*, and *redistributing socio-ecological cycles*.

- *Slowing socio-ecological cycles* focusing on life extension of products through maintenance, reusing, services and focusing on functionality access.
- *Democratising socio-ecological cycles* focusing on governance processes which have the goal of equal and meaningful participation in management of resources in both the private and public sector. With examples of democracy methods like citizen assemblies, participatory -budgeting, - design and cooperative ownership.
- *Redistributing socio-ecological cycles* focusing on the goal of fair and equal distribution of both resource, wealth and power. Through political tools such as "progressive taxation, comprehensive welfare, communal ownership and open source knowledge and technologies".

This project uses CS as a tool to create design solutions to support the development of a society based on a concert of CS. Furthermore, CS is used in this project due to the breadth of the theory and the inclusion of experts and citizens. This is suitable as CM has different roles in society and can influence and collaborate with multiple actors.

4.3 Methods of Data Collection

In the following section, the methodology of the research will be presented. Firstly, the literature review and search will be presented. Thereafter, the empirical data collection methodology is presented and why these methods have been chosen. Lastly, the theoretical methods used to analyse the data are presented and explained.

4.3.1 Literature Review & Search

To research resource consumption related to moving and how CM can contribute to reducing it, it is relevant to examine pre-existing knowledge and research on this topic. Depending on the research question, various types of review approaches exist (*Det KGL Bibliotek*, 2023); (*AU Library, Systematisk litterratur review*, 2023). This review is a systematic literature review, a method ideally suited for research demanding a methodical inquiry into already-established bodies of work (ibid.). The purpose of this review is to get an understanding of current knowledge and research in the field of resource consumption when residential moving. The first literature search was done through the academic database Scopus (*Scopus - Document search results*, n.d.) n.d.). This literature search resulted in a limited number of hits[5]. A review of the 49 research articles found through Scopus, was conducted by firstly reading the title. If the wording of the title indicated relevance for this study, then the abstract would be read next. If the abstract was relevant, the article would be selected for a full reading[6]. The resource consumption when residential moving shows to be an under-researched topic in academia. The insubstantial body of literature led us to open up the subject of the search chain from "*residential moving*" and "*resource consumption*" to address "*circularity*" and "*second–hand*[7]". This search resulted in eighteen hits on Scopus[5], which have been systematically reviewed (appendix 15). Among these results, some articles were relevant in terms of capturing and contributing to addressing central concepts such as circularity and second-hand. However, these concepts have been extensively studied in relation to residential moving leaving a void of knowledge in the academic literature. Thereby several aspects remain unexplored, highlighting research gaps and the need for this research.

[5] 49 hits pr. 3rd of May 2024.
[6] Not all articles were read in full. Some may have been discarded a a few pages into the reading if it was clear that the text was not relevant for further research.
[7] The term second-hand has been spelled both "second hand", "secondhand", and "second-hand".

4.3.2 Research Methodology

Although academic literature is important, it was relevant to examine the scope of the problem outside the academic body of literature and investigate what knowledge and work has been done elsewhere. To do so, an online literature search has been conducted via Google and Aalborg University's online library (*Aalborg University Library*, n.d.). These literature searches provided articles on household resource consumption and reports from authorities and organisations around the World.
To understand the concept of CE, the Ellen McArthur Foundation is drawn upon (Ellen MacArthur Foundation, n.d.). This perspective is central to the research concerning how to ensure a greater degree of circularity. However, this study calls for more varied insights. E.g. into the scope of the problem of resource consumption when residential moving, what initiatives have been taken so far, and what plans and visions CM has for the future. Therefore literature has also been gathered from simply engaging in dialogue with the municipality and requesting relevant data and literature on the topic. The municipality allowed us to gain insight into some internal working documents, which gave an understanding of what thoughts are circulating in Copenhagen Municipality's Teknik- og Miljøforvaltning team, on how to remedy the resource consumption (Anonymised document 1 2024). Furthermore, we saw previous reports and research done for or by the municipality. One insight on experienced quality in relation to consumption and a recent analysis made by Norion Consult for internal use for CM on consumption of electronics, textiles and furniture in the city (Norion Consult, 2023). This analysis identifies the main reasons for consumption, generally in relation to situation, motivation and behaviour (ibid.).

4.3.3 Online Survey

A survey was conducted to collect quantitative data that is used to complement the qualitative data gathered from the interviews, and desk research and clarify any differences or similarities.

The target group of the survey was citizens of Copenhagen who had recently moved, in the age group of 20-35 years old and nearby municipalities who recently moved, but all age groups and municipal residents were welcomed. The survey was promoted by using social media e.g. Facebook groups with Copenhagen citizens who may have recently moved[8]. Furthermore, personal social networks were used to reach acquaintances who had recently moved.
With inspiration from PT, the survey focused on what citizens did in the moving process, with their belongings grouped in textiles, electronics and furniture. Followed were questions addressing the reason behind their actions such as stress level, type of transport, and the rationalities behind their choices.
The questions had multiple-choice answer options. The multiple-choice questions all had an "*other*" option where the respondent could write a self-formulated answer. Some questions were also followed up with an open question where the respondents could choose to add further description if needed. The intention of giving the respondents the ability to elaborate with open questions was to check if the closed

[8] E.g. the Facebook Group *Free Moving Boxes in Copenhagen*.

multiple-choice questions and Likert scale questions fitted the respondents.
Different Likert scales were utilised to collect data on what happened to the respondents' belongings. How much they kept, how much they disposed of, how much was given or sold second-hand, and how much was purchased new and second-hand.
The survey can be found in Appendix 11. Analysing the results from the survey was done by comparing the findings from the interviews to check if the findings from the interviews aligned with the respondents from the survey.
The survey had 38 respondents where 20 of them were within the same target groups as the respondents selected for interviewing. The amount of responses is not a significant sample size to use as statistical evidence. Therefore, the use of the survey data will be limited concerning generalizability. Instead, the data is used as indicators and will be perceived as individual experiences, rather than representative evidence of a greater population (Andersen, 2013).

4.3.4 Semi-Structured Interviews

To get a more in-depth understanding of moving residential and the elements of the practices and performances, eight qualitative semi-structured interviews were conducted with respondents who have moved within the last year. Semi-structured interviews are placed in between a regular conversation and a questionnaire. It is a method used to understand respondents' everyday lives and perspectives (Kvale and Brinkmann, 2015).

An interview guide was conducted (see Appendix 10) to ensure the three elements of practice were touched upon in the interview. The guide was made with a focus on practice theory and inspired by Kuijer's "*deliberate naivete*". Here the interviewer asks qualifying questions of regular behaviours to ensure data on what can be described as tacit knowledge and most likely shared knowledge between the respondent and the interviewer. This is because the performance of moving and furnishing an apartment is familiar to most (Kuijer, 2014). Therefore, it was necessary to get these aspects verbalised which was the purpose of the open questions.
The interviews were conducted with respondents in the age group 25-35, who were moving to, from, or within CM.
This target group constitutes a big part of the Copenhagen population and is the age group that moves the most. Furthermore, this target group has the most wrong purchases (Norion Consult, 2023, p. 43).
The eight respondents were selected by ensuring a variation in the types of residential moving and diversity in the respondents' life situations. The respondents were sampled through personal social networks, ensuring diversity in the types of moving situations and respondents represented.
The time estimated for each interview was an hour to ensure gathering in-depth data of often quite eventful performance of residential moving. In reality, the interviews took between 45-90 minutes.
Residential moving is something most people are familiar with. The familiarity of the practice of moving can consist of unconscious and conscious routines and tacit knowledge which can be difficult to ask deliberating questions about (Kuijer, 2014). To alter this and make the respondents verbalise their practices,

clarifying follow-up questions were asked, such as "*what do you mean by…?*" to gain further insight, both verbal and non-verbal into their practice.
Having the interviewees meet physically in their own homes, was to have them in the comfort of their own homes where it may be easier to remember the moving situation and the opportunity to point out specific items that they have replaced or acquired in the process.
The limits of the interview method is that not all tacit knowledge can be collected, whereas an observation study would be complementary for this kind of study (Boeijen *et al.*, 2014).
The interviews were conducted after their moving. Therefore, some answers to why they chose to e.g. sell or buy might have been different if they were asked at the very moment of making the decision. Getting the opportunity to answer questions about the moving process some time after, gives the interviewees the possibility to better reflect upon what happened and why.

4.3.5 Data Comparison from Interviews

Before all interviews, consent was given by all the respondents to record the interviews These recordings were then transcribed with the help of Microsoft Word's transcribing program and then corrected manually whilst listening to the recordings. The transcriptions are coded by colouring phrases that are relevant to the analysis. The colour-coding themes were based on the elements from PT, *meanings, materials and competencies.* The sub-performances in the moving process were also highlighted by colour coding the sections about performances of reusing, selling, giving, keeping, buying new, buying second-hand and inheriting items. The categories were made in an iterative process of reading and rereading the interview transcriptions. The process needed to be iterative because reading the interviews again gave new observations, whereas the need to go through the other interviews with new knowledge and focus gave a more in-depth comparison of the interviews.

4.3.6 Co-design Workshop

Citizens and field experts were invited to participate in the ideation process of co-design, to be involved in ideation and in feedback to the ideas. This is done from a perspective from Jaeger-Erben of how to create circular societal changes. Where the solution is part of a complex system which the citizens are also a part of, and must be seen as possibly involved agents in the change instead of passive recipients (Jaeger-Erben *et al.*, 2021). Answering how Copenhagen Municipality can foster a greater degree of circularity when residential moving is a complex matter offering several solutions in a system context of a municipality (Keller, Halkier and Wilska, 2016). Therefore an internal brainstorm was conducted to develop the ideas and to combine them with the solution already existing today in Copenhagen and what can be done.
The ideas generated from the brainstorming were conducted for the co-design workshop target to be criticised by the participants and the ideas were supposed to evolve into better ideas or new ideas, and also to discard the poor ones.
The invited participants were citizens who had moved within the last two years. They were found through surveys, interviews,

or through personal social networks. Three experts in sustainability were also invited, resulting in nine participants in total. Experts were invited to ensure the discussion and knowledge sharing would get in-depth with the complexity of working with a circular transition.
At the co-creation workshop, findings were first introduced. We clarified that we were seeking solutions within the resort of the municipality and explained the tools that the municipality has and can use to affect resource consumption. This was done to give the participants a direction of the ideation. Following this, we played an exploring game which we conducted ourselves, to familiarise the participants with both the problem and solutions (Gray, Brown and Macanufo, 2010). Here we played two rounds. One roundabout disposing and one about acquiring. After each round, an element of their closing was added to the game. The participants were asked to fill out which ideas were fitting to ensure more reuse. In the end, a similar feedback template was discussed evolving on how to keep textiles, electronics and furniture for longer.
The explorative part of the workshop was intended to share knowledge and experiences through anecdotes and create a shared community of practice (Carlile, 2002) by playing the game. Cards of both facilities of recycling, reuse and repair were placed on the table with the new ideas and item cards made by what in the interviews were most likely to be disposed of or acquired in the moving performance. The item cards worked as boundary objects to create a shared language among the participants (Carlile, 2002) and to navigate the ideation and feedback in a direction focusing on what CM can do.

4.3.7 Case Study

The purpose of this section is to present the case study as a research strategy and how it is applied in this research. Furthermore, the possibilities and limitations of the case study will be presented.
A case study is scientific research of specific phenomena or "cases", where the purpose of the study is to understand the phenomenon or "case" and its contextual relations.
The case study approach is relevant when the aim is to investigate circumstances that form certain phenomena in practice. While depending on the scientific field, the scientific design of the case study can vary (Juul Kristensen and Hussain, 2019: 344). Generally, case studies are contextual or practical knowledge meaning that case studies generate theory and are common in inductive research approaches while being based on an overall theoretical framework, which sets the premises for what and how is observed (Juul Kristensen and Hussain, 2019).
The hermeneutic approach, understood by Gary Thomas, aims at understanding rather than explaining and perceiving the knowledge that is being produced from a case study as an interpretive (ibid.).

4.3.7.1 The Eight Interviews: A Case Study Approach

In this research, the phenomenon of interest is resource consumption related to moving in CM. Thereby the examination is zooming in on the specific consumption-related activities when moving in CM, which will be done by engaging

in eighth-case examples presented by the eight respondents from the interviews. This varies in types of moves. E.g. moving in together as a couple, moving to one's first "grown-up" apartment, moving away from an ex-boyfriend into a collective etc.. The respondents as case examples, are a variation in common kinds of moves in order to represent a greater population of the 25-35-year-old Copenhagen citizens who have recently moved. The case study approach is hermeneutic in the sense that the main research approach is to understand possible causes of resource consumption from the cases' perspectives The reason why a case study is relevant in this project is because the intention is to collaborate with the municipality and investigate solutions that fit within this case-dependent context.

5.0 Empirical Data

Empirical data used for defining the moving process and its practices has been collected through case collection, qualitative interviews with eight respondents and online surveys with 37 respondents. The analysis results are discussed about results from the municipality's research accessed through contact persons in CM. The analysis will draw on the findings from the workshop, and interviews with CM and the residents to investigate what initiatives the municipality can take to foster a greater degree of circularity, together with theories of CS.
In this chapter, the different types of empirical data collections are described, by how empirical data is selected and by what it is used for.

5.1 Collection of Moving Cases

A case study is widely used when working with PT (Kuijer, 2014) (Gram-Hanssen, 2009) (Halkier, Katz-Gerro and Martens, 2011) (Shove, Pantzar and Watson, 2012). With inspiration from Kuijer and Gram-Hansen, these cases will be used to collect empirical data for analysis through a PT approach. In defining the practices of the moving process, the cases will be used to compare what the cases have similarities and differences.

5.1.1 Interviews

Interviews were used to define the main causes of residential moving, ensuring in-depth qualitative data compared to the survey.

5.1.1.1 Respondents Criteria

The criteria for sampling of respondents were:

- Age: 25-35 years old
- Have moved residence within the last year (acceptable within two years)
- Resided in Copenhagen Municipality before or after the move or both

These criteria were set up to allow easy comparison of similarities across residential moving situations.
To ensure the cases differentiated from each other, these listed criteria were defined:

- Separation in ages
- Scaling up and down in home size
- Occupation: Both students and employed
- Nationality: Both Danish and internationals
- Geographical moving situations: moving to, from or within Copenhagen
- Different life phase changes: Moving together with a partner; Moving from a partner; Ending studies; Moving from a shared flat etc.
- Different consumer values represented

The differentiation of the respondents' moving situation is visualised in Table 5.1. In table 5.2 an overview of respondents and their moving situation are presented. The names of the respondents have been changed to ensure anonymity.
Intermediate statuses between interviews were made to determine who to interview next, to ensure diversity in moving situations.

Interview respondents:

	Respondents:	In total	Nova	Fie and Jonas	Tea	Sille	Pia	Ulla	Kim	Ea
Change in apartment size:	Downsizing	**1**					X			
	Upsizing	**7**	X	X	X	X		X	X	X
Occupation:	Full-time job	**5**	X		X			X	X	X
	Student	**2**		X		X				
Nationality:	Danish	**6**	X	X	X	X		X	X	
	Foreign national	**2**					X			X
Geographical change in moving:	Moved to Copenhagen	**1**				X				
	Moved within Copenhagen	**4**	X	X			X	X		
	Moved out of Copenhagen	**3**			X				X	X
Living situation moved from:	Moved from the student dorm	**2**							X	X
	Moved from partner	**1**					X			
	Moved from roomate	**4**	X	X		X		X		
	No change in the moving situation	**1**			X					
Living situation moved to:	Living alone	**1**	X							
	Moved in with roommates	**1**					X			
	Moved in with a partner	**4**		X		X		X	X	
	Living with partner	**2**			X					X

Table 5.1. Overview of moving situation and life phase changes from interview respondents.

Name	Interview type	Age	Moving situation
Nova	Interview at a respondent's home	28	Moved from living with a roommate in a two-room apartment to her own rented two-room apartment. Moved from Vesterbro to Nord Vest, where in between she spent 3 months working in Greenland. She works full-time as a nurse.
Fie and Jonas	Interview at a respondent's home	28 and 30	Moved together in a two-room apartment, from both living in shared flats. Both were living in Østerbro before, and their new apartment is also in Østerbro. Fie is an apprentice as a blacksmith, and Jonas is working as a chef.
Tea	Physical interview at the workplace.	30	Were living with their boyfriend and now they have moved to a bigger apartment Moving from Vanløse to Frederiksberg Tea works as an environmental consultant, and her boyfriend works as a soldier in the Danish military.
Sille	Interview at a respondent's home	25	Moved together with their boyfriend in a two-room apartment, from both living in shared flats. Moved from Aarhus to Copenhagen, and had a long period of living at her parents' place while searching for an apartment (six months).
Pia	Interview at a respondent's home	33	Moved from an ex-boyfriend to a shared flat with others. Has ended their studies and now works as an entrepreneur creating ceramics, moved to Denmark from France eight years ago. Moved from Islands Brygge to Nørrebro
Ulla	Physical interview at the workplace	27	Moved together with their boyfriend in a small two-room apartment, both living in shared flats with one roommate. The first time she moved after the end of her studies. Moved from Vanløse to Nørrebro, to a rented apartment.
Kim	An online interview where the respondent is at home	27	After the end of his studies, Kim moves from living at a student dorm to moving in with his girlfriend in a new rented apartment. His girlfriend moves from a smaller apartment in the same housing association, as their new apartment. He moved from Emdrup to Brøndby.
Ea	Interview at a respondent's home	30	After the end of studies, Ea and her boyfriend moved from a double student dorm apartment to a rented two-room apartment. She is a freelancer and fulltime occupied at the moment and he has a full-time job. They moved from Amager to Rødovre.

Table 5.2. Overview and description of respondents and their moving situation from interviews.

5.1.2 Online Survey:

A survey was conducted to collect broader research on moving cases. The empirical data from the survey was used for comparison to interview cases to analyse similarities and differences. The survey did not have the same in-depth qualitative data as the interviews but ensured access to a diversity of cases. The survey has been used to support the findings and does not stand alone.
Four workshop participants were "recruited" through the survey.

5.1.2.1 Respondents and selection:

The survey had 37 answers, out of which 29 of them were in the target age group of 25-34 years old.
In table 5.3 the mapping of the respondents is presented. The focus has been on the respondents from the age of 25-34. The other age groups have been taken out of further analysis to ensure a consistent framework. Table 5.4 shows the different life-phase changes represented in the survey results. Results from respondents living outside of Copenhagen are used, as it is useful for defining the moving process. Three respondents live outside of greater Copenhagen, they live in Hedehusene, Charlottenlund and Helsingør, which are all places in the vicinity of Copenhagen.

Categories of distribution		Amount of respondents
Age groups	20-24	3
	25-29	23
	30-34	6
	35-44	5
Distance from Copenhagen (age group 25-34)	Copenhagen municipality	20
	Frederiksberg municipality	2
	Greater Copenhagen	4
	Outside of Copenhagen	3
Occupation (age group 25-34)	Student	15
	Employee	10
	Unemployed	3
	Self-employed	1
Gender (age group 25-34)	Female	22
	Male	7
Change in home size (age group 25-34)	More space	20
	Less space	5
	Same amount of space	4

Table 5.3. Overview of respondent types and distribution from the survey.

Life-phase change (Age 25-34)	Amount of respondents
Moved out from home	1
Moved from one to another shared flat	5
Moved from shared apartment to dorm	1
Moved from the dorm to a shared apartment	1
Moved from shared to own apartment	1
Moved from alone to a shared apartment	1
Moved together with partner	9
Moved in with a partner to something smaller	2
Moved in with a partner to something bigger	6
Starting family	1

Table 5.4. An overview of different types of life-phase changes is represented in the survey, for the group of 25-34-year-olds.

5.1.3 Expert Interview

Based on the findings from the analysis, 10 ideas were formulated and presented to the participants at the workshop. These ideas were assessed and further developed in a co-design process. The findings, redesign suggestions and feedback have been presented to an expert in residential moving, Michel Bjørnskov Cirulli.

Michel Bjørnskov Cirulli is the project leader at Copenhagen Municipality's Teknik- og Miljøforvaltning, and deals with resources and waste. He is an expert in residential moving and has mainly dealt with the waste generation related to it. He is currently developing a moving kit for the citizens in Copenhagen to remedy the waste generation when moving. The purpose of the interview was to share our findings and discuss our ten design suggestions. Michel Bjørnskov Cirulli told us about their work and findings along the way. Compared with our findings both had similarities and differences.
Cirulli, due to his position as project leader in CM, could put the ten ideas in perspective by the municipality, and relate the ideas to investigations, projects and incentives in Copenhagen. The feedback we got was contributing to understanding what ideas that were more or less aligned with the municipality's leeway.
The interview was not recorded but notes from the meeting can be found in appendix 14.

6.0 Analysis 1 Moving as a Bundle of Practices

This analysis sets out to answer the first subquestion "*How does the moving practice look like and where does the consumption show?*
This question will be answered by identifying the moving phase and categorising what happens to their belongings to understand the consumption. Furthermore, the question of where consumption shows will be answered and further supported by findings from the survey.
Firstly, the life circumstances of the interview respondents are presented to give a better understanding of the data collected as this data will be used in both analyses 1 and 2. Secondly, phases that respondents go through in the moving process are identified. Secondly, consumption during different moving phases is observed, analysed and supported by the survey. Finally, the concluding insights on respondents' consumption during different phases are represented.

6.1 Life Circumstances when Moving

To begin with, it is useful to clarify that the eight respondents' life situations and the type of residential move vary among them. This has been conveyed in Figure 6.1.
To better understand consumption and the reasoning behind it, types of moving situations are categorised. Out of the eight respondents, six are in a relationship, out of these couples, three previously lived together and three moved in together for the first time. Two of the respondents are single. One of which moved away from a larger apartment shared with her ex-boyfriend. Furthermore, out of the eight respondents, five recently got their first full jobs, which influenced their purchasing power and economic well-being. Figure 6.1. shows that out of the eight respondents, most of them moved to a larger apartment and had recently gotten a new job.
Two respondents moved from a dorm. The respondents generally moved frequently due to a life phase change. These vary from e.g. moving in together with a partner, moving away from a partner, to end of studies and starting a new job. Figure 6.1. shows what differentiates the respondents' moving situations and life changes that happened around the same time. These life changes have a strong impact on respondents' acquiring and disposing practices.

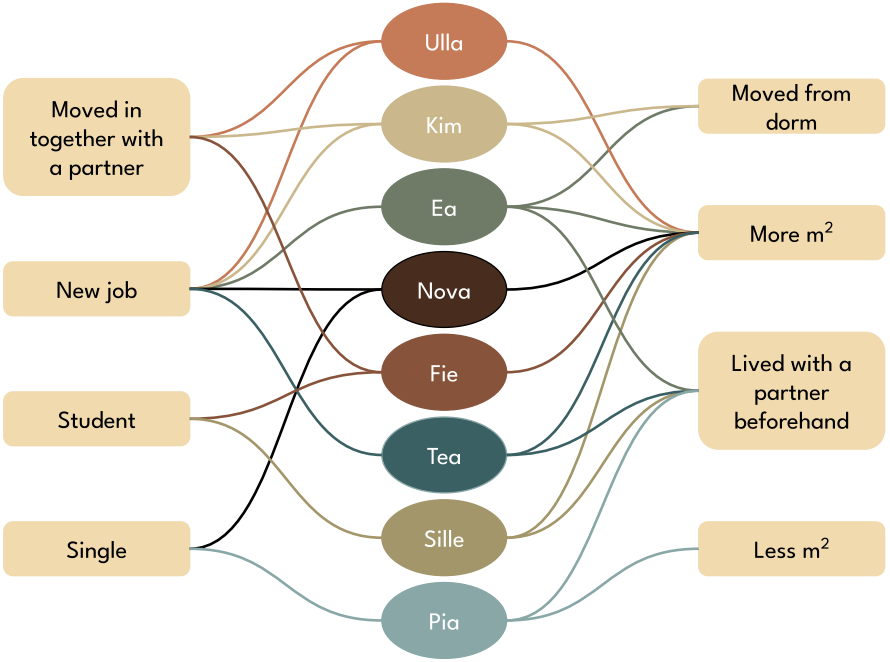


Fig. 6.1. Life situation and residential moving situations of the interview respondents.

The various living situations impact how respondents approach moving situations and their resource consumption. However, that is not the only nor the main factor in their consumption. There are patterns seen in the different residential changes, however, economic stand and values also affect their consumption. Most respondents moved to larger places, except the one respondent who separated from her ex-boyfriend. By that, it can be seen that the respondents have different life situations and residential movings.

6.2 Moving as a Bundle of Practices

The eight interviews conducted focused on collecting data on the process of moving, the individual background information relevant to the situation and circumstances of the move as well as the resource consumption during the process. The respondents moved from different places and had different time spans to prepare for the move. However, they all had one thing in common, they go through three different phases within moving. Moving is therefore defined as a bundle of practices, consisting of three chronological phases: preparing, moving and settling as illustrated in figure 6.2. Through interviews, subphases have been identified of re-evaluating belongings, moving, furnishing and replacing, which all had three key practices in common: the practice of disposing, of keeping and of acquiring. The practices of disposing and acquiring are the practices this thesis focuses on, as they are resource-consuming.

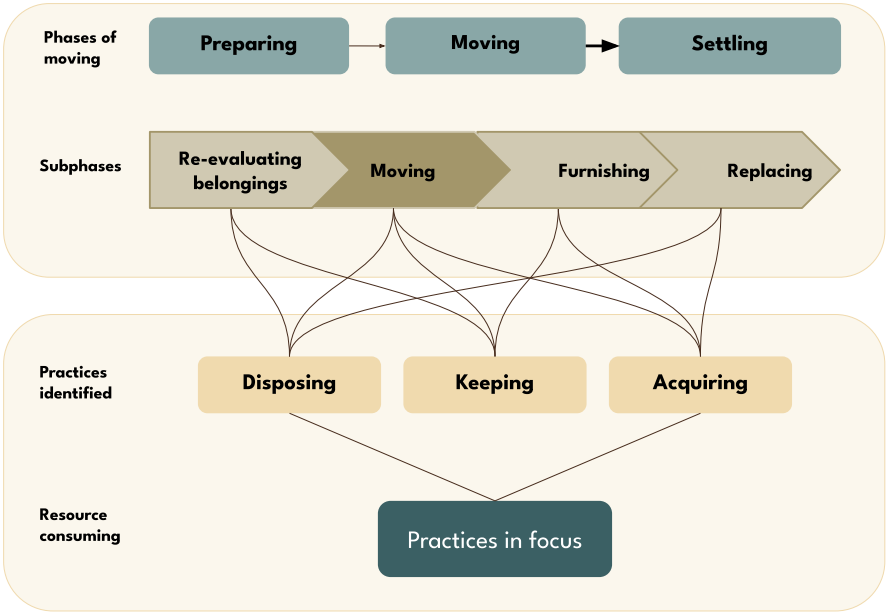


Fig. 6.2. Different phases and practices identified in moving.

All subphases overlap, and each is connected to at least one of the key practices identified. In this chapter, the phases of the moving are elaborated on, and the practices of disposing and acquiring are the further focus. These practices are later elaborated on and used to map respondents' consumption.

6.2.1 The Preparing Phase

The preparation phase is defined as the period from deciding to move or finding out that one is going to move to the moving date. This phase consists of many activities which are illustrated in figure 6.3.

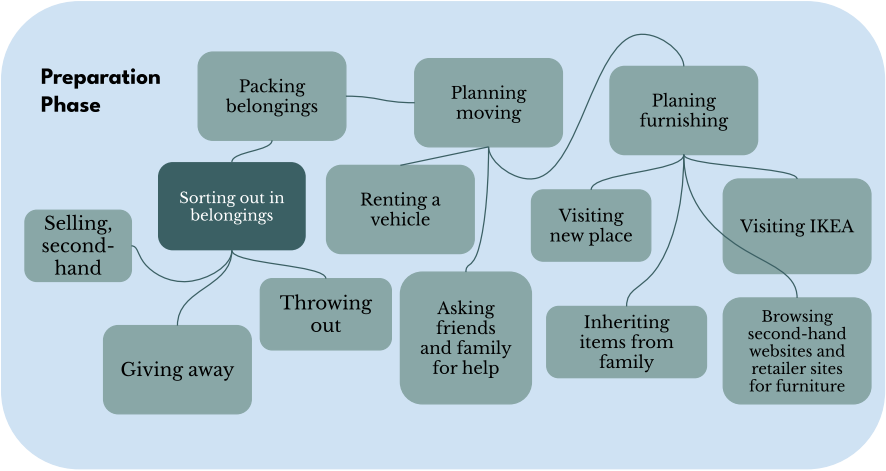


Fig. 6.3. Different activities in the preparation phase.

This phase varies significantly from respondent to respondent. Depending on the circumstances, this phase can be easy or very stressful. Therefore the duration of this phase has a big influence on the respondents' relations and actions with their belongings. An expert on residential moving from CM named Michel Bjørnskov Cirulli further supports this data (appendix 14). There is a relation between a small amount of time to prepare to move with larger amounts of things thrown out (appendix 1; 4; 7). When under time pressure, the respondents tend to do what is most convenient in the situation which often ends in the disposal of items. Furthermore, the life phase that respondents are about to engage in also plays a key part in this relation to their belongings. When entering a new life phase different "needs" occur. In this phase, individuals are also confronted with all of their belongings and use the opportunity to reevaluate and sort through them. In this phase, individuals tend to dispose of their belongings and generally do not acquire new items.

6.2.2 The Moving Phase

The moving phase is the actual period of transporting belongings from one place to another. This phase is often short - one or two days and is always a social activity where a group of friends and family help with the moving.

This phase does not consist of much resource consumption with furniture, textiles, and electronics, however, it is recognized that it is the most physically exhausting phase.

When looking at transport, some have used the opportunity of having a trailer or a van to deliver purchased things to their new address or dispose of large items at the recycling station. Therefore, there is a slight overlap between the moving and preparing and the moving and settling phases. To have a clear image of resource consumption, the consumption during this phase was accounted for in either the preparation or settlement phase. In Figure 6.4. the moving is mapped, however, none of these elements when investigating the consumption of textiles, electronics and furniture.

Visiting the recycling station and retail store is where moving overlaps with preparation and settling. Therefore, the consumption is analysed as part of sorting out and furnishing.

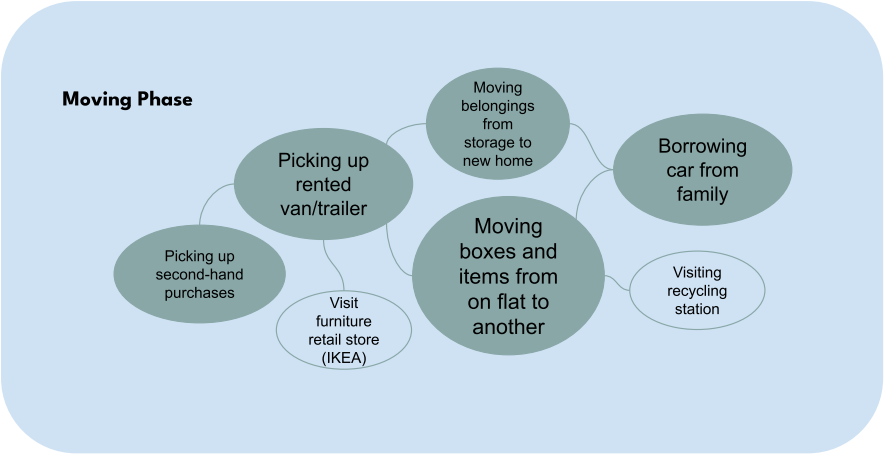


Fig. 6.4. Map of the moving phase.

6.2.3 The Settling Phase

It is very different from participant to participant when they are *settled* in their new home. This is both connected with time spent living in the new home and the feeling of being settled. Furthermore, the manifestation of their vision of what the apartment should look like also plays a role in whether one is settled or not. The duration of this phase is also influenced by how much time the preparation phase took and how busy and stressed the individuals were. However, a rough estimate for the settling phase is three months based on the external findings of CM (appendix 14).

The consumption in the settling phase departs from rather practical needs e.g. for a bed, closet, or curtains, to more preference-related needs e.g. for a certain design or style that reflects their life change, personality, or character (appendix 13). Furthermore, resource consumption in this phase was somewhat more expected as seven out of eight new homes are bigger and therefore respondents had more space to fill out, whilst it varied how much the respondents both acquired and disposed of in this phase (ibid.). This phase was the most resource-consuming phase (appendix 1).

This phase is also a trial phase where respondents sometimes make wrong purchases as they are still unfamiliar with, or cannot express their vision for the new space (appendix 1:4). This is also the time when respondents get a new start and reevaluate their style and interior design choices (appendix 1; 13). Which can lead to old items being replaced with new items that fit better into the new apartment. The settling phase is visualised in figure 6.5, where the furnishing and replacing is where consumption shows.

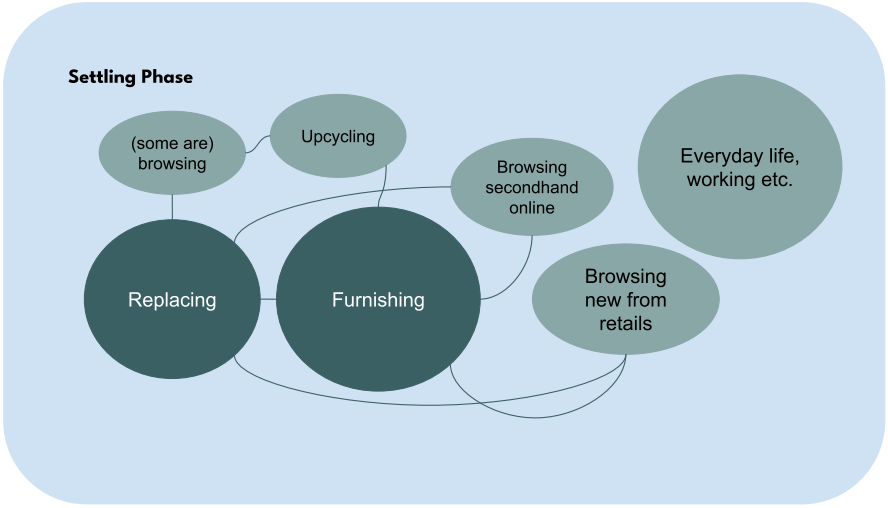


Fig. 6.5. Mapping the Settling Phase.

6.2.4 The Replacing Phase

A subphase of the settling phase is identified from empirical data. This is a phase of replacement.
The replacing phase is described as a time-period after moving when respondents adjust their homes to further reflect their wishes or needs. This phase often consists of replacing the items that do not fit in and becoming aware of wrong purchases (appendix 1; 4). The respondents often go through this phase after evaluation of the home they have created during the settling phase. However, it is difficult to identify when this phase begins and when it ends as it blends with the settling phase, as for some it takes time to settle. Furthermore, at some point, this replacement phase stops as the respondents are finally settled, where the end of the moving as a bundle of practices is also identified. The replacement phase starts when individuals begin to replace their belongings (in the new home) and ends naturally with the end of the moving process.

Resource consumption in this phase is very oriented around furnishing, therefore, items that are acquired and disposed of are mostly in the category of furniture. Therefore, the respondents' plans to replace items were also taken into consideration (appendix 1).

6.3 Categorising Consumption

To understand how the consumption of resources occurs, the respondents' consumption is categorised by practices of disposing, keeping and acquiring. These three categories then branch out to all observed subcategories gathered through interviews throughout the whole residential moving process. This is visualised in Figure 6.6.

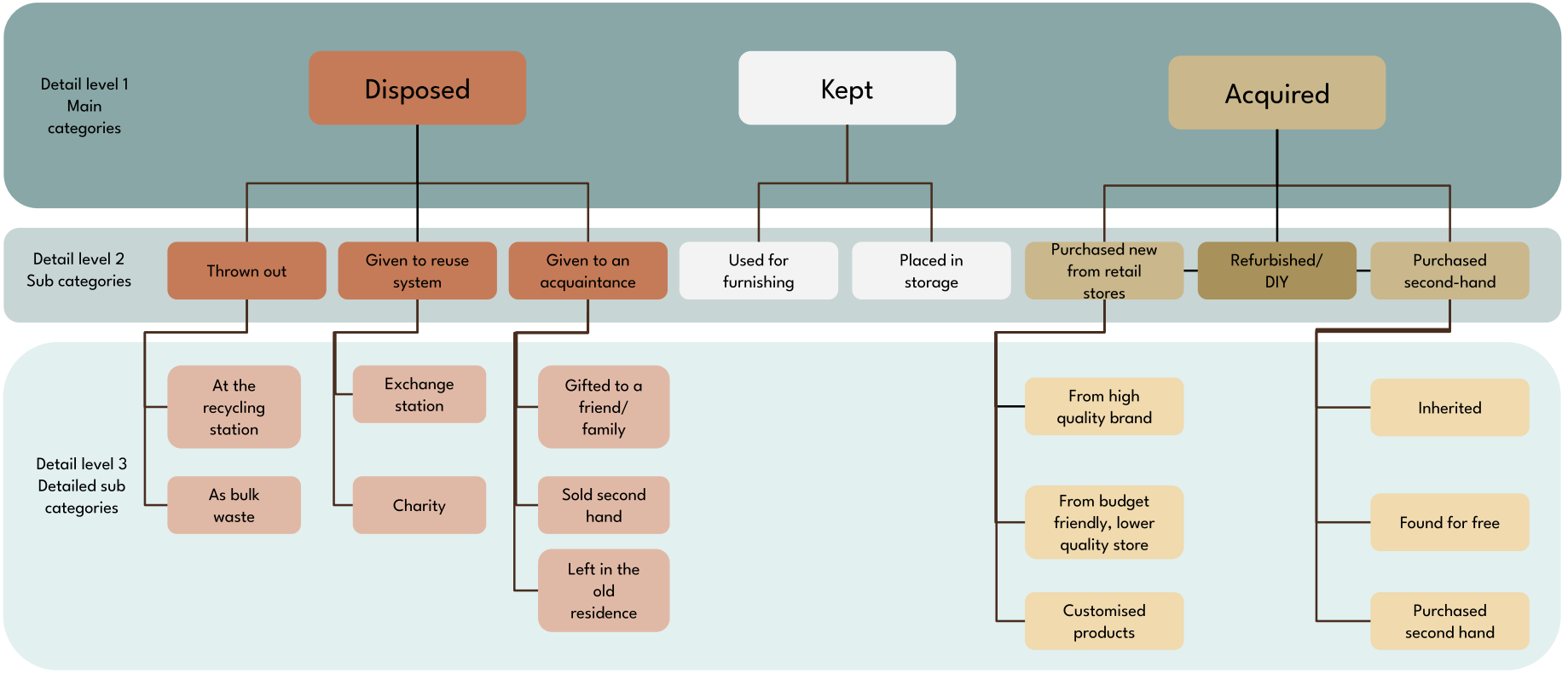


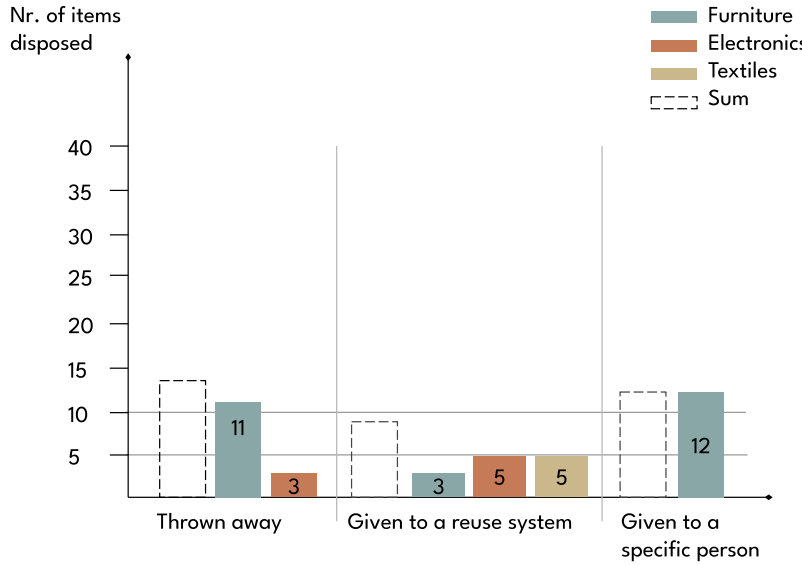
Fig. 6.6. Illustrates what happened to the belongings of the respondents, in the moving process, sorted in categories and level of detail.

The category of disposing is divided into three subcategories. 1. *Thrown out,* 2. *Given to reuse systems*, and 3. *Given to an acquaintance*. The category of acquiring is also divided into three subcategories: 1. *Purchased new from retail stores*, 2. *Refurbished/ DIY* and 3. *Purchased second-hand*. The second refurbish/DIY is coloured darker as it connects to both second-hand and new purchases. This is due to the refurbished items using both second-hand and new items.

Giving to an acquaintance and *giving to a reuse system* are both about the intention of keeping the item in use. A reuse system can be an exchange station in e.g. residential courtyard or Røde Kors' clothing container, the intention is to give the item new life. The deviation between the two categories happens as the likelihood of reusing is greater when items are *Given to an*

acquaintance[9]. The kept belongings are not relevant to this part of the analysis as the focus of the study is to find solutions for the reduction of
consumption of new items and disposal of belongings.

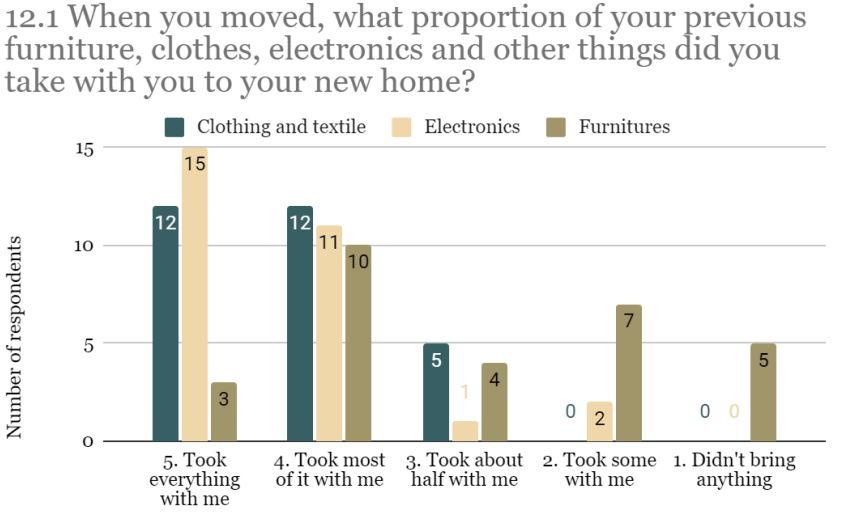
6.3.1 How do the Respondents Dispose of Items?



Graph 6.1 Number of items disposed of during moving.

[9]20% of the clothing given to Røde Kors is sent to resale in Danish stores, the rest is sold to other countries where again 77% is being directly reused (*Hvor ender tøjet? | Røde Kors*, n.d.), There are therefore about 18% of the clothes not being reused directly. Statistics from direct exchange stations in Aarhus show 19 % of what is given to the exchange station is not directly reused.

Graph 6.1. shows the number of items disposed of throughout the moving process. Most items were disposed of in the preparation phase and this number slightly rises in the replacement phase (appendix 1). Furniture was disposed of the most. The empirical data is further supported by the survey results that show that furniture is the most disposed category when moving (see graph 6.2.). Followed by textiles and just a few electronic appliances (appendix 1). Textiles were solely given away to donation, furniture was most often thrown out, however almost as many were given to acquaintances (ibid.). It is noticeable that respondents rarely give their furniture to a reuse system (graph 6.1).

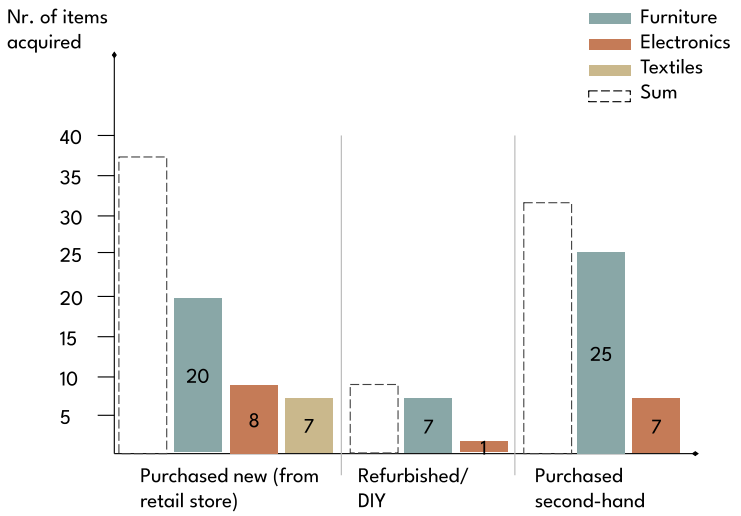


Graph 6.2. Results from the survey from the age group 25-34/ 29 respondents.

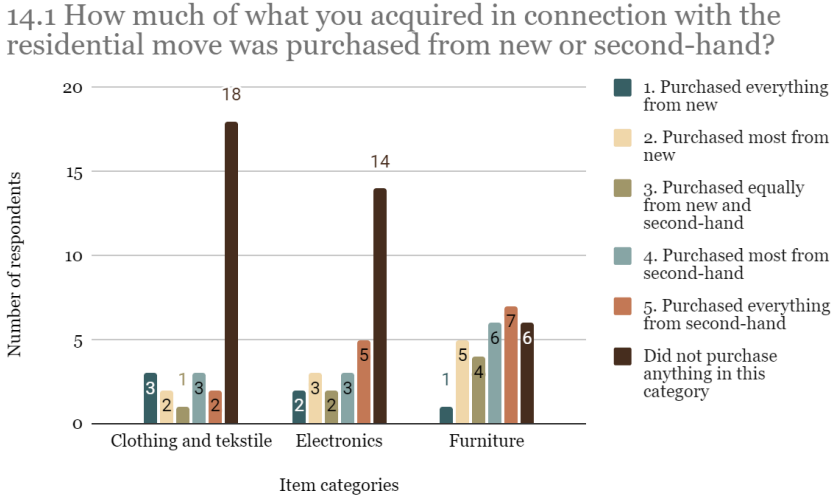
This is the phase where people acquire most items both new and second-hand items. Among the eight interviewees, twenty-six furniture pieces were disposed of. The disposal of items is highly connected to the time individuals have to prepare for moving which drastically influences how items are handled and if they stay in the circulation loop or if their lifecycle is ended. The further from the centre of the butterfly model (cf butterfly) the more the material value of the item decreases.
In this case, respondents have thrown away the most (14) items, given to the recycling/reuse system (13) and given to an acquaintance (12). This data shows that throwing out items is still a broadly dominant activity.

6.3.2 How do the Respondents Acquire Items?

Acquiring items happens as respondents tend to move to larger housing and move in with someone, therefore new needs arise which results in acquiring items. Graph 6.3. shows that acquiring furniture was the most purchased category. Furthermore, the survey (graph 6.4) shows that the most dominant category in the survey also is furniture when purchasing. When looking at Graph 6.3. and 6.4 it is seen that more furniture was acquired second-hand than bought new. Survey findings show that electronics were also purchased mostly second-hand, and equally new and secondhand for textiles.



Graph 6.3. Number of items acquired by interview respondents during moving.



Graph 6.4: Survey results on the new and secondhand purchases

The interview data shows that throughout the moving, 35 brand-new items were purchased (see Graph 6.3). This is mostly furniture with a few textile and electronic items as well. 32 items were purchased second-hand, mostly furniture and electronics. This data shows that the respondents still purchase more new items, however, the second-hand market is a prevalent way of consuming. What is interesting is that there is a higher circulation of second-hand furniture than purchasing new furniture. However, no second-hand textiles were purchased in the course of moving residential of the eight participants.

However, acquiring has far higher numbers than disposing. This means that respondents purchased more than they disposed of.
Another way to extend the lifetime and value of the items has been to repair and renovate stuff that can add both functional and personal value to the items. Seven items were renovated or DIYed. These projects mostly happen in the settling and replacing phase. This was often done to second-hand purchased items but new items were also purchased and then refurbished in ways of painting, screws, or other spare parts used to add value.
Multiple respondents purchased new electronics e.g. TVs and lamps and what accounts for the textiles is mainly interior textiles such as carpets, curtains, etc. that are acquired in this phase (appendix 1).
When purchasing, the respondents have either bought new, bought second-hand, or created refurbishing projects. What applies to all respondents is that they have both bought new and second-hand. Just three of the interview respondents have also tried to create DIY projects.

6.4 Sub conclusion

To answer subquestion one of: "*How does the moving practice looks like and where does the consumption show?"* the empirical data from eight interviews has been analysed and supported by survey findings and expert knowledge.

The analysis concludes that moving is a bundle of practices divided into three different phases: preparation, moving and settlement. All respondents engaged in all phases.

In the phase of preparing, the respondents see an opportunity to sort out the belongings that they do not want to bring along, therefore the disposal of items is highest in this phase. The preparation period has a great influence on what happens to the items that are disposed of and if they end up in the loop again or if their lifecycle is ended. Consumption occurred as all of the respondents perceived the moving as an opportunity to sort through their belongings either by selling, throwing out, or giving away to an acquaintance or an aid organisation.

The moving phase is identified to be a very short and intense period where only one respondent engaged in resource consumption. The empirical data shows that the phase of settling is the most resource-intensive phase due to both its length and the amount of new "needs" arising.

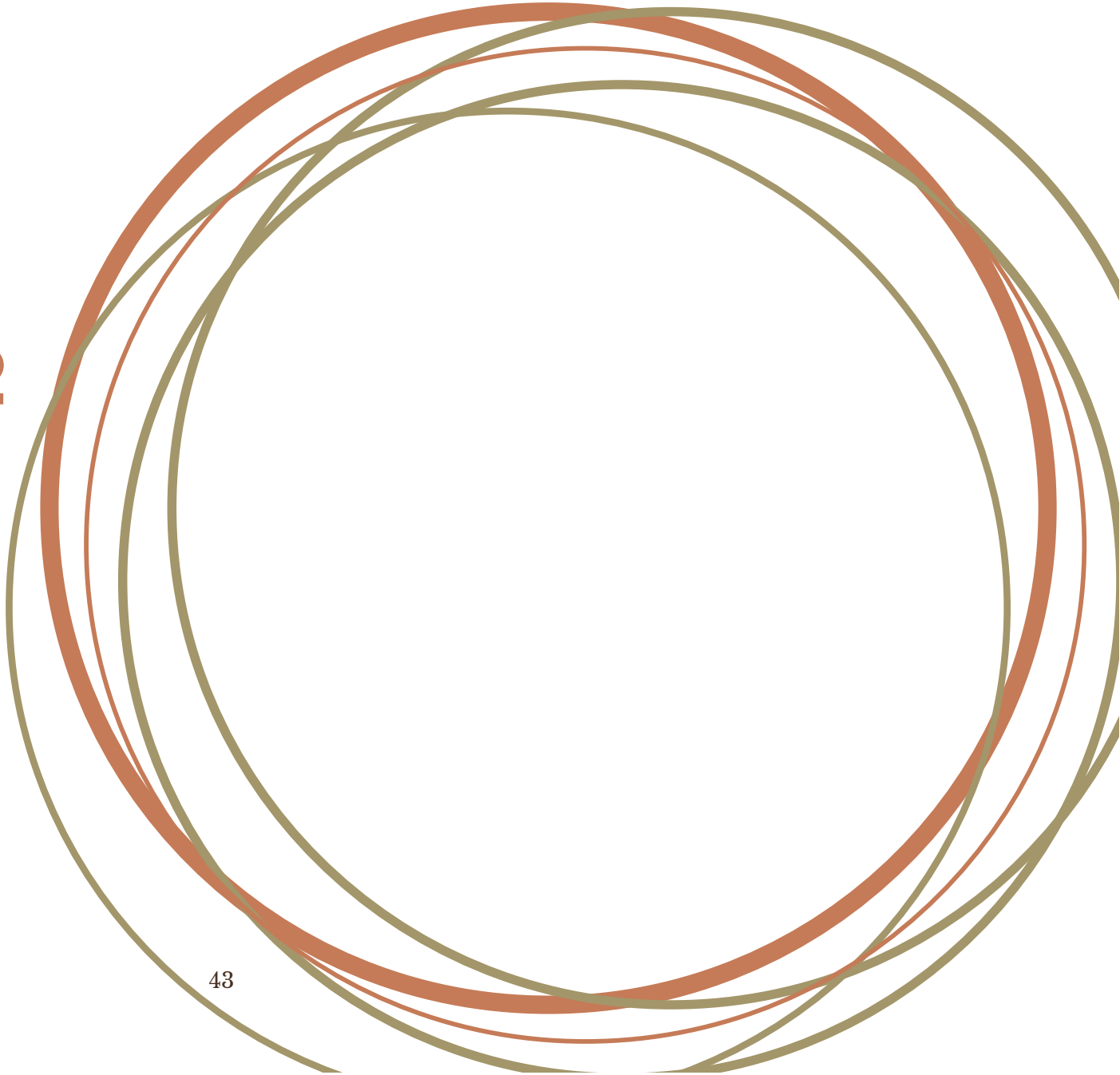
The data however shows the drastic difference between the purchasing and disposing consumption showing that respondents purchase far more than they dispose of. Thirty-seven new items were purchased and thirty-two second-hand. Even though the numbers are close, buying new

items is still more prevalent. Moreover, the consumption in acquiring is intense and much higher than disposal during moving.

The empirical data shows that the phase of settling is the most resource-intensive phase due to both its length and the amount of new “needs” arising.

The second most intense phase is the phase of preparation as the respondents sort out their belongings and dispose of items they are not in further “need” of. The least intense phase is the moving phase due to both the activity and the duration of the process.
Furthermore, the consumption of furniture is highest across all stages of moving, then electronics and lastly textiles. The settling phase was also identified as the phase where overall most consumption occurs.

7.0 Analysis 2 Elements and Drivers of Consumption



In the previous chapter, the moving process was analysed with a focus on how the practice looks and the respondents' resource consumption. This serves as a knowledge foundation, which the upcoming chapter will build upon. Analysis 2 will answer the following subquestion: "*What are the drivers of consumption and what is fostering good and bad consumption behaviour?"*

Firstly, the drivers of consumption will be identified. Thereafter a deeper look into the practice of acquiring and disposing will be taken by using PT.

According to PT, it is necessary to investigate and identify the opportunities for reconfiguration of elements or links in a practice. This will be done by analysing empirical data from the eight interviews and examining how respondents have various *meanings, competencies,* and *materials* that are steering each consumption pattern. The data will be analysed[10] and the findings will be divided into *(1) drivers of consumption, (2) good and bad behaviour in disposing of and (3) good and bad behaviour in acquiring*.

The findings will serve as the foundation of the design solutions that foster a new sustainable practice which aligns with CM's capabilities.

[10] Based on the interview we conducted an overview table in Miro where all the disposal, acquiring, and keeping of furniture, textiles, and electronics has been mapped. This has served as a working tool to get an overview of individual consumption. This table can be found in appendix 1 and will be referenced throughout this section.

7.1 What is Driving Consumption?

Moving can be a big change in one's life. More often than not, moving is connected to other circumstances in the lives of the interview respondents. Pia, for example, broke up with her boyfriend, which was a big life change that resulted in moving. Other respondents who have been together with their partner for a while were ready to take the next step in their relationship by moving in together (appendix 3; 7; 9).
The respondents, Tea, Ulla and Nova, have recently finished their studies and have gotten their first full-time jobs. This is where they decided to create a real "adult" home.

When moving, respondents' consumption was influenced by life phase changes which resulted in different needs. These needs are seen as drivers of consumption. They are categorised as essential or practical needs and non-essential or luxury needs.

7.1.1 Essential Needs

Essential needs arise when respondents are experiencing life changes e.g. moving in with a partner, there are some typical tendencies for new needs to appear. E.g. two single beds are swapped out with a new bed able to fit two people instead, or a need for a bigger shared closet appears (appendix 3; 6; 4). Some of the needs are more pressing than others, rather urgent e.g. blackout curtains or a shower curtain (appendix 1; 2; 3).

The demand for specific functionality is often a driver for purchasing new items or replacing old ones. Such as beds with storage solutions (appendix 3). Or furniture with specific physical dimensions like measurements or size "*When we moved we found out we had room for a bigger closet. It is a small apartment, therefore nice to have more storage*" (appendix 7: 00:16:36). This was e.g. the case with a table for Ulla, a bed for Fie and Jonas and Sille and Matty, a closet for Tea, and a sofa table for Kim (appendix 7; 3; 6; 4; 8).
Many utilise this opportunity to purchase items that have a better fit, both aesthetically and physically, in the new space (appendix 13).

7.1.2 Non-essential Needs

Some of the respondents are going through a major change in their life, e.g. getting their first full-time job (or moving in with a boyfriend - Some of them express a need to establish a home that reflects this life change and self-expression. This is done by investing in interior design. Respondents replace old belongings with upgraded items.
Tea most clearly describes how she now after ending her student life, would rather buy quality, durable, and designer items (appendix 4). Tea is stating a clear end of an era of the "*student life*" (Appendix 4: 00:30:54). An end to the failed DIY projects, cheap temporary furniture, and a start on adulthood expressed through her interior design. Tea purchases specific items that she thinks will fit well in her new flat, like the mirror for the entrance, the pax closet with the specific design, and the characteristic ostrich lamp (appendix 13.2 Tea). The same accounts for Nova, she recently moved into her own flat and purchased a new expensive designer sofa (appendix 13.1). She purchased the sofa as a self-reward for getting a full-time job and intends to own it for many years to come

> *"Yes! It [red. The sofa] was just such a gift to myself, I got this apartment and I felt a bit like it was my first adult home and then I was like, yes, I have money for that and I don't spend money on a lot of stuff normally. And I also had a big saving"* (Appendix 2: 00:38:11).

These respondents sought to establish a more settled adult lifestyle, which showed high consumption tendencies when furnishing. Often related to value and durability with the price of the item or designer name (Appendix 2; 3; 4; 6). Furthermore, a few of the respondents mentioned the influence of social media on their consumption and new needs that appear out of comparison and inspiration of others (appendix 2; 5; 6). Sille purchases a lamp on social media that was on sale but later regrets it as she realises that she already has a very similar one (appendix 6:00:40:00).

7.2 Elements of Good and Bad Behaviour

Now that the drivers of consumption are presented, the elements of *good and bad behaviour* of consumption can be identified. As previously stated, *good and bad behaviour* is rooted in a circular and linear economy. Taking departure in the classification of consumption (analysis 1) consumption methods will be viewed as *good and bad behaviour*.

This will identify the elements of *good and bad behaviour* in the two practices observed (disposing and acquiring), and opportunities for change and map the target practice of moving. The *good behaviour* will serve as inspiration for target practice and the *bad behaviour* will serve to identify the causes of *bad behaviour* and create solutions to transition them. Together, they will serve the main goal of creating more circular practices of acquiring and disposing of while moving.

When looking at the practice of disposing and acquiring we are collecting the findings in practice as an entity. This is done to see the respondents' cases as part of a collective socially shared practice, thereby observing all of the respondents together. The reasoning behind this is also to find the strongest tendencies and reasons for the disposal and acquiring of elements that can then be identified as good or bad, meaning needing replacing or increasing in the reconfiguration of the practice.

7.3 Elements in the Practice of Disposing

This section will solely focus on presenting the three most prone elements of *good and bad behaviour* in the practice of disposing. These elements are essential reasons why respondents consume the way they do and help identify the root of the problem of bad consumption and the potential of good consumption.

7.3.1 Convenience of Giving Items

Moving is shown to be a stressful period. Individuals generally have intentions of selling their items, but this is not always the case. It is rather common to give items away to acquaintances. The interviews show twelve examples where respondents have given away items to someone they know (appendix 1). Typically it is the respondents who have previously lived in shared flats with roommates or a partner who tend to give a lot of their belongings to the person(s) still residing at that address as this is most convenient. Often it is smaller miscellaneous items that are given and left behind but bigger furniture is sometimes also given away. Like Jonas who gave a bed and bookcase to his old roommate (appendix 2; 6; 3). Pia gave the TV to her ex-boyfriend, and Ulla gave a TV table and a closet to her old roommate (appendix 5; 8; 7:00:27:01). The reasons for giving away to someone you know seem to root in a combination of two things: The convenience of easily getting rid of items but also serves as an act of courtesy. However, convenience and timing are usually the main reasons why the respondents give these belongings away before moving.

7.3.2 Time Pressure

Another element in the practice of disposing that fosters consumption is related to time pressure during the moving situation and the preference for easy solutions. This reasoning is seen across the respondents.

Stress and lack of time during moving is also caused by the lack of time to prepare for the move.

Ea mentions that she would have liked to sell more of her belongings:

> "*I don't like to throw away stuff that maybe can be useful for someone else [...]I would have wanted to have like a bigger - like a flea market at our home...But there was no time for that.*" (appendix 9: 00:11:25).

Also, Pia mentions that "*We trashed some of the things [chairs]...We didn't manage to sell them*" (appendix 4: 00:16:50).

According to the respondents, throwing out was not the ideal solution, but they were limited by the moving situation to act otherwise.

Furthermore, selling second-hand often requires time, organisation and mental capacity to find a potential buyer and organise time and transport. Interviews show that many are familiar with this process and have previously successfully sold second-hand but the moving period is overly stressful for many of the participants to sell.

7.3.3 Low Valuation

When it comes to the valuation of items, especially furniture, a strong link is observed between the condition and the type of disposal that takes place. Whether items are thrown out depends largely on the perspective of the condition of the item of the individual.

The condition of items is one of the determining factors in how items are disposed of. If the condition is bad, the items are typically thrown out. This is seen in the case of Tea who got rid of two lamps because they were greasy and disgusting. They were driven to the recycling station (appendix 4). Or Fie, whose bed was so worn that the springs were coming up through the mattress and the legs fell off (appendix 3). Ulla disposed of her TV table and replaced it with a new one gifted by her mom, which she likes better. As Ulla describes her old TV table "*it was just IKEA*", reflects a negative value to the TV table and the brand, and a description of a TV table that she "relationally" can discard since it is "*just IKEA*" aka worthless. This example implies that negative value can foster a replacement of one's belongings.

Another interesting example of disposal due to the negative valuation of an item is Sille who gave her mom the old table that she perceived as being "*nasty*" due to the dissolving paint on it (appendix 6: 00:20:22). Sille's perception of the table completely changes when her mother upcycles it "*...[She] made it much nicer than when I had it...It was very ugly when I had it....So now I regret a little bit that I gave it to her...*" (appendix 6 00:20:22).

Fies sofa was in fine condition, but it was a spare since they would rather have Jonas's sofa inherited from his grandparents. Therefore she sold it on the marketplace for just 100 DKK (appendix 3).

This is to say two things: Negative valuation can be connected with the brand and monetary value, and the perception of an item's worth and value can change by upcycling it. It is important to point out that not all respondents have the same

valuation systems. Some see items as worthless because they are not clean, and others wait until the product is not functional and cannot be repaired to dispose of it.

7.3.4 Donations

Six of the eight respondents have either given clothes, bed linen and a bed cover as donations to Røde Kors, thrift stores or an exchange station (appendix 2; 9; 7; 4; 3). According to Fie, she would rather give her clothes to people she knows or to a thrift shop than sell them (appendix 3: 00:11:31). "*Yes, but only if [the clothes] is worth a lot of money, otherwise I don't think it is worth the trouble*" (Appendix 3: 00:11:07). For her, the clothes would be worth selling if she could earn 500 DKK or more on them (ibid). Nova also mentions the "worth" of going through the trouble with selling online and says that it should *"obviously"* be more than 30 DKK of earnings before she would go through the effort of selling her clothes before choosing to donate (appendix 2: 00:28:49). This indicates a lower limit for when Nova thinks it is *worth* going through the trouble of selling instead of donating (and links to the chapter of valuation). Nova only disposed of some textiles by donating them to Røde Kors by disposing of a bag of clothes in one of their nearby containers (ibid). Ulla states "[*giving to Røde Kors] was just the easiest*" (appendix 7: 00:10:51). Since throwing out is also a rather easy way of disposing of clothes, this indicates that the act of throwing textiles out was not even considered. Ulla was further asked if she even considered selling her clothes, which she did not (ibid.). This was the simplest and easiest solution that was the driver of her disposal of clothes (ibid.). Donations to thrift shops and Røde Kors containers must also relate to a charitable narrative, but the convenience and shared concern of not producing more textile waste is the driving reason for the donations.

Concerning the practice theory, donations seem to be a strong link between the convenience of disposal and the meaning of a charitable narrative. Furthermore, there seems to be an embedded knowledge of how people dispose of clothing.

Only clothes are donated, as there seems to be a system and practice in place and as these donation containers are found around the city. So from here, we can see the opportunity for expanding the donation system to other categories like furniture and electronics. That also creates an embedded knowledge that already exists with Røde Kors. In contrast, there are rather weak links connected to competencies, which indicates that peoples' competencies only to a smaller extent play a part when donating. The competencies that are drawn on are the knowledge of knowing about the possibilities of donating and knowing the location of the containers and thrift shops (appendix 1). These competencies helped individuals to dispose of their items in the right way.

7.3.5 Mapping the Practice of Disposing

Kuijer argues that practice as a whole cannot be represented by one place, instance or person, but rather as a whole based on various sources of partial knowledge (Kuijer, 2014). Therefore, the figure 7.1. maps the Practice of disposing based on findings from all interview respondents, analysis 1 and analysis 2. The graph maps respondents' meanings, materials and

competencies. The size of the circles is drawn from the empirical data from analysis 1. For example, the circle of thrown out is the largest as this was the most common way respondents disposed of their items. Analysis 2 maps the meanings of why respondents handled their items the way they did. Materials are defined by the scope of the project which focuses on furniture, electronics and textiles.

Drawing on the section of this paper of objectively defined good and *bad behaviour, good behaviour* is rooted in the reuse of items whereas *bad behaviour* is ending the lifetime of a product. It is concluded that *thrown out* is categorised as *bad behaviour*, therefore it is an element that needs exchanging in the reconfiguration of the practice.

It is difficult to look at meanings in the same simplified way as there are multitudes of reasons connected to the actions of respondents. However, time pressure and low value are the main reasons for ending the lifetime of a product. Therefore, these elements are also identified as the ones to be exchanged in the reconfiguration of the practice.

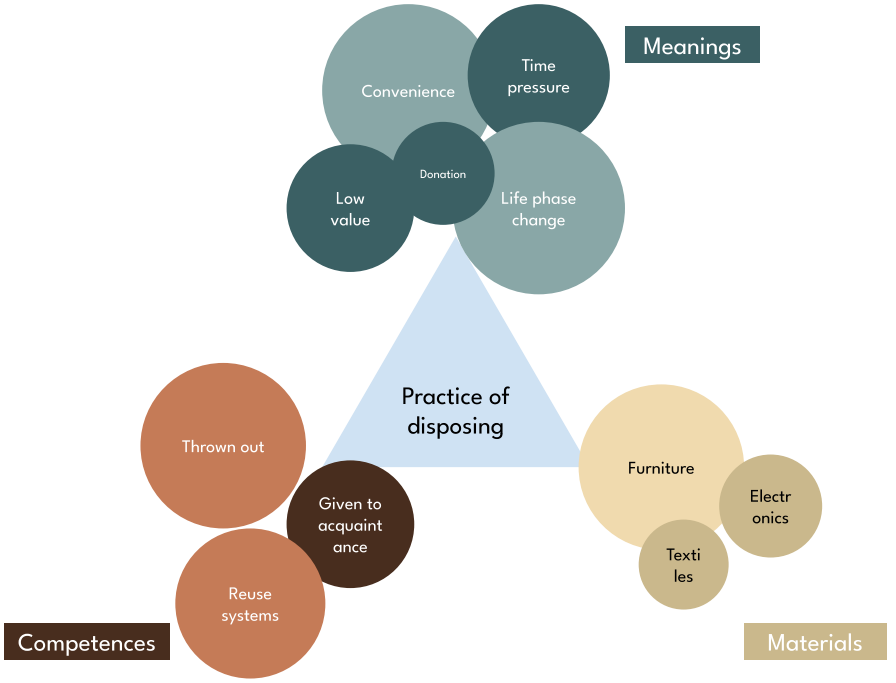


Fig. 7.1. Mapped practice of disposing, elements of good and bad behaviour.

7.4 Elements in the Practice of Acquiring

This section presents the four most prone elements in the practice of acquiring and the reasoning and connection to the way respondents acquire their items the way they do. Identifying these elements and if they are categorised as *good or bad behaviour* is essential for the reconfiguration of a practice.

7.4.1 Convenience

Demands and needs are connected to convenience. Nova has bought a new sofa and TV due to the possibility of having it delivered to her address and to avoid the hassle of transporting the large, unhandy sofa and TV herself (appendix 2). Other respondents like Tea have also used delivery services due to convenience.

Fie and Jonas mentioned that they wanted a bed with storage solutions. They found it very convenient to go to IKEA, find a bed that they liked, and have one of the transportation service companies transport them and the new bed home for a very reasonable price (400 DKK).

In the survey choosing to buy from new is also about convenience. Most respondents chose to buy new because it was the most practical, also the choice was made for doing the most time efficient was something people chose to buy new. Two chose both buying from secondhand because of the choice being the least time consuming, one explained she paid extra for a TV table to have the second-hand seller deliver it to her, which meant she did not have to spend time going to IKEA (see appendix 11, respondent 30, question 19).

In the interview with Ulla, she mentions that she would have liked to have purchased more second-hand but due to stress she lacked the mental capacity to do so:

> "*That environmental focus can get reduced a little when you are stressing about the move and the whole process, and it has to be easy, and fast and you just have no mental capacity to do it all"... For next time, I would like to buy even more second-hand e.g. the sofa*" (appendix 7: 35:00).

This indicates that there is a discrepancy between what the respondent wants to do, and what she is doing, which is due to stress from the moving process.

7.4.2 Time Pressure - A Reason to Neglect one's Ideology

Examining the drivers of consumption, it could be expected that ideology could be a driver for good consumption behaviour, but interestingly, it does not seem to have a great impact. This pattern of abandoning ideologies when the respondents are under time pressure is the case with Ulla and Tea. They both work at an environmental NGO. They have rather recently completed their studies and started their first full-time job. They are both engaged in the topic of climate crises and wish to have as low an environmental footprint as possible (appendix 4; 7). But still, they are both in the group of respondents that have bought the most new items. As Ulla mentioned:

> "*If I were to dream about what I would have done, then I would have had as small a material footprint in relation to the [moving], but it is just not always what happens when reality hits....Then it is just about what it easy*" (appendix 7: 00:35:00).

Despite their expressed values, other elements seem to be the driving forces for their purchasing decisions. As in the case with Ulla, the convenience seems to overrule her ideologies (ibid.). The reason for throwing out or buying new (bad consumption behaviour) is often related to stress, lack of time, or mental capacity to sell or buy second-hand items.

Tea's boyfriend, who works in the military, was sent away on a mission which additionally made the moving process even more time-pressured for her. It had to be properly planned so they could get the big things done when he was still home in Denmark (appendix 4). This seemingly influences Tea's consumption choices, by choosing to go to IKEA and Elgiganten and buying a new sofa and TV from a retail store, because they then were certain to get *the job done* on the day planned.

Out of these examples, it can be concluded that the stress factor from time pressure during moving is a strong link between elements of meaning and materials. This is to say that the link of stress influences individuals to abandon their ideologies and dispose of and acquire them in a way that is not aligned with their values. Therefore, it is often the easy solution they choose, like throwing out items. There is an opportunity here to exchange the elements and what is perceived as an "easy" solution.

7.4.3 Monetary Value

In some cases, it seems like the respondents' valuation of items is based on the price or the brand of the item. E.g. Nova mentioned that she bought a new TV and that she did not know any specifications about the TVs, so she bought an expensive TV with a discount. The original price was high, so she figured that it must be a great TV (appendix 2: 00:43:13). The same accounts for her 17.000 DKK. sofa, which she believes she will have for many years (appendix 2: 00:10:35). Tea e.g. buys a Le Klint lamp because she identifies the brand Le Klint with being good design both aesthetically and in quality. There is a strong link that respondents make between new expensive items and quality (Appendix 4).

Throughout all the interviews, it is clear that the respondents talk about valuation both in acquiring and disposing from a monetary perspective. For Ea saying "I have had it for seven years, I don't feel like selling something that I have used that much. Indicating that the item has no value to be sold or that "reuse" in itself does not have value. It is the financial income that determines whether it is worth selling or not. The same accounts for Ulla. She has her old TV stored in her basement. To her, it is not worth selling because it is old and she lost the remote.

7.4.4 Socially Shared Practice

Examining the consumption of the respondents, there is a group of respondents who have a different approach towards consumption than others. These were Kim, Ea, and Nova who

disposed of very little when moving. Kim disposed of nothing in this phase, Nova only a bag of clothes and Ea some textiles: clothes, bed sheets, and covers (appendix 1; 8; 9; 2).

For Ea and Kim, it is very distant to even consider buying new items. What they all have in common is that they moved away from student dorms. Kim and Ea used to have the lifestyle of a student, with less space for large items (appendix 9; 8). The same goes for Nova who used to live with a friend in a shared flat (appendix 2). Therefore, their valuation and standards are very different from the other respondents.

The reason for Ea to buy second-hand was always because of economic reasons, but interestingly, now Ea's financial situation has changed but she still prefers to buy second-hand, because she is used to it.

My World doesn't work like that, that I would be able to buy a new thing. [Not] even like clothes and stuff." "*[...] also in my childhood, it has always been so...*(00:21:15). This aligns with PT. Practices are inherited and socially shared (Kuijer, 2014), which seems to be the case at the dorms. Here is a widespread social norm for reusing items.

There is a strong connection between the respondents who threw out the least and also lived in shared flats, small flats, or dorms. One reason for this is that they didn't have many belongings to start with and another is that they have this shared or embedded habit of finding cheap or free items.

Thought-provoking is it when asking Fie if she used the nearby exchange stations. She mentions that when she lived at Skanderborggade, "*there was a place like that [nearby exchange station] down in Nordhavn, where I something went by*" (appendix 3: 00:57:57). She was asked in the interview if she became aware of the exchange station, to which she replied: "*It was something I discovered because I passed by. I didn't know it was there, and it wasn't because I needed anything, but after I discovered it, I have passed by looking*" (appendix 3: 00:58:20). With this small telling Fie sets an example of a citizen that does not seek out the opportunities that actually/already exist, but someone who actively uses them when she has become aware of the opportunity near her.

7.4.4.1 The Treasure Hunt

The tendency to purchase second-hand items is seen in the same respondents who share the embedded competencies of reuse. What is also noticeable for these individuals is that they are invested in second-hand purchasing because of the thrill of the treasure hunt. In the reward system, dopamine peaks when they feel like they won (appendix 3,5,8,9).

Fie and Pia mention that they prefer to purchase second-hand (appendix 3; 5). Fie likes that she can lay on her sofa at home, scrolling to find the coolest unique styles and aesthetics on the various second-hand platforms (appendix 3). Fie describes it as being like a "*treasure hunt*" (appendix 3). Another respondent who uses the nearby exchange station is Kim. He also describes the thrill and joy of participating in the "gamification" of the hunt for the better items (appendix 8).

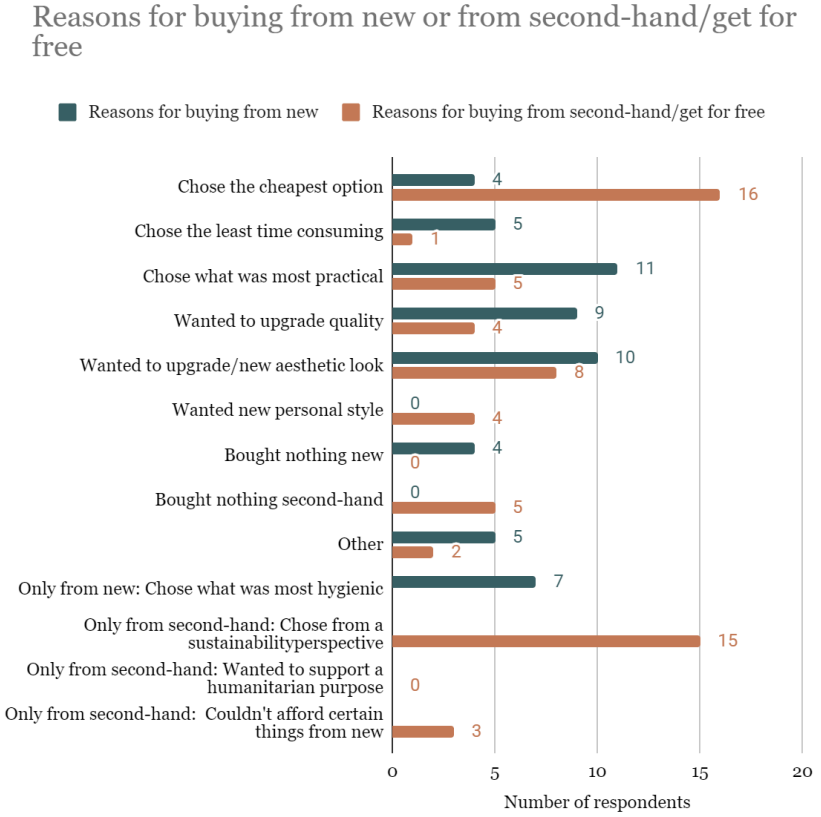
Ea is from Finland and she tells about a common Finnish tradition of hosting home flea markets and posting it on digital social groups for Finns in Copenhagen, where they would be selling out their belongings e.g. before a residential move

(appendix 9: 00.40:01). Ea enjoys these home markets. Both the social part and the possibility of making a bargain:

> "*Usually the Finnish people have like coffee and stuff, and then maybe I would find only one thing. But yeah, for me, the flea markets are kind of like hunting game. Yeah, cheap and fun*". (ibid.)

Ea is one of the respondents who purchases a lot second-hand and enjoys finding things for free. To that she also mentions the "hunt": "*...it's more about the luck. I like to hunt, I like to hunt that. It's nice to go and then I personally like the feel*" (appendix 9: 00:40.13).

According to PT, this "treasure hunt mindset" of perceiving consumption seems like a form of entertainment or an enjoyable activity that presents elements of meaning. The repeating strong link is created in acquisition seen in many respondents. The gamification and the hunt are seen as a strong link and reward system binding materials and meanings. However, we see that the element of competencies also holds a strong value in empowering this skill and gamification in users. This competence is seen as an inherited trait in Kim and Ea as they grew up or have been involved in social exchange systems in their lives, therefore, they are trained to navigate these systems and good deals, prices, and things for free. The competence that is noticeable in others who enjoy the hunt is the ability and knowledge to navigate digital apps and be aware of the nearby recycling, reuse and second-hand opportunities. The element of competencies is present when searching for the right second-hand furniture, either by searching online, at the nearby exchange stations, or at the Finnish private home flea market.
They also enjoy the gamification of the hunt for free or low-priced items. The survey indicates also an interest in the low price when buying second-hand. Where for buying new rooted in both essential and non-essential needs e.g. aesthetics and quality, see graph 7.1.



Graph 7.1. Survey results on reasons for purchasing new and second-hand items.

7.4.4.2 Positive Valuation

Pia finds an old sofa in the trash which she refurbishes. Even though the sofa itself did not cost anything, her valuation of it is very high as she invested time and resources into refurbishing it. The valuation of it also lies in the fact that it is something that she has made.

Furthermore, Fie and Jonas get the opportunity to inherit a designer sofa that has been in Jonas' childhood home, which has an emotional value to him. Jonas mentions how he sees that sofa, with its timeless and durable design, one day being inherited by his children (appendix 3 00:50:55).
Jonas highlights that if the sofa was ever broken, he would get it repaired (ibid.).

Thereby, can it be said that the negative emotional attachments can foster purchasing new, while at the same time, positive emotional attachment and valuation can make the respondents want to keep their belongings and may even repair them if they break.

7.4.5 Mapping the Practice of Acquiring

Just like with the practice of disposing, the practice of acquiring draws on both findings of analysis 1 and 2 and observes the meanings, materials and competencies. As concluded in Analysis 1, the practice of acquiring is more resource-consuming than the practice of disposing.

In Figure 7.2., the sizes of the elements present how often people resorted to this option. Analysis 1 shows that both in the practice of disposal but also in the practice of acquiring furniture is the most common element. Furthermore, it shows that people still highly resort to buying new items from retail stores when moving.

Findings from analysis 2 show that life phase change was identified as one of the main reasons for acquiring new items. However, the question of why new items are bought over second-hand items is answered by other elements of meaning.

The *good behaviour* in this case is purchasing something second-hand or refurbishing an item, whilst the *bad behaviour* is drawing more new resources into the ecosystem by purchasing new items from the retail store. Therefore, the purchasing of new items needs to be replaced/lowered in the reconfiguration of the practice.

Figure 7.2 shows that monetary value is one of the main reasons individuals buy new items from a retail store. This is due to the embedded knowledge or assumption that monetary value is interlinked to quality durability and function. *Monetary value* is therefore an element needing replacement in the reconfiguration of the practice to a more sustainable one. As stated before, the meanings are very complex as they are most often a combination of reasons why respondents choose the option they do. Therefore, convenience was often the last push towards a certain decision.

The practice of acquiring also shows the *good behaviour*, with a relatively large circle of acquiring second-hand items and some

refurbishing projects. The meaning also shows the *socially shared practice* and the treasure hunt as examples of *good behaviour*. These elements also need reconfiguration in terms of increasing whilst at the same time lowering the *bad behaviour* elements.

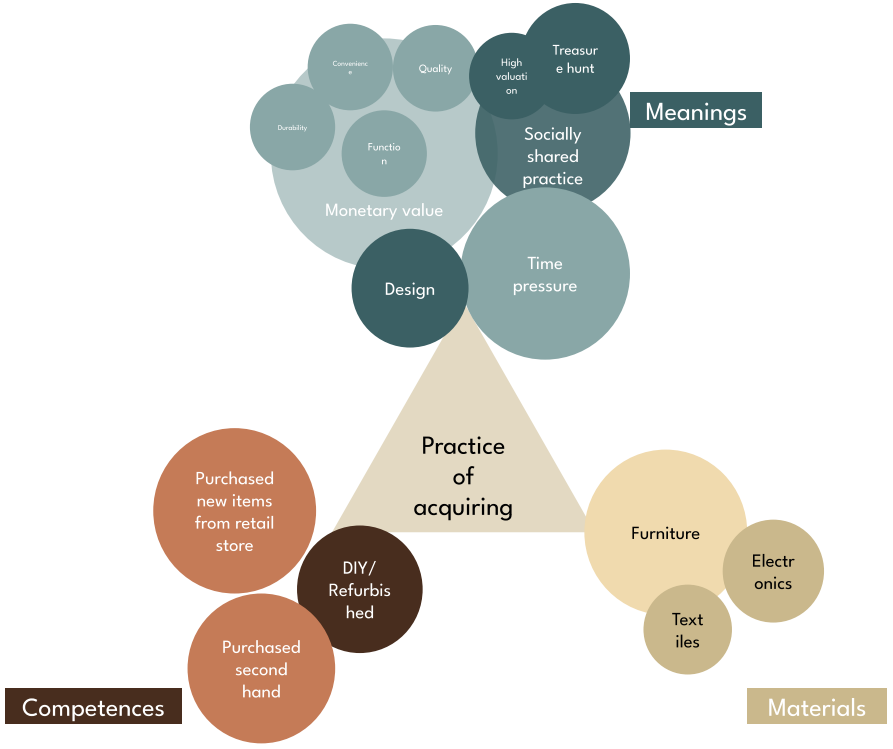


Fig. 7.2. Mapped practice of acquiring elements of good and bad behaviour.

7.5 Sub Conclusion

To answer the question "*What are the drivers of consumption and what is fostering good and bad consumption behaviour?*". The eight interviews have been analysed through PT based on meanings, materials, competencies and CE.

In the process of moving, new needs will always occur which ultimately leads to consumption. Life phase changes were identified as drivers of needs. These needs were categorised as essential and not essential needs. The needs further affected the consumption drives and ways respondents purchased their items.
It is important to notice that the drivers of consumption often overlap or build upon each other. There is rarely only one reason for consumption.
In the practice of disposal, the elements linked to *throwing out* (defined as *bad behaviour*) are identified as time pressure and *low valuation* of items. Many respondents imagined selling their items but did not manage to do so due to time pressure, therefore they threw their items out. Having a short period to prepare and move is therefore identified as a crucial point affecting consumption.
The elements that reflect *good behaviour* are identified as embedded knowledge. Respondents have shown embedded knowledge of navigating recycling and reuse systems as well as digital platforms for the resale of second-hand items.

In the practice of acquiring, elements that were linked to purchasing new items are monetary value, and aesthetics which are rooted in a wish for self-expression through one's interior

design. The monetary value consists of a combination of elements that individuals relate to. Monetary value is often perceived as a guarantee that the item is of good quality and design and that durability is ensured.
(Respondents often purchase expensive new items believing they will vouch for durability and quality.)

The elements that reflected good consumption behaviour are identified as *socially shared practice* and the *treasure hunt*. The *socially shared practice* is a driving force of good consumption behaviour and fosters many aspects of CS. It fosters more second-hand use and more shared belongings and lowers the consumption of new items.

It is though important to note that the way respondents value items varies from respondent to respondent. Some connect the value of the product with its price tag, others value uniqueness and others value items they made or refurbished themselves. This is the most complex element as individuals are so different in their perceptions and valuation systems.

8.0 Design Suggestions

This section will answer the final subquestion:

> *How can Copenhagen Municipality foster a greater degree of circularity concerning residential moving?*

This section presents the final suggestions for Copenhagen Municipality to implement, to increase circularity among its residents during moving.

The design suggestions take departure from the findings of analyses 1 and 2, where the practices of *disposing* and *acquiring* have been mapped out and the main drivers of consumption are presented alongside the elements of *good* and *bad consumption behaviour* that have been identified. The final suggestions are based on these findings and attempts to find solutions to reconfigure the two practices of *acquiring* and *disposing*.

When looking at the practice of disposing (see figure 8.1), the *bad consumption behaviour* under competencies was identified as ending the lifetime of a product and described as *throwing out*. The element of *low valuation* in meanings needs to be changed to influence the *bad consumption behaviour*. Both of these two elements need replacing to foster a greater degree of circularity. Figure 9.1 visualises the exchange of elements in the practice.

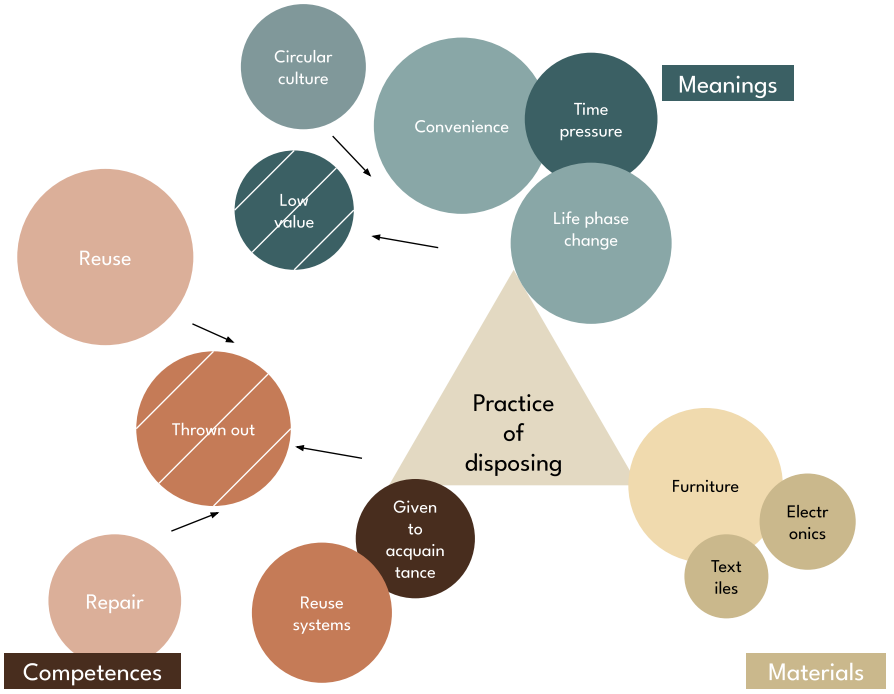


Fig. 8.1. The reconfiguration of the practice of disposing.

The same can be said for the practice of acquiring. *Purchasing new items from a retail store* is identified as a *bad consumption behaviour* and should be replaced, as well as the *monetary value* in meanings which consists of complex elements of meaning. These elements need to be replaced and the practice reconfigured to foster a greater degree of circularity in the practice of acquiring, see Figure 8.2.

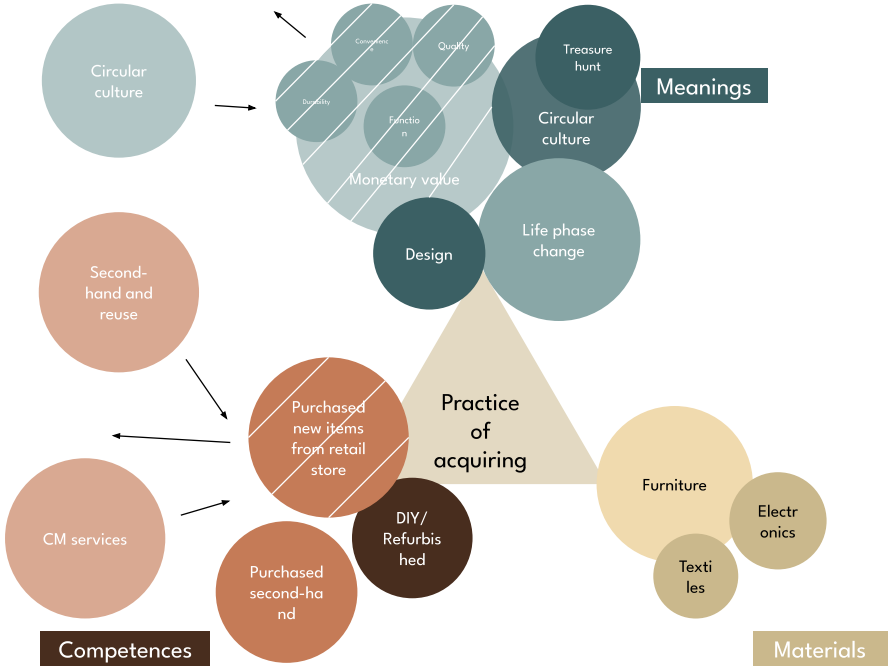


Fig. 8.2. The reconfiguration of the practice of acquiring.

To do so, ten design solutions (figure 8.3) were formulated and presented to the participants at the workshop. These solutions are created in the framework of CM's roles in society the role of 1) a facilitator, 2) a developer of local knowledge infrastructure that supports the local incentives 3) demand green public procurement support marked development for green solution 4) a policy developer e.g. establishing tax structures, rules, etc. 5) innovation, investment and operation of infrastructure facilities (Jørgensen, 2019).

At the workshop, these ideas were assessed and further developed in a co-design process with sustainability experts and citizens. Figure 9.3 presents the ten ideas[11]. These suggestions have then been further tested through an interview with the project leader in CM, Michel Cirulli.

[11] More information about the workshop, including the ten ideas, the design game, evaluation, and the co-design can be found in appendix 12.

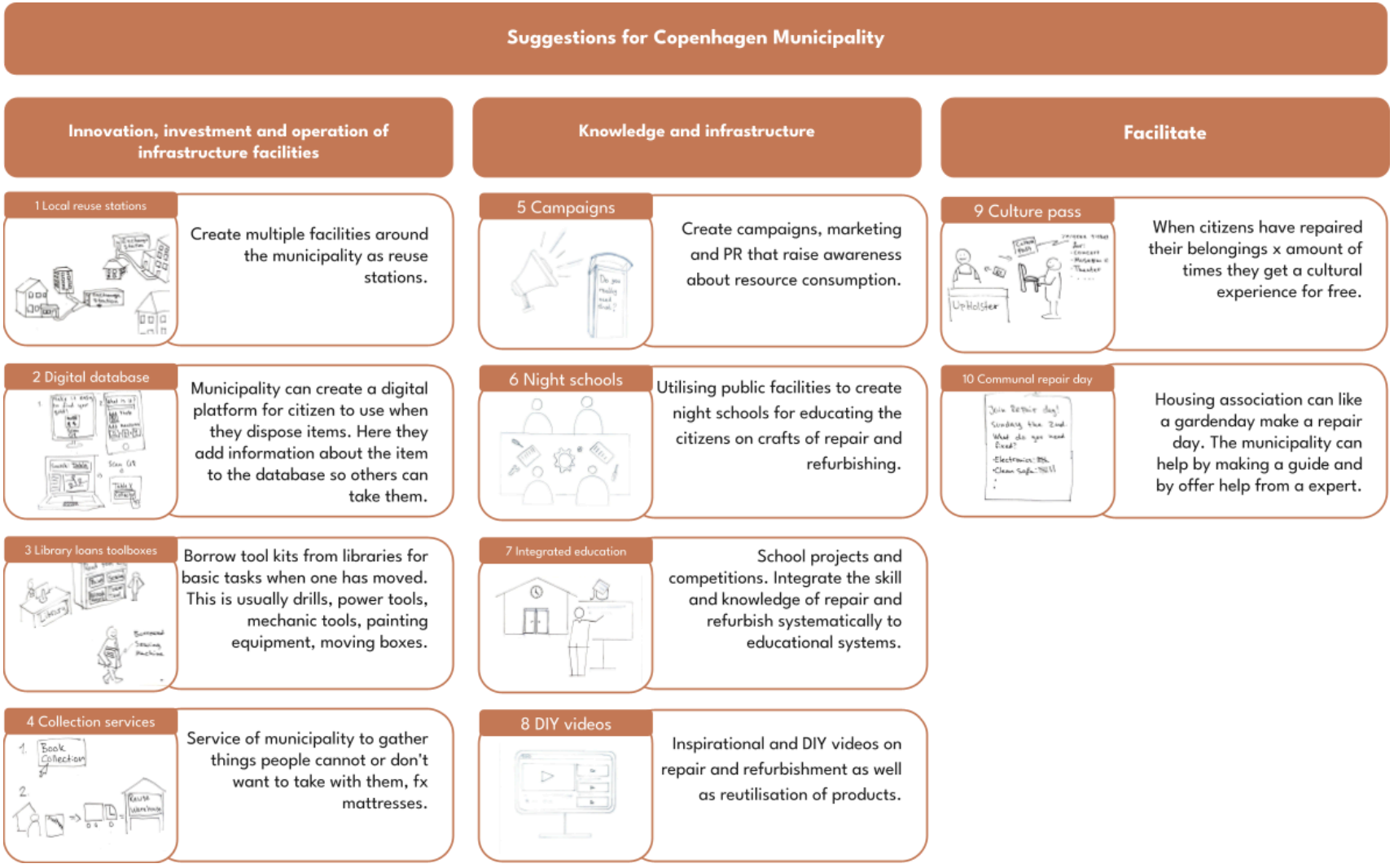


Fig. 8.3. Overview of the ten suggestions created, and presented for the participants and experts[12].

[12] More information about the workshop, including the ten ideas, the design game, evaluation, and the co-design can be found in appendix 12.

8.1 Findings from the Workshop and the Expert Interview

The workshop was held to qualify and evolve the suggestions with both citizens who have moved within the last year and sustainability experts. The evaluation of the suggestions was realised through a design game where some suggestions were supported, some debunked, and some elaborated further.

The workshop showed that a few of the solutions already exist in a similar form. This accounted for the solution concerning (idea 2) the digital database for exchange stations. The participants mentioned that DBA, FB Marketplace, Vinted, Gul og Gratis, and other digital platforms already exist. One of the experts mentioned that CM should rather focus on how to facilitate a partnership among the market actors engaged in the second-hand market, like Røde Kors, Kirkens Korshær, etc., and investigate how they can collaborate across and create synergy effects fostering a greater degree of second-hand circulation among Copenhagen citizens (appendix 12, group 1: scheme 1). Idea 6 concerning night schools for educating the citizens about repair and refurbishing was also debunked as participants would not use such opportunities (appendix 1, group 1:3: scheme 1:3). Some mentioned that these initiatives already exist e.g. at Sydhavnens Genbrugsstation (ibid.). Idea 8 about creating a page for inspiration and DIY videos on repair and refurbishment already exists according to the participants. E:g. Youtube, TikTok, and Videncentret Bolius, among others (appendix 12, group 1: scheme 1). The culture pass (idea 9) is a more controversial solution. Some participants believed it is a great idea whilst others did not see how this would work in practice e.g. a bed or a sofa that needs reparation is not going to be carried down from 4th. floor to be repaired (appendix 12: group 1: scheme 2).

The idea that the participants did like, was more reuse facilities around Copenhagen (idea 1). A remark was made that the recycling station is located too far away, but that they would use a nearby exchange station if there was one (appendix 12; group 3: scheme 2). Other participants expressed concern as to how these stations will be used e.g. people would just drop off their trash (appendix 12: group 3: scheme 2). One participant mentioned that it would be nice to have an overview of where the nearby exchange stations are (appendix 12: group 1, scheme 3).

Another idea that was well received was the opportunities to borrow power tools (idea 3). It is possible to rent various power tools in warehouses like Silvan and Røverkøb (appendix 12: group 1; scheme 1). However, participants mentioned that it was quite expensive to rent and if there was a cheap or free solution, they would use it, there could even be a deposit or small fee (appendix 12: group 1: scheme 1:) A remark was made that this solution could also include gardening tools (appendix 12: group 2; scheme 3).

The 4th idea of the pick-up service was positively received. However, reflections on this idea included the price and the misuse of this service. (appendix: group 3: scheme 1).

In all three groups, the participants mentioned that campaigns raising awareness about resource consumption was not the way forward and suggested that the CM should rather communicate the possibilities that already exist and focus on creating awareness among its citizens (appendix 12: group 1; 2; 3). E.g. local posters mapping the closet exchange facility or where the citizens of Copenhagen can go if they want to acquire second-hand (app. 12: group 1; scheme 2; app. 12: group 2: scheme 1).
The tenth idea of a repair day was received positively and further developed. Two of the participants mentioned it could be combined with other kinds of events also, such as local flea markets (appendix 12: group: 1 scheme: 2; group 3: scheme 3).

8.1.1 Reevaluation with a Residential Moving Expert

These solutions were reevaluated with an expert from CM Michel Bjørnskov Cirulli who has himself researched (resource waste in relation to) residential moving in Copenhagen and has great insight into the field from a CM's perspective. The ten solutions and reflections from the workshop have been presented over a Teams meeting.
Two groupings of positively perceived ideas were made:

8.1.1.1 Communication and Information

The main insights focused on the fact that communal recycling stations are still perceived as disposal places and that the residents were not aware of the possibilities CM recycling station and other solutions have. CM is not communicating all the solutions that already exist.

8.1.1.2 Supporting New Circular Social Practices

A grouping of a few solutions has been made to foster circularity including, integrating systemic knowledge into education, communal repair day, and expanding the amount and the concept of exchange stations.

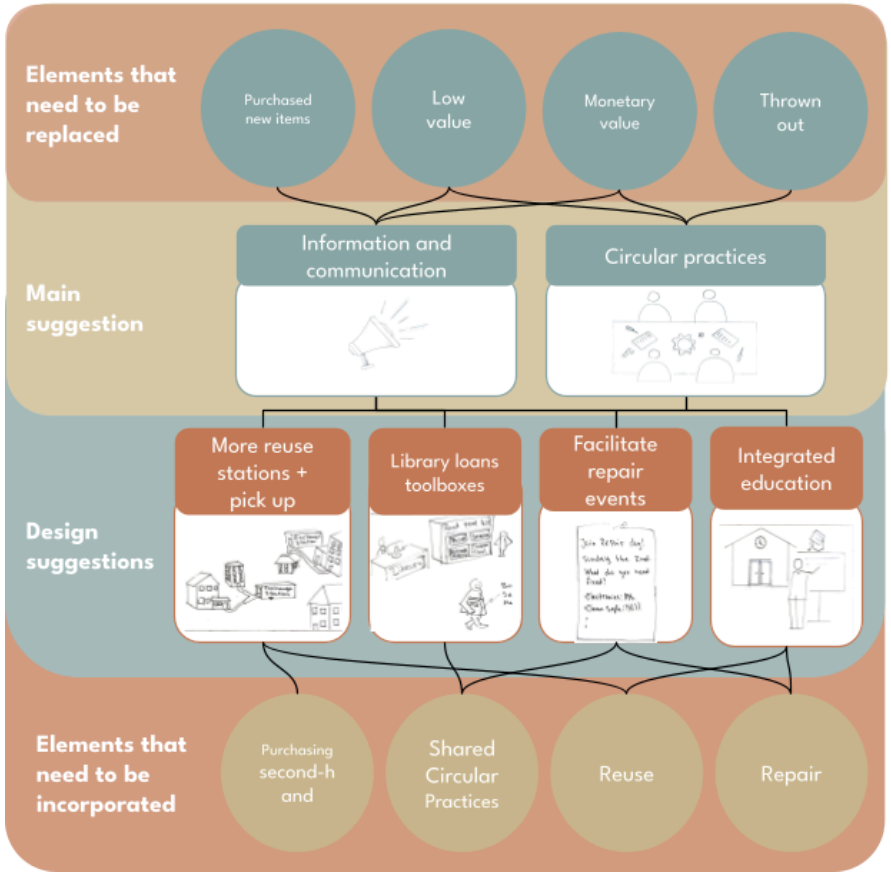


Fig. 8.4. Connection of elements needing replacing.

Figure 8.4 shows a diagram of how the identification of elements of *good and bad behaviour* led to the design suggestions for CM. The elements that should be replaced are presented at the top of the figure and their connection as to the main suggestions on how they can be replaced. The two main suggestions are Information and Communication, and Socially shared circular practice. These are based on the design suggestions. Furthermore, the figure shows how the elements of good behaviour inspired the suggestions.

8.2 Information and Communication Initiatives

CM should put greater effort into informing and communicating clearly to the citizens the already existing circular opportunities in the municipality. Based on the workshop, it was clear that many opportunities already exist. E.g., workshops, pick-up services, exchange stations, DIY and inspirational content, etc. However, the citizens are not aware of these.
The findings from the workshop show that many of the citizens would use such a possibility. Both the interview respondents and the workshop participants clarify that the citizens are willing to dispose of or acquire more sustainably. Based on the analysis we suggest informing and communicating about the following:

1) Recycling Stations

The first part of this recommendation is for CM to reconsider its current communication strategy concerning the recycling stations in Copenhagen. CM has not succeeded in communicating the many roles of the recycling stations. The public understanding of the function of the recycling stations is rather limited to being places for waste disposal. While the big recycling stations offer great opportunities to acquire electronics, textiles, and furniture second-hand and free of charge. Furthermore, they offer workshops and events on reuse and handcraft. These possibilities need to be more visible in the public eye and the recycling stations promoted so that individuals can use them for more than disposal. Therefore, Copenhagen should put a greater effort into communicating the various functions that recycling stations can provide.

2) Nearby Exchange Stations

The second part of this suggestion concerns informing about the nearby exchange stations. It should be better conveyed to the citizens where these stations are located and how to utilise them. This can be done by e.g. mapping the nearby exchange station and distributing the maps or signs around the city, sending information or engaging in dialogue with housing associations on how to dispose of private belongings and on how to create their own private exchange stations.

8.3 Support a New Socially Shared Practice of Circularity

In accordance with the analysis, it has been clarified that items are both disposed and acquired through good and bad consumption behaviour. When looking at the *good consumption behaviour*, these are mostly connected to a wider socially shared practice which is broader than individual performance. Therefore the second suggestion is addressing just that. CM needs to be engaged in developing a new socially shared practice. This can be fostered through four main channels: Create more reuse stations, implement library loans for

equipment, integrate systemic education and facilitate repair events.

1) Create more Reuse Stations:
Copenhagen Municipality can ensure more circular consumption by creating facilities that are nearby and easily accessible. The exchange stations should be placed in public spaces, but the Municipality could further assess if these could be established in libraries, schools, and other social meeting points. This solution is intended for smaller items, like textiles, electronics and small furniture. This is due to the size and inconvenience connected to transporting bigger furniture.

2) Pick-up service
For the larger items that are not suited for the exchange stations, the municipality needs to further develop their current pick-up service. It should be possible for the citizens to upload a picture or report that they intend to dispose of large furniture that is in a condition suited for reuse. This furniture should then be picked up by the CM's pick-up trucks.

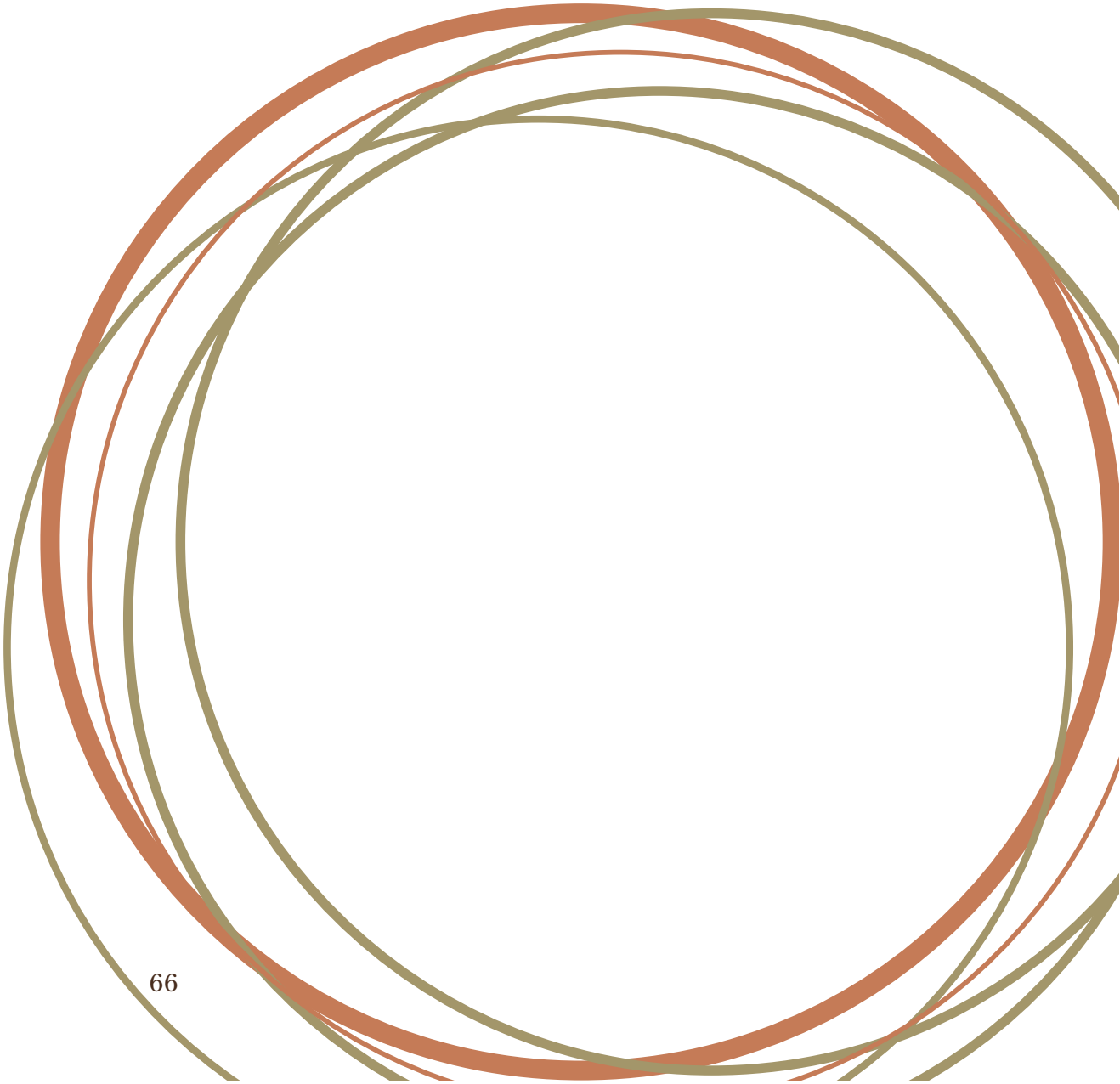
3) Facilitate Repair Events:
Furthermore, the CM should support and advise housing associations on implementing circularity, e.g. how to establish exchange facilities in the associations.

4) Library Loans:
CM should facilitate possibilities to loan different equipment e.g. tools, and power tools in the local libraries.

5) Integrate systemic education:
CM should support the development of a new socially shared circularity practice by implementing circular knowledge in education systems.

These five suggestions are concrete examples of circular incentives that are aligned with the principles of a CE and lead to more circularity in Copenhagen. However, the overall aim of these suggestions is to support a new socially shared practice that not only fosters just CE but also a circular society in CM.

9.0 Discussion



9.1 Methods applied

9.1.1 Empirical Data Collection

To answer the first and second sub-questions about the practice of residential moving, empirical data was collected through a survey and eight interviews.

9.1.1.1 The Credibility of the Respondents' Answers

Following Kuijer's method and suggestions both the interviews and survey had the practice as the unit of inquiry. Where the practice at that time was the practice of residential moving. The survey method diverges the most from Kuijer's method, where she suggests using a workbook as a survey method, where respondents are asked to answer questions about their performance of practice throughout the practice. This results in more valid answers. Whereas, in this case, the survey was answered by people who had been moving within the last two years, resulting in some details being lost and the credibility of the data being questionable.
The workbook was not a used method as moving is not an everyday practice.
When addressing the method of interviews, Kuijer argues answers in an interview will always be affected by a social relation, where some details will often be left out, like details that the respondents found embarrassing, or details the respondents find obvious to everyone, and become tacit between respondent and interviewer (Kuijer, 2014). The respondents' answers in the interviews may be influenced by wanting to portray oneself in a certain way. This might blur the reliability of the data and leave out some consumption details discrepancies with reality.

9.1.1.2 Conducting Interviews and the Survey

In the analysis, the findings from the interviews were compared to the survey findings. The survey was sent out before the first interview was conducted and answers were collected while interviews were conducted. Some of the findings from the interviews were not possible to compare with the survey, because the survey did not focus on the identified phases from the interviews. If the survey had been designed and sent out after the interview, it might have been more useful data that was collected, where in this circumstance a lot of the collected data was not used in the analysis, and the survey was mainly used for getting workshop attendance.
Another way of getting more useful survey data would be to conduct interviews with the respondents after answering the survey and design the interview after the survey findings. We attempted to get interviews with respondents, but none of the respondents were interested in participating in a later interview.

9.1.1.3 Ideation, Workshop, and Feedback

Engaging citizens as active actors in transforming society into a CS instead of perceiving the citizens as passive consumers is something Jaeger-Erben argues to be essential to ensure a circular transition of our society, where Jaeger-Erben suggests

engaging citizens through co-design or co-creation (Jaeger-Erben *et al.*, 2021).
This section will discuss how well co-design has been implemented in the solution creation. To steer the solution ideas in the direction of what CM can do, the workshop started with a presentation of findings and a description of what tools CM has in the toolbox. Ideas were made in advance to test and validate the solution with the participants at the workshop. Done otherwise, the takeaways from the workshop would have had another outcome. Also, another way to steer the direction of ideation would have been not only to invite sustainability experts and citizens engaging as private users but also to have participants from relevant organisations working with circularity in Copenhagen. This could be volunteers from Repair Cafes, employees at recycling stations, volunteer associations like Røde Kors stores, local scout groups and sports groups. The outcomes of the workshop could have been more unique with the inclusion of more types of actors and their solution ideas. Having CM participate in the workshop, would make it possible to better navigate the ideas in a direction suiting the municipality, but could also have bias reducing the innovation height of the ideas. In co-design, it is important to not only focus on the outcome of ideas but also to focus on the shared knowledge expressed at the workshop. It can only be emphasised that CM should in future solutions invite the civil society to participate, to get a valuable understanding of how the citizens participate in practices.

9.2 Discussion of Findings

When suggesting that the Municipality should make disposing and acquiring second-hand easier and more accessible to ensure a greater degree of circularity, it is relevant to discuss what effects such an establishment could foster.

Firstly, the consumer society seeks to meet its increasing demands. Offering circular solutions to meet these demands, will from a circular economic perspective keep resources in the loop for longer and lead to a reduction in demand for virgin resources. Which is undeniably a contribution to more circularity in Copenhagen. The more resources that can be reduced, reused and recycled, the better. At the same time, CE is feeding into the currency consumption society, which is the cause of the very problem and neglects the course of accelerated consumption. Furthermore, CE is inadequate to embrace e.g. rebound effects in its methods. An example of this is that in a welfare state like Denmark, cheap second-hand items help save the citizens money. Money then is spent elsewhere on other potentially new resource-intensive goods or services, thereby, eradicating the purpose of the initiatives. A rebound effect often occurs when e.g. disposal is too easy. The ease of putting clothes in the textile container down in the yard and throwing out the old sofa with next week's bulk waste is more convenient and appealing than going through the effort of selling it through digital platforms.
Furthermore, a whole new research can be done on each of the categories and practices connected to them. For example,

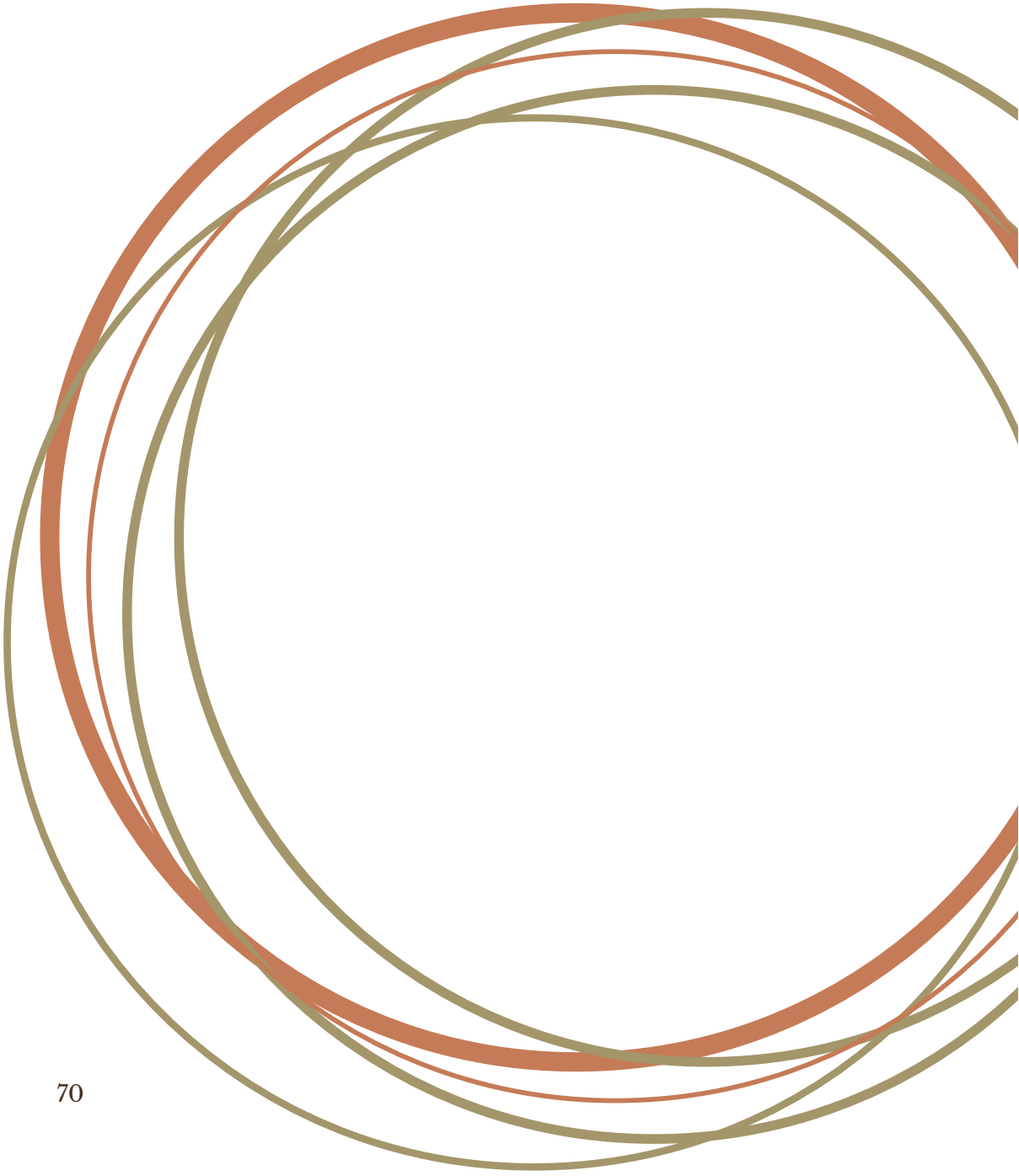
looking at donations of textiles to Røde Kors can be a topic of research in itself. The shared knowledge of donating textiles is based on a humanitarian idea and still gives people the impression that they with good intentions can get rid of their old clothes. Furthermore, believing that their clothes will be sold and the profit will provide food and water for the children in Gaza. It could also be that their clothes get up in landfills polluting countries in the global south, which is no longer a debate but a fact.

Furthermore, it is important to reflect on the amount and the type of respondents that were interviewed. Even though we strove to collect a diverse group of consumers, it is seen that the respondents were all more or less adapting to the same socially shared understandings concerning environmental awareness.

Therefore, the results cannot be used to conclude something about the general population of Copenhagen but can be used as the point of departure for further studies.

Due to a higher diversity of population not studied in this thesis, it is important to emphasise that the design solutions created can result in more rebound effects. This is to say that if these solutions are implemented it is not certain how the rest of the population will adopt and how the solutions will influence the social practice of acquiring and disposing.

10. Conclusion



Departing from the analysis above, the main research question will be answered: "*What does the moving practice look like in relation to resource consumption and how can Copenhagen Municipality foster a greater degree of circularity when moving?"*

Despite the various types of residential moving, it can be concluded that the moving practice is a bundle of practices consisting of different phases of preparing, moving and settling. All respondents engage in these phases.
Firstly, the preparation phase is where all of the respondents utilise the opportunity to re-evaluate their belongings and dispose of the items they do not want to take to their new home. Empirical data shows that re-evaluation of items in the preparation phase led to the highest disposal of furniture. The moving phase, the physical move to a new home, is not shown to be resource-consuming except in one case where a respondent uses the opportunity of having the availability of a rented moving van to collect new furniture.
Whereas the settlement phase is much more resource-consuming and contains two subphases furnishing and replacing. The settling phase is the most resource-intensive concerning acquiring. The respondents are meeting the new needs which occur from practical reasons and desires. In the overall moving process, the consumption shows in several ways.
The practice of acquiring, the practice of keeping and the practice of disposing of are the three practices identified among the respondents.
The practice of disposal is divided into three categories: thrown out, given to a reuse system or given to an acquaintance. The practice of keeping is divided into two categories, either used for furnishing or placed in storage.
The practice of acquiring is divided into categories of purchased new, purchased second-hand and refurbished. The practice of acquiring and practice of disposing have been further analysed as they are practices concerning resource consumption.
For CM to effectively address resource consumption, the elements in these practices e.g. values, meanings and competencies causing the *good and the bad consumption behaviour,* have been analysed. Drivers of consumption in the bundle of practices of moving have been identified as life phase changes that are driving new needs. Based on the empirical data, these needs have been further categorised as essential and non-essential needs. The type of life phase change e.g. moving in with a partner, getting a first full-time job etc. has shown to have a high impact on what kind of needs the respondents have, which highly influences their consumption.
Furthermore, the elements of the two practices in focus, have strong links to the type of disposal or acquiring that happens in a practice.
These elements reflect in both the good and bad consumption behaviour in the practice of disposing are low value, and time pressure which are all linked to throwing out items. Thus, these are the elements that were identified as elements that need to be replaced in the reconfiguration of the practice.
Furthermore, the elements in the practice of acquiring that were identified as elements needing replacement are the elements of *monetary value*. This element has shown to be a very complex element as respondents assume the quality, durability and aesthetic with a higher monetary value. The element of *monetary value* was linked to purchasing new items. Therefore, these elements needed replacement. However, the practice of acquiring elements of good consumption behaviour has also

been observed. Many purchase second-hand items and some even prefer it. In the reconfiguration of the practice, these elements of reuse and refurbishment were integrated.

The design suggestions for reconfigured practices have been formulated:
For CM to ensure a greater degree of circularity, two initiatives have been proposed. CM should put a greater effort into informing and communicating the solutions that already exist e.g., about nearby exchange stations, workshops and events held at the recycling centres, where the citizens can find inspirational content, etc. The analysis showed that the respondents want to dispose and acquire more sustainably, but are not aware of the opportunities that currently exist.
The function of established recycling stations is perceived rather limited as being places for waste disposal. Where we see an opportunity to create a new socially shared perception of the recycling stations as places that offer great opportunities to acquire electronics, textiles, and furniture second-hand.
The second suggestion is about fostering a new socially shared practice of circularity. This can be met through different incentives. It is about addressing the current practice of the linear economy and cultivating a practice of a circular economy and a circular society. This can be done by integrating material and resource understanding in the school system, working strategically on cultivating a greater understanding of how to repair, maintain, upcycle, and make it an attractive and economically feasible solution.
The municipality should focus on expanding the number of exchange stations and their concept. This is to make easily accessible facilities for disposing and acquiring. Almost all of the respondents threw out functional items because of stress and convenience. This is also accounted for when buying new. Making second-hand disposal and acquiring the easiest solutions, will foster more reuse and a greater degree of circularity.
Furthermore, the municipality should utilise its role as a facilitator and organise collaboration with repair e.g. Repair Cafe Denmark to push lifetime extension of products. CM should encourage and advise on circular concepts like housing association repair days, repair stands on flea markets among others.

The problem of consumption that is addressed in this research is much broader and roots deeper than just the moving situations. Going back to the Modern Breakthrough, George Brandes said to put problems under debate, while this is no longer enough. The resource consumption issue calls for actions through many incentives and should by far not be limited to the above-mentioned suggestions. However, to ensure a greater degree of circularity in Copenhagen, it is clear that CM has an essential role in taking initiatives that can foster a social practice that supports more circularity. Changing citizens' consumption behaviour is complex and it is not possible to point to individual efforts that can support a degree of circularity, which is why initiatives should not stand alone!

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