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Exploring the feasibility and potential benefits of organised boat sharing in Oslo

A practice theory analysis of providers and practitioners of two boat sharing companies in Oslo

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ABSTRACT

Recreational boating in the Oslo metropolitan area has never been more popular. However, it has become increasingly evident that space in marinas to store the boats are a scarce resource. In addition, environmental challenges from boating have emerged on the policy agenda in Oslo (e.g., Plan- og bygningsetaten & Bymiljøetaten, 2020).

Organised boat sharing may contribute to more environmentally sustainable usage of boats (e.g., Klimaetaten, 2019). Oslo municipality has developed initiatives to facilitate boat sharing in public marinas. Nevertheless, the diffusion of boat sharing will require users to adopt new practices.

In the present study, I apply a social practice theory framework to study boat sharing in Oslo. I have conducted interviews on the CEOs of two boat sharing providers together with seven individual users of these services. Ethnographic techniques and document analysis supplement the interviews.

This document provides new understandings of materials, competencies and meanings associated with boat sharing practices and how these are co-shaped between providers and practitioners. The study finds that the booking systems, the range of the electric boats, and the fixed price of memberships represent reproduction barriers. The integration of technologies in the services is identified as an opportunity for the reproduction of boat sharing practices.

Moreover, in the document analysis it is identified that legal contracts between the municipality and the boating associations (marinas) is a reproduction barrier. In the contracts, only non-commercial actors are permitted to operate in public marinas. New contracts are waiting for approval from the Vice Mayor of Environment and Transport.

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1 INTRODUCTION

1.1 RESEARCH FIELD AND TOPIC

In the Oslo metropolitan area, organised sharing of motorised recreational boats has emerged as an innovation with expected benefits for society and individual boat users. Boat sharing (BS) is an alternative to the dominant practice of private ownership of boats in Oslo, with one household owning one boat (Småbåtutvalget, 2018). BS offers multiple individuals or households' access to a fleet of boats. Registered members can access boats on a self-access basis, and the companies take care of all responsibilities between trips (e.g., maintenance or protection against theft).

Oslo municipality is supporting BS in public strategies based on expected benefits to society. In the feasibility study Aktiv Vannflate on the future usage of the fjord, BS is listed as a method to realise maritime biological restoration and introduce new users to boating (Plan- og bygningsetaten & Bymiljøetaten, 2020). In another report on recreational boating and climate mitigation, the Department of Climate conclude that sharing of boats might contribute to climate mitigation (Klimaetaten, 2019). Other documents claim that BS could reduce the waiting time to join a marina (approximately 12 years in 2021) and curb the pressure on building new marinas, as BS promises to provide more effective utilisation of boats and marinas (Kvaale, 2021).

BS appears to be a promising alternative to private ownership and a driver for more sustainable boating, yet these assumptions remain untested. Few studies have been conducted on business-to-consumer (B2C) models for BS or in a Norwegian context. BS might successfully scale up – or it might fade away, and it might follow sustainable paths – or it might cause a combination of more boat usage and negative environmental impacts. As the municipality considers supporting BS with policies including public funding (e.g., Berg, 2021), it is crucial to provide more knowledge on these factors to guide political decision making.

In the present thesis, I will study boat sharing as a social practice (e.g., Shove, Pantzar, & Watson, 2012). Social practice theories may provide valuable insights into how boat sharing

could become a popular and widespread practice. I will analyse the elements of boat sharing, how these elements may integrate into stable practices, and how the practice may follow environmentally sustainable pathways.

Pantzar and Shove (2010a) theorise that innovation in practices (e.g., boat sharing practices) occurs through new combinations of pre-existing elements of meaning, material and competencies. For example, a simplified illustration of boat sharing might be the boat and the pier (material elements), socializing (meaning element), and knowledge on how to use the app to make bookings (competence element). Through “circuits of reproduction”, these elements may integrate into stable and routinized practices over time.

The practitioners (users) play a central role in this integrating process, in “generating, sustaining and overthrowing everyday practices” (Shove & Walker, 2010, p.476). In this sense, providers and practitioners could be described as co-entrepreneurs of practices: manufacturers and consumers are together involved in the reproduction process of making and sustaining the links between the elements.

Former studies on social practices provide some "cautionary tales" on how emerging practices' recruitment and reproduction process is vulnerable. For instance, Uteng, Julsrud and George (2019) identify reasons for defection from the car-sharing practice in Oslo: perceived lack of flexibility compared to car ownership or the difficulty of reproducing the practice when relocating to the suburbs. Pantzar and Shove (2010a), in contrast, present what they describe as the successful recruitment and reproduction of Nordic Walking practices (i.e., walking with sticks), which was invented in Finland in the 1990s and soon became popular worldwide. They argue that the Nordic Walking practice benefited from Finish culture's pre-existing meaning elements: the importance of "friluftsliv" (recreation in nature) and a healthy lifestyle. The material element of the walking sticks became integrated with the meanings of "friluftsliv" and a healthy lifestyle, and formal and informal communication channels helped spread competencies on how to perform Nordic Walking.

I have chosen **two companies** for this study: Kruser and Skipperi Norway. These firms have B2C (business-to-consumer) models for boat sharing, operating with so-called "pools[1]" of boats in various marinas. Both firms require annual subscriptions for using the boats. Kruser established its first pool in 2020 and is renting out electric boats only. Skipperi is a Finish company with several years of experience and technology development, and they started operations in Oslo in the spring of 2021.

The *timing* for launching BS services might be ideal, as actors could benefit from synergies from the "sharing economy" across sectors (e.g., Richardson, 2015; Frenken & Schor, 2019; Cheng 2016). These include new platform technologies and digital locks. Moreover, the companies might learn from the business models of Oslo-based car-sharing companies (e.g., Move About, Hyre and Bilkollektivet). On the other hand, we do not know whether BS will ever become profitable. For instance, boat usage is highly weather dependent, with little demand during rainy days or the winter.

1.2 RESEARCH QUESTION:

The present thesis aims to understand possible barriers and opportunities for reproduction of boat sharing practices in the Oslo region. I am particularly interested in how providers and practitioners co-shape the practice of boat sharing, reproduction barriers and opportunities within municipality actors, together with understanding whether – or under what conditions – boat sharing is environmentally sustainable.

The research question of the present thesis is the following: What are barriers and opportunities for the reproduction of environmentally sustainable boat sharing practices in the Oslo metropolitan area?

I have developed the following questions to support the analysis:

A) *What are the practice elements of business-to-consumer (B2C) boat sharing?*

I will analyse what elements (meanings, materials, and competencies) are central in boat sharing practices, based on Pantzar and Shove (2010a) and their practice theory framework.

[1] Pool is a term used by the providers to describe their service. In a pool, several boats are located at the same location (usually in an existing marina next to privately owned boats).

B) *How are providers and practitioners co-shaping the practice of boat sharing?*

I will study boat sharing both from the perspective of providers and practitioners and investigate how they co-shape the practices. Pantzar and Shove (2010a) suggest that practitioners are influential entrepreneurs as they shape and circulate the elements of practices.

C) *What role might the municipality of Oslo play in the reproduction of boat sharing practices?*

The municipality is the owner of most of Oslo's marinas. In September 2020, the city council passed a resolution stating that they will facilitate boat sharing in "new and existing marinas" (Oslo Kommune, Bystyret, 2020). I will analyse this resolution and the process to implement the resolution to identify barriers and opportunities for Oslo municipality in the reproduction of boat sharing practices.

D) *Under what conditions is boat sharing environmentally sustainable?*

For the municipality, environmental sustainability concerns are a central argument for supporting boat sharing. I will discuss whether boat sharing is sustainable and under what conditions sustainable boat sharing practices might be reproduced.

1.3 GOAL AND RELEVANCE

I have identified one main objective and two secondary objectives of the present thesis. The main purpose is to guide Oslo policymakers on boat sharing. The secondary objectives are to serve as an exploratory study into boat sharing for academia. Furthermore, I think providers (and those considering entering the market for boat sharing) might be interested in the analysis, as I discuss the two companies of Kruser and Skipperi.

In a 2020 document, Bymiljøetaten stated the need for a feasibility study on boat sharing in Oslo to understand how the municipality could facilitate this emerging practice (Kvifte, 2020). The municipality called for a study due to the knowledge gaps on boat sharing. Nevertheless, this inquiry has not been realised (Michelsen, K. W., personal communication, 2021). Furthermore, boat sharing has been proposed in several reports in Oslo. For instance,

in Aktiv Vannflate and a report on climate gas emissions from boating (Plan- og bygningsetaten & Bymiljøetaten, 2020; Klimaetaten, 2019).

The present study aims to identify reproduction barriers and opportunities for environmentally sustainable boat sharing practices. The geographical scope is Oslo, Bærum and Asker. Policy recommendations are presented in the discussions chapter.

A less prominent but still important relevance of the thesis is its exploratory character. There are research gaps on boat sharing, as few or no studies have been conducted on boat sharing in Norway. The present thesis lay the foundation for future research projects on this theme: I could help map the practice of boat sharing, write a definition of what boat sharing is, and present suggestions for future research

Finally, the present thesis may guide commercial actors. My impression from studying the political discourse in Oslo is that the municipality will only facilitate boat sharing but not participate as an actor. Therefore, Oslo's boat sharing strategy depends on the success of companies (or non-commercial actors). The innovation process involves risks, and this thesis might provide some guidance on how to increase the chances of commercial success.

1.4 DELIMITATION

Resources and time are restricting the format of the present master's thesis. Subsequently, I have made the following delimitation: First, Oslo, Bærum and Asker represent this thesis's geographical scope. In practice, Oslo municipality is of my main interest. Yet, I have decided to include other municipalities as Bærum and Asker are located within a short distance from central Oslo. Second, there exist different kinds of boat sharing services, including peer-to-peer (P2P) services, but only business-to-consumer (B2C) services will be studied in the present thesis. The two B2C services of Kruser and Skipperi represent the context of this study. Third, I have restricted the time frame of interest to the years 2019-2021. Kruser was founded in 2019 and launched its service in 2020, while 2021 was the pilot season for Skipperi Norway. Fourth, although there is a heterogeneity of recreational boats (e.g., sailboats, kayaks, motorised boats), I will focus on the vessels operated by Kruser and Skipperi only. These boats are all motorised recreational boats, between 6-8 meters in length.

2 LITERATURE

2.1 TRANSITION STUDIES

The present thesis is positioned within the research area of *Transition Studies*, a subfield of Innovation Studies. I will base the thesis on literature within the field of Transition Studies only.

Markard, Raven and Truffer (2012) have developed the following definition of the field of sustainability transitions: *'Research on "sustainability transitions" comprises all scientific articles that are concerned with the analysis of the institutional, organisational, technical, social, and political aspects of far-reaching changes in existing socio-technical systems (e.g., transportation and energy supply), which are related to more sustainable or environmentally friendly modes of production and consumption.' (p. 959).*

The starting point of the analysis in Transition Studies is contemporary grand challenges. Scholars argue that current socio-technical systems (e.g., fossil energy supply or the financial system) face solid path dependencies and lock-in effects. The dominant technologies and related user practices are tangled together with, for instance, regulations, value chains and political structures. A consequence is that socio-technical systems are "sticky" to change and that most innovations are of an incremental rather than radical nature (Markard, Raven & Truffer, 2012).

Sustainability transitions is a normative research area, with an explicit ambition of understanding and promoting the transitions within complex socio-technical systems. There are several theoretical approaches applied within transitions studies to map the complexities of transitions. The most common frameworks include the Multilevel Perspective (MLP), strategic niche management, and technological innovation (see, for instance, Geels, 2002; and Jacobsson & Johnson, 2000).

I am positioning the present thesis within themes of "environmental sustainability". In transition studies, the term sustainability is sometimes used to describe economic or societal challenges next to environmental ones (e.g., Cofala et al., 2011; Gleick, 2003; Gil and

Beckman, 2009). I will, however, only study environmental sustainability: for instance, how to conserve or restore maritime nature, how to reduce the footprint in production and usage of boats, and how to mitigate climate gas emissions from boating practices.

2.2 THE SHARING ECONOMY AND SUSTAINABILITY

The sharing economy concept received early enthusiasm as a solution to both environmental and social sustainability challenges. People thought that sharing under-utilised resources would have positive environmental impacts, as the demand for scarce resources would decrease. Car sharing was, for instance, found to have positive environmental effects and to reduce practitioners usage of vehicles (Ferrero et al. 2018; Martin and Shaheen 2011). Sharing was assumed to contribute to authentic encounters, provide more affordable prices on products and services, and contribute to the employment of locals (Cheng, 2016; Frenken & Schor, 2019). The above examples illustrate how the sharing economy could be associated with social (e.g., authentic encounters and employment for locals) and environmental sustainability (e.g., more effective usage of underutilised resources).

Over time the tide has changed: the one-sided enthusiasm is no longer present. Services are claimed to be a threat to traditional businesses or avoid regulations and fees (e.g., Uber). Self-employed on platforms are in vulnerable positions. They do not receive a full-time employee's benefits (e.g., health benefits or holiday money), whilst little risk is on platform providers.

For me as a researcher, I think the right question to ask is *under what conditions* sharing is environmentally sustainable. There is a broad heterogeneity of sharing services. The assumption that the “sharing economy” as a concept would save the world may have been naïve. However, it is possible that sharing services could provide positive environmental impacts based on the underlying conditions.

2.2.1 BUSINESS TO CONSUMER (B2C) MODELS

There is a vast spectre of sharing economy organisational models, for instance, peer-to-peer (P2P) and business-to-consumer (B2C). P2P is the most common model, according to Richardson (2015), and is characterised by a platform that facilitates transactions between individuals. This model is, importantly, reducing the transaction costs for the individuals, as those demanding and supplying goods or services more easily could match. B2C models, in contrast, do provide not only the platforms but also the supply of goods or services.

P2P boat sharing models are provided by, for instance, Seashare, Finn. Boat Flex and Skipperi. Skipperi does in fact have a P2P model for rentals of privately owned boats next to the B2C subscription model for their fleet owned by Skipperi. The infrastructures provided by these P2P providers are a platform and systems for verifying the users and their trustworthiness (e.g., rating systems) at a minimum.

Puschmann and Alt (2016) claim that missing trust between individuals causes ‘the lender’s concern about damage of a shared item’ (p 94). For instance, individuals might be sceptical about enlisting their boats on P2P platforms as they fear their boats will suffer from damage. The consequence might be that demand for renting boats on P2P platforms is higher than supply. Weber (2014) explains that the lender's concern can be reduced if an intermediary provides services such as insurance. However, the supply of boats through B2C services is another strategy to reduce the lender's concern.

2.2.2 DEFINITION OF SHARING ECONOMY

For analytical purposes, a definition of sharing services should be clarified. In the public discourse, "sharing economy" describes a broad set of phenomena across many sectors. In the academic discourse, there have been attempts to define and clarify which activities should be included or excluded from the definition (e.g., Belk, 2014; Richardson, 2015). A broad set of actors self-proclaim their actions as “sharing economy”, and the meaning of the term itself might inflate. A clear definition could help the academic debate on the sharing economy.

For instance, Belk (2014) claims that activities that involve a financial remuneration are – by definition - "renting" and not "sharing". Others have claimed that P2P sharing but not B2C activities are part of the "sharing economy" (Schor, Walker, Lee, & Parigi, 2015). These elements may resemble some of the early enthusiasm for sharing as an authentic and community-building activity, and the definition would in fact exclude many of the self-proclaimed sharing providers.

Richardson (2015) specifies a broad definition of the sharing economy: “The sharing economy refers to forms of exchange facilitated through online platforms, encompassing a diversity of for-profit and non-profit activities that all broadly aim to open access to under-utilised resources through what is termed ‘sharing’” (p. 121). This definition identifies online platforms and the open access to under-utilised resources as the critical elements of the sharing economy, moving away from the debates on B2C-models being within the scope of the sharing economy.

Platforms and other technologies may have the potential to drive a more effective usage of under-utilised resources. Boat sharing likely falls within Richardson's (2015) definition, as boats are used on an average 15 times a year in Norway (Kongelig norsk båtforbund, 2018). In sections 4.1 and 4.2, I will dive into the literature on the underutilisation of boats and environmental impacts.

2.2.3 DIGITAL PLATFORMS AND “STRANGER SHARING”

In Richardson’s (2015) definition of sharing, online platforms were emphasised as a key element separating sharing from renting.

The sharing economy is not a recent invention, yet digital platforms are facilitating sharing among strangers. In earlier times, sharing was an activity primarily taking place among people that could be trusted, such as friends and family. Sharing among strangers was seen as risky. New technologies, in particular digital platforms, have made stranger sharing appear less risky.

Digital platforms make stranger sharing more appealing, with the use of systems for ratings and reputation. Next to building trust (or at a minimum replacing the need for trust with technology), the platforms reduce the transaction costs for both providers and practitioners of a service. That is, they make the match-making process much easier for all parties involved (Frenken & Schor, 2019).

In sum, sharing economy is a broad term, and activities that fall under the broad umbrella of the "sharing economy" sometimes produce negative effects on sustainability. It is not a given that boat sharing will have positive environmental or social impacts, and it is crucial to question under what conditions this could be the case. Social practice theories might provide insights into the reproduction of boat sharing practices, and under what conditions the practice may follow sustainable pathways.

2.3 SOCIAL PRACTICE THEORY

Köhler and colleagues (2019) claim that studies on consumption and everyday life are understudied topics in transitions studies. They find this paradoxical, as the study of transitions across the entire production-consumption chain 'is a funding assumption in the literature on sustainability transitions' (p. 13). Practice theories are claimed to study to smallest unit of analysis; the practices that constitute everyday life. Consequently, by including practice theories in the present study, we might get an understanding of the reproduction of boat sharing practices. This could provide unique insights into the role of the practitioners (that is, the users) in the innovation process and how they are negotiating and *co-shaping* the elements of practice.

Social practice theories (SPT) are not united in a single approach, but these theories have in common that they focus on routinised everyday practices that constitute society. Practices are for instance skiing, walking, cell-phoning, showering, or car-driving – and in the present thesis, *boat sharing* is the practice in question (Köhler et al., 2019).

In the present thesis, I will focus on the literature on practice theories and innovation. Pantzar and Shove (2010a) and their three-element framework for understanding the building blocks of practices together with the process of formation, reproduction and dissolution of practices will be central, and I will introduce their model in the “conceptual framework” in chapter 2.

This theory builds upon literature by, among others, Reckwitz (2002). He writes that a 'practice – a way of cooking, of consuming, of working, of investigating, of taking care of oneself or of others, etc. – forms so to speak a "block" whose existence necessarily depends on the existence and specific interconnectedness of these elements, and which cannot be reduced to any one of these single elements' (p. 250). This leads the way for an analytical investigation into the building blocks of practice, with the possible identification of 'windows of opportunities to change the direction of practices (e.g., along a more sustainable path) or to facilitate the recruitment to – and reproduction of – a practice.

SPT represent an alternative or a supplement to behavioural approaches as drivers of change in consumption. Behavioural approaches are directed towards the individual whilst SPT consider practices as having a collective nature. Behavioural approaches in Economics or Psychology include, for instance, attempts of educating individuals (i.e., influencing attitudes and knowledge as a driver of behavioural change) or modifying economic costs through taxes or benefits to drive changes in consumer behaviour. For scholars in SPT, it is claimed that behavioural approaches are not sufficiently effective and efficient in bringing about transformative change.

A key assumption for Pantzar and Shove (2010a) is that users play 'an active and ongoing participation in innovation' (p. 448) and claim that all the practitioners could be considered entrepreneurs. Those who perform a practice are actively integrating the elements through circuits of reproduction, sustaining, and transforming the practice in question.

2.4 CONCEPTUAL FRAMEWORK

The present chapter seeks to explore how innovation in practices (such as boating, urban bicycling and car-sharing, etc.) take place. I will base this analysis on Pantzar and Shove (2010a) and their proposed three-elements model of practices.

I will answer the following questions: What are the constituting elements of a practice? How do practices emerge, exist, and cease to exist? And finally, how practices and the links between the elements in practice generated, renewed, and reproduced.

There are some key takeaways that I will bring forward to the analysis:

- According to the three-element model by Pantzar and Shove (2010a), practice consists of the elements of meaning (or image), material, and competence (or skill).
- It is theorised by Shove, Pantzar & Watson (2012) that practices emerge from elements existing prior to the birth of a new practice. They categorise these non-integrated elements as *proto practices*. If links develop between elements, sound practices may emerge.
- A practice is dependent on the successful reproduction of elements and the recruitment of new practitioners to persist (Watson, 2012). The terminology "circuits of reproduction" is used to describe how practitioners sustain and change the elements of practice over time. If "circuits of reproduction" are unsuccessful in sustaining the links between the elements, practitioners may defect from a practice (e.g., Uetng, Cyriac and Julsrud, 2019; Shove & Walker, 2010)
- Providers and practitioners may be co-entrepreneurs of a practice. Pantzar and Shove (2010a) state that although producers are tightly involved in the circulation and promotion of the associations between elements, the providers decide whether they will accept or reject the proposed associations.

I will present these critical aspects of innovations in practices below, starting with Pantzar and Shove's (2010a) three-element model. This framework will guide the analysis. It could be a helpful framework to understand the reproduction process in boat sharing practices, and to identify opportunities and barriers for the integration of elements.

2.4.1 THE THREE-ELEMENT MODEL

Reckwitz (2002) write that social practices arise from the interconnectedness of elements of 'bodily knowledge, forms of mental activities, "things and their use' (p. 250). These elements form a tightly integrated "block" of elements.

Pantzar and Shove (2010a) describe Reckwitz' comment on the interconnectedness of elements as crucial for the understanding of innovation in practices: This opens up for a dynamic understanding 'of the formation, reproduction, and dissolution of practice, and of cumulative, mutually influential, but emergent and unplanned relations between practices',

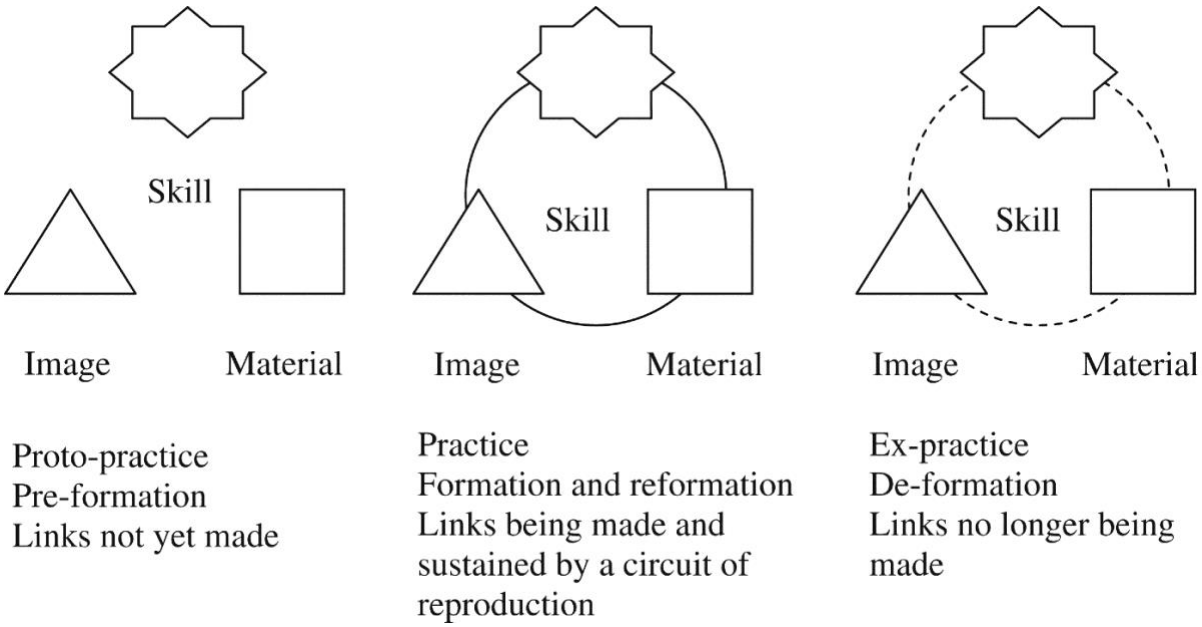
they suggest (p. 450). Element of a social practice may have histories on their own, prior to the integration into a practice or after its break-up.

The three-element model is a framework on how social practices are formed, stabilised, or disappear. This is a dynamic interpretation of social practices, as much literature is concerning the stabilisation and routinisation of practices (e.g., Schatzki, Knorr-Cetina, and von Savigny 2001; Warde 2005). Crucial questions for innovation in practices are, according to this model, how links are made, sustained or cease to exist between the elements.

Pantzar and Shove (2010a) formulate the three elements of practice being meaning (or image), material, and competence (or skill/know-how). I could illustrate this with an example of the practice of boat ownership in Norway: "freedom", "nature" and "health" are meanings of boating (Kongelig norsk båtforbund, 2018); competences include the formal test "Båtførerprøven" and informal norms on the sea – but also skills into the maintenance of a boat or the safeguarding of the boat in a storm; and material elements are for instance the boat, the marina, and the weather. The present example is my subjective application of this theory, and more elements could be included. In section 6.1 in the results section, I elaborate on this model for boat sharing practices.

Pantzar and Shove (2010a) theorise that these elements (material, meaning and competence) exist in three stages: as proto practices (before the integration of links between the elements), practices, or ex-practices. Pantzar and Shove write that social practices 'represent novel combinations of existing elements (and) come into existence, persist and disappear when connections between foundational elements like those of material, image and skill are made, sustained or broken' (p. 450). Proto practices describe how the elements have a history before the emergence of a stable practice, yet they are not yet integrated. It is not a given that they will ever successfully be integrated.

FIGURE 1: *Proto-practice, Practice and Ex-practice (Pantzar & Shove, 2010a). In section 5.1 in the results chapter, I have exemplified what this model might look like for the proto practice of boat sharing.*



The final type - Ex-practices - will not be discussed in this thesis, but in short, it means that the elements of a practice disintegrate and that the practice ceases to exist. There are various reasons why this may happen. For instance, Larsen (2017) describes how cycling practices were standard in many Western cities in the first half of the 20th century, however, from the mid-1900s, the car replaced the bicycle as the dominant means of transportation.

2.4.2 CIRCUITS OF REPRODUCTION

Circuits of reproduction describe how practices are sustained or change (Shove & Walker, 2010).

Social practices may be relatively stable as they are performed in a routinised manner. However, Pantzar and Shove (2010a) make the warning against seeing practices as stable as it ‘would reduce practices to being the sum of static phenomena' (p. 450). Such an interpretation would make us blind for the active reproduction of practices performed by the practitioners.

Pantzar and Shove suggest that practices are sustained through “circuits of reproduction” and that social practices are in constant development. New links between elements are made, and

others are broken. These processes might lead to the establishment of relatively stable practices, but also to the decay of others (Shove & Walker, 2010).

An example of a highly successful “circuit of reproduction” may be bicycling practices in Copenhagen. Larsen (2017) claim that policy makers tend to be overoptimistic about the effects cycle lanes and other material elements will have on the popularity of bicycling practices and underestimate the role of social practices. For instance, Larsen observes that the meanings people in other places associate with cars, such as freedom, speed, and flexibility, is associated with bicycling in Copenhagen. The bicycle practice is bounded together with other practices, such as secure bicycle parking and showers at work. Additionally, he observes that cycling has become a normalised activity: the clothing is relaxed, there is no expectation of wearing a helmet, old bikes are more regular than speed bikes. This stands in contrast to other cities where cycling is considered a risky sports activity, such as London and New York (Larsen, 2017).

Pantzar and Shove (2010b) write that social practices may be reproduced in bundles. For instance, they may share a common dependency on a skill or a technology, and thus co-evolve. An example may be digital platform technologies, being a driver for a heterogeneity of sharing services across sectors (Frenken & Schor, 2019; Richardson, 2015).

Nevertheless, former studies on social practices provide some "cautionary tales" on how emerging practices' reproduction process is vulnerable. For instance, Uteng, Julsrud and George (2019) identify reasons for defection from the car-sharing practice in Oslo: perceived lack of flexibility compared to car ownership or the difficulty of reproducing the practice when relocating to the suburbs. Car sharing is a young practice that must be maintained through "circuits of reproduction" to persist. In cases where the circuits of reproduction are insufficient, the linkages between the constituent elements of practice deteriorate, and the practitioner defects from the new practice before it is fully established.

3 THE RESEARCH BACKGROUND

This section will present a definition of recreational boating and some contextualisation of recreational boating in Norway. Then I will show some of the ongoing academic and political debates on challenges with boating today and how boat sharing is assumed to be a solution for some of these challenges. Finally, I will contextualise this study within the two Oslo-based companies of Kruser and Skipperi.

3.1 DEFINITION OF RECREATIONAL BOAT

The Norwegian Maritime Authority defines a *recreational craft* as any vessel under 24 meters for non-commercial use. The definition includes a heterogeneity of boat types, including kayaks and canoes, water scooters and sailing and motor vessels (Sjøfartsdirektoratet, n.d.). In Norway, there are almost 1 million boats covered by this definition, according to Båtlivsundersøkelsen 2018 (Kongelig norsk båtforbund, 2018).

For clarity: In the present thesis, I will focus on the boats that are part of Kruser and Skipperi's membership in the 2021 season:

- Green Waves 601 (Kruser)
- RAND Mana 23 (Kruser)
- Yamarin Cross 57 BR (Skipperi)
- Yamarin Cross 62 BR (Skipperi)
- Yamarin 63 DC (Skipperi)

Next season additional boat models will be included in the membership, and the members could upgrade their membership to access all models.

All these boats are about 5-6 meters long motorised boats without a sleeping area. The segment of motorised boats without sleeping area is the statistically most widespread boat segment in Norway, with an estimated 400,000 boats in 2017.

In the literature, different terms are used to describe the same: Recreational boats, recreational craft, and leisure boats are used interchangeably. In the present thesis, I will keep it simple and use the word *boat*. When I use the words *boat* or *vessel*, I am referring to "motorised recreational boats without sleeping area" and usually to the boat models that were

offered by Kruser and Skipperi in 2021. And when I refer to the practices or activities related to boats, I may use the term *boating*.

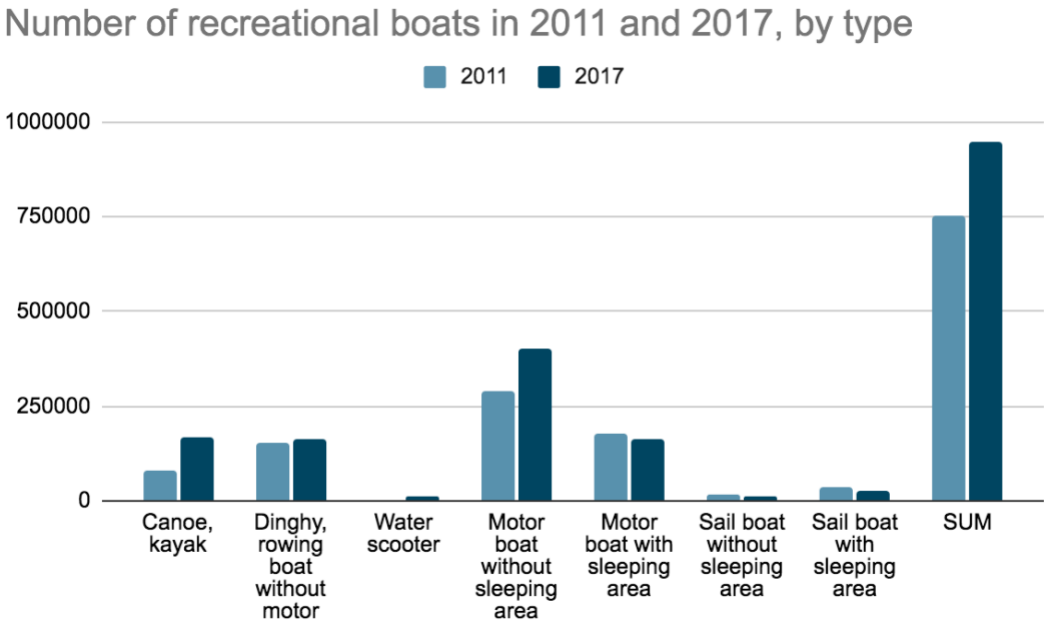
3.2 BOATING PRACTICES IN NORWAY

A considerable fraction of the Norwegian population takes part in the practice of boating during the summer season. According to Båtlivsundersøkelsen 2018, about one out of three Norwegian households own a boat. More than half of all the respondents reported being onboard a boat during the 2017 season (Kongelig norsk båtforbund, 2018).

The popularity of boating in Norway seems to be unique on a global scale. It is challenging to compare boat ownership and usage across regions as different methodologies and definitions are applied. Yet, our best estimates indicate that Norway, together with Sweden and Finland, are the countries with the highest rate of boat ownership per capita (e.g., Karlstad, 2020; Kongelig norsk båtforbund, 2018).

Boating in Norway is an increasingly popular practice. Figure 2 (below) illustrates that there was a significant increase in privately owned boats in Norway between 2011 and 2017. Motorboats without a sleeping area (our focus), together with canoes and kayaks, experienced an increase. Båtlivsundersøkelsen is providing estimates on the number of boats in Norway based on a survey and tends to be considered the most reliable study of boating in Norway (Kongelig norsk båtforbund, 2018). There are reports of record sales of boats in 2020 and 2021, during covid-19 when there were restrictions on travelling abroad (Karlstad, 2020). However, I have not been able to obtain any updated estimates on the number of boats in Norway, but I assume that the numbers have increased compared to 2017.

Figure 2: *Number of recreational boats in Norway in 2011 (light blue) and 2017 (dark blue). In 2017 there were 948.000 boats compared to 750.000 in 2011. The categories of "motorboat without sleeping area" and "canoe, kayaks" experienced the sharpest increase, according to these estimates (*Kongelig norsk båtforbund, *2018).*



3.2.1 MEANINGS ASSOCIATED WITH BOATING

Skuland, Klepp and Bjerck (2010) try to map the emergence of the practice of recreational boating in Norway. They theorise that “friluftsliv”, the Nordic philosophy of spending time in the nature, is a meaning that has co-developed with boating practices. According to this philosophy, spending leisure time outdoors – in the forest, the mountains or at the sea – is healthy and "the right thing to do" (Klepp, 1998). The simple lifestyle in the outdoors was an ideal of the healthy citizen and a symbol of Norwegian identity (Witoszek, 1998).

Exploring more recent data on the meaning of boating, table 1 (below) shows which values and activities the respondents of Båtlivsundersøkelsen rated as most important (Kongelig norsk båtforbund, 2018). The respondent was instructed to check off more than one alternative. These responses indicate that practitioners of boating rate values and experiences related to nature and "friluftsliv" together with "freedom" and "socialising" as key meanings of boating. I think this supports the claim made by Skuland, Klepp and Bjerck (2010) that boating is closely associated with “friluftsliv”, but it shows that other meanings such as “freedom” might be equally important.

Table 1: *adopted from Båtlivsundersøkelsen 2018, on the values/activities people associate with boat usage*

Top 2 score	2011 survey	2017 survey
Experience nature	87.7%	84.6%
Freedom	80.5%	74.3%
Peace and tranquillity	75.2%	73.5%
Socialising	76.7%	70.7%
“Friluftsliv”	78.7%	70.5%
Fishing	n.d.	49.3%
Visit unique locations	49.4%	48.5%
Speed and excitement	n.d.	23.4%

3.2.2 THE CONTEXT OF OSLO

In Oslo, most marinas are owned by the municipality but operated by boating association. In each marina, there might be several boating associations. There are 20 boating associations in total, operating on contracts from the Oslo municipality. Småbåtutvalget is a committee organising the relationship between marinas and the municipality. This committee is responsible for a fund (Småbåtfondet), and these funds are to be allocated for projects in the marinas (Oslo Kommune, n.d.; Småbåtutvalget, 2018).

About 22 percent of households in Oslo and Akershus have access to boats (Kongelig norsk båtforbund, 2018). There are indications that the interest in boating in Oslo is high. For instance, there were reports in the summer of 2021 that record numbers of Oslo citizens were on waiting lists to join boating associations. The expected waiting time to get a berth in a marina for a privately owned boat is about 12 years (Kvaale, 2021).

In the present thesis I am not bound to Oslo municipality as a geographical region, but also neighbouring municipalities. Marinas in Bærum and Asker could be reached by public transport within 10-20 minutes from Oslo city centre. Therefore, it is not given that citizens

of Oslo are restricting themselves to the marinas in Oslo. What is more, several of the locations of Kruser and Skipperi are in Bærum and Asker.

3.3 SUSTAINABILITY CHALLENGES FROM BOATING

To my knowledge, little attention was given to environmental challenges from boating until recently. For instance, in 2018, recreational boats were included in emission statistics for Norwegian municipalities for the first time (Miljødirektoratet, 2020). In the political debate in Oslo, boat sharing has been proposed to represent part of the solution to environmental challenges (e.g., Plan- of bygningsetaten & Bymiljøetaten, 2020; Kvifte, 2020).

3.3.1 CLIMATE GAS EMISSIONS:

In 2018, the Norwegian Environment Agency (Miljødirektoratet) estimated the climate gas emissions from recreational boating in Norwegian municipalities for the first time. They estimated the emissions to be more than 500,000 tons of CO2 equivalents (Miljødirektoratet, 2020; Statistisk Sentralbyrå, 2021). In late 2020, a better methodology for estimating emissions were implemented based on data from Båtlivsundersøkelsen (Kongelig norsk båtforbund, 2018). The improved estimates were lowered to 278,000 tons of CO2 equivalents annually. Frank Melum, the statistician responsible for these estimates, claims that this is "not an insignificant number of emissions" (Melum, 2021). This represents about 0.6 percentage of all climate gas emissions in Norway (Statistisk Sentralbyrå, 2021).

A 2019 report from Oslo City Climate Agency (Klimaetaten) aimed to estimate the carbon footprint from boating within Oslo municipality (Klimaetaten, 2019). Two different methodologies gave varying estimates: 3,500 tonsCO2 equivalents when calculations were based on how much petrol and diesel was sold in local marinas, and 22,000 tons of CO2 equivalents based on a second methodology. The second methodology was based on data from Båtlivsundersøkelsen on how people use the boat (Kongelig norsk båtforbund, 2018). Both the newly adapted methods used by the Norwegian Environment Agency on a national level and the second methodology used by Oslo City Climate Agency on a local level are basing their estimates on Båtlivsundersøkelsen. Yet, I do not know whether these methodologies are identical.

The climate gas emissions from a boat are dependent on the size of the engine, its speed, and its displacement of water. Boats have, on average, a lower energy efficiency than a car. For boats of a certain size and speed, the energy consumption could be 10-15 times higher than a car on the same speed, and thus emit significant climate gas emissions (Melum, 2021; Nissen-Lie, 2021).

Climate gas emissions from boating are relevant as Oslo has implemented a climate strategy of '95% reduction in Oslo's CO2 emissions by 2030, compared with 2009'. Oslo's target is ambitious and would require significant carbon mitigation across sectors. If 22,000 tons of CO2 equivalents are the estimates closest to reality, about 1.7 percentage of all carbon emissions in Oslo in 2017 were from boating (Solli & Andresen, 2020; Miljødirektoratet, 2020). For a city with high ambitions, boating is indeed included in the climate strategies: it is proposed to support the construction of charging infrastructure for zero-emission boats, to support the purchases of such vessels, to support start-ups developing zero-emission technology - and to support the establishment of "boat sharing collectives" for electric boats.

Sharing electric boats is here considered a vital policy for several reasons: First, it is argued that it could be influential in introducing the niche technology of electric boats for more people and hopefully increase people's willingness to purchase those boats. Second, it is assumed that introducing electric boats to more people could reduce boat owners' scepticism towards those boats. And third, and most importantly, according to the report, it is believed that fewer people will need to own a boat with the presence of boat sharing services.

3.3.2 OTHER EMISSIONS:

Boats are a significant source of pollution of toxic antifouling and microplastics, with the potential of harming marine wildlife, according to a COWI report developed for the Norwegian government (Lutro & Vatland, 2018). Microplastics from the hull and painting together with toxic antifouling are leaking out in Norwegian waters. According to the report, much of the emissions - particularly the microplastics - are emitted while the boats are on land for service and maintenance. It is stated that there is no proper drainage system in most marinas for the collection of polluted water. This causes estimated pollution of 16 kg of copper and 18 kg of zinc from toxic antifouling in the average marina.

In a Swedish report from Havsmiljöinstitutet, the effects of the construction of new marinas and piers are at the centre of attention (Moksnes, et al., 2019). The central argument is that the marinas are harming essential habitats for marine life and damaging wildlife at the marina's location and in surrounding areas. It is claimed that much of the marinas and piers in Sweden are located in shallow areas (<3 meters) that are protected from waves, with clay and sand bottom - areas that tend to hold valuable underwater beds. These sunken beds consist of, for instance, eelgrass and are functional areas for fish (Løken, 2013). Moreover, dredging activities - the removal of sediments and debris from the bottom of harbours - could cause the spread of sediments and pollutants over huge areas, negatively affecting fish stocks and other maritime life. The report proposes to curb the need for new marinas, for instance, by storing boats that are not in use on land and more effective usage of vessels with the establishment of boat pools!

3.3.3 BOAT SHARING A PROPOSED SOLUTION

A key document in the political discourse on boat sharing in Oslo, Aktiv Vannflate, was published in early 2020 (Plan- og bygningsetaten & Bymiljøetaten, 2020). The mandate of this report is to investigate how to introduce the sea for more people, which is an explicit goal of the city council. Among the measures in the report are establishing new public beaches in the central areas of Oslo and sharing kayaks and boats. Boat sharing is not mentioned exclusively concerning the objective of introducing new people to the sea and boating. For instance, boat sharing and electric boats are measures for "restoring marine life in Frognerkilen". Also, it is proposed to ensure more effective usage of the shore and thus more space for other activities such as recreation. Two locations are presented for boat sharing: the east side of Sørenga and Frognerkilen.

Months after the presentation of Aktiv Vannflate, on August 23 2020, the city council passed the following resolution translated from Norwegian: “The city council (Bystyret) asks the city government (Byrådet) to evaluate how to facilitate for the transition to zero-emission solutions in small boats, as well as the establishment of boat sharing schemes, in new and existing marinas in Oslo” (Oslo Kommune, Bystyret, 2020). This implies that the politicians asked the Department of Environment and Transport (Bymiljøetaten) to consider how to facilitate boat sharing and zero-emission boating.

In a letter in 2020, the Department of Environment and Transport wrote that “In general, the Urban Environment Agency believes that a broader study of boat sharing schemes and the possibilities in that connection should be carried out. In this way, there would be a basis for facilitating this emerging market, and it had been clarified what role the municipality should play in the facilitation” (Kvifte, 2020). I have contacted this agency to map the progress, and no such study has been conducted (Michelsen, K. W., personal communication, 2021).

To summarise, boat sharing is mentioned in several policy documents and reports. Boat sharing is proposed to serve different objectives: climate mitigation, more effective usage of public areas, the introduction of electric boats to the market, and reduction of maritime pollution - but also to introduce more people to boating, potentially working against the other objectives. Relevant questions to ask are whether all these objectives are compatible or conflicting and under what conditions the municipality could facilitate boat sharing in practice.

3.4 THE PROVIDERS: KRUSER AND SKIPPERI

I have selected Kruser and Skipperi as the companies of interest in my study. The methods section (section 4.3) explains why I picked these two B2C providers in the study.

Both Kruser and Skipperi have their boats in "pools". With the word pools, they indicate that several vessels are located together in each marina.

All the pools are in existing marinas: In Oslo municipality, Kruser has pools at Aker Brygge and Skipperi at Killingen, and both enterprises have pools at Sjølyst; In Bærum, both enterprises have pools at Oksenøya, and Skipperi has a pool at Solvik; and in Asker, Kruser has pools at Leangbukten and Vollen whilst Skipperi has a pool at Asker Marina.

By the end of the 2021 season (September 2021), Kruser and Skipperi had five pools' each in the Oslo region. To date, all pools are in Oslo (from Aker Brygge and westwards), Bærum and Asker - together with one Kruser pool in Bergen. In the 2021 season, Kruser had 17 boats in their pools in the Oslo area, and Skipperi had 20. In 2022, the providers report that they

aspire to scale up their service, with more pools and more boats in each pool (Kruser, 2021b; Skipperi Norge, 2021b).

Map over locations: I have plotted all Kruser and Skipperi's pools in the Oslo Region in the map below. The Blue Kruser logo furthest to the right is Aker Brygge. The map illustrates that all "pools" in 2021 are located westwards from Oslo centre.

Kruser is a provider of electric boats only. In 2020 and 2021, GreenWaves, a small Norwegian boat manufacturer, has provided most of their boats. In the 2022 season, several new boat models will be included in Kruser's service, for instance, X-shore (Kruser, 2021b).

Skipperi's boats are Yamarin boats: Cross 57 BR and Cross 62 BR are available in the *Comfort* subscription. Users could upgrade their membership to include the 63 DC boats. There are 20 boats located at Skipperi's five locations in the Oslo Region: eight 57 BRs, six 62 BR and six 63 DC boats. Their website states that the 60 DC boats are included in this membership, although none of their current boats (in late 2021) are of this model (Skipperi Norge, 2021b).

Kruser had its pilot season in 2020, and Skipperi had its Oslo pilot season in 2021. Skipperi has existed as an enterprise for several years, primarily in Finland (where it was funded) and Sweden. Kruser is a Norwegian company with most of its pools in the Oslo region (and one in Bergen since September 2021). Still, it plans to expand to several locations in Norway in 2021, including Moss, Tønsberg, Sandefjord and Hamar (Skipperi Norge, 2021a).

Kruser and Skipperi boats are accessible for members only. In Kruser, a fixed price is paid for the entire season from May till September. In Skipperi, members pay a "monthly fee", yet members are bound by the contract to pay for the whole season from May till October.

The enterprises offer various subscription models. Comparing the prices for the cheapest subscriptions with Monday-Sunday access, Skipperi has a lower annual fee than Kruser: 23,970 NOK (3995 NOK per month for six months) in Skipperi and 29,670 NOK in Kruser for five months of usage. For limited access outside peak hours, significant discounts are offered. For add-ons to the subscriptions, such as the possibility of accessing various boat models, the costs are higher - up to 140,000 NOK for full access to Kruser's most exclusive X-shore boat in the 2022 season (Kruser, 2021a; Skipperi Norge, 2021a).

The solutions for accommodating boat sharing are dynamic. At Aker Brygge, a new pier and charging infrastructure have been constructed to host Kruser and other electric boats. At Sjølyst and Killingen, in contrast, Skipperi has been assigned existing moorings to host the pools, and the boats are located together with privately owned boats. Below I present photos of the “pools” at Aker Brygge (Kruser) and Sjølyst (Skipperi).

Photo 1: Skipperi location Sjølyst (Minutes away from Oslo by public transport)	

Photo 2: Kruser pool at Aker Brygge. A modern pier with charging infrastructure has been constructed.

4 METHODOLOGY

As there has been conducted little or no research on boat sharing in Norway, this study is of an *exploratory character*. "Boat sharing" is a term that is used without a clear definition in the literature. Moreover, there is little knowledge on what the boat sharing practice *is* or how it might develop in the future. The exploratory nature of the present thesis is a central reason for my methodological decisions of conducting a qualitative and holistic study.

Grounded in notions in practice theory that (i) practices are co-shaped between providers and practitioners, and (ii) new practices are vulnerable for defection of practitioners, the objective of this study is to understand drivers and barriers for the reproduction and recruitment to a B2C boat sharing practice in the Oslo metropolitan area. Halkier and Jensen (2011) state that there is an ongoing debate on suitable methodologies for practice theory research. However, I take inspiration from previous studies on practice theory in developing the methodologies in the present study (e.g., Halkier, Katz-Gerro, & Martens, 2011;. Halkier, B., & Jensen, I., 2011; Heidenstrøm and Hebrok, 2020)

In the following sections I will present the methodological toolbox in detail. This framework is of a qualitative character, with the semi-structured interview being the central technique for data collection. The interviews will be supplemented by three ethnographic techniques of (i) direct observations of the services, (ii) demonstrations on board the boats, and (iii) photography of central material elements of their services.

The research project and interview guides were approved the Norwegian Centre for Research Data (NSD).

4.1 THE QUALITATIVE APPROACH

I have identified a qualitative methodology as best suited for the present research project. I made this decision based on the nature of the research: (i) it is a suitable methodology for the application of social practice theories, and (ii) it is ideal for the exploratory character of the present thesis.

First, Silverman (2017) claims that qualitative approaches are best suited to study "processes and experiences". He explains that a common characteristic of qualitative approaches is that they try to problematise "routine features of everyday life" (p. 18). This indicates that these approaches are well suited to answer "what" and "how" questions.

In the present study, I am inquiring the routinised practices of boat sharing practitioners. The research question of understanding barriers and opportunities for sustainable boat sharing practices is steered towards "what" and "how" questions. The interview setting would let me as a researcher work directly with the respondents, to understand their perspectives on boat sharing usage. These factors all indicate that qualitative approaches are best suited for studying everyday practices of boat sharing.

Given the little research conducted within the fields of recreational boating and boat sharing, I think both qualitative and quantitative studies ought to be developed on these topics. There is little data available on boat sharing at all, and I am aiming to map the field and develop a definition of boat sharing. For this, the inductive character of qualitative methods is ideal (Grønmo, 2019).

Nevertheless, qualitative methods have limitations. For example, the data cannot be generalised, not even for the population of Oslo or for boat sharing practitioners. In the discussion, I will provide some suggestions on future studies, including studies of a quantitative character. Future studies of a quantitative character might benefit from definitions and categories identified in the present study.

4.2 MAKING THE BOUNDARIES

I have selected two companies to represent the context of this study: Kruser and Skipperi Norway. Both enterprises have a B2C model for organised boat sharing, with a number of “pools" in various marinas in the Oslo region. Members can access boats on an - in theory - unlimited basis during the summer season for a fixed annual price. The providers offer a limited selection of boats, with a larger selection for those willing to upgrade their subscription. Kruser is a provider of electric boats only, whereas Skipperi provides boats powered by fossil fuels.

Kruser and Skipperi are just two examples of boat sharing enterprises. Boat sharing is a name describing a heterogeneity of actors and models. In Norway, Finn.no, Boat Flex, Hygglo, Seashare and Skipperi have platforms for P2P boat sharing. These platforms could be compared to Airbnb: boat owners could enlist boats on the platforms and make an earning from the excess capacity of their boats.

If the goal is to promote more effective use of boats and marinas, both B2C and P2P models might serve this purpose. The same is likely for individuals sharing boats on an unorganised basis, for instance between several households. Yet, my impression from research on P2P platforms is that these services are primarily suitable for long-term rental of boats or for people that only intend to use boats a few times during the season. The price for renting a boat is high, often several thousand NOK per day. Future studies might dive into the potential of P2P models and unorganised boat sharing, to study which user segments that might take part in such models, to what extent boat owners could be willing to rent out their boats and to what extent this is sustainable.

The reasons I have selected Kruser and Skipperi are as follows: First, it is a question of limited time and resources, as the present study is a master's project. Second, I am *assuming* that the "pool" model of Kruser and Skipperi has a higher potential of replacing private ownership or attracting new users of boating in urban areas, as it is imitating many of the practices of boat ownership. For instance, there is no cap on the number of trips each season, and the boats are in fixed locations.

Most of Kruser and Skipperi's pools in the Oslo region were set up in 2021. Oslo had one pool in their pilot season 2020 and five in 2021, whilst Skipperi have had five pools since their launch in May 2021. This illustrates that the pool model for sharing in Oslo is new both for the providers (Kruser and Skipperi) and practitioners (members of these services). I find it interesting to study how those involved relate to the services and co-shape this novel proto-practice of boat sharing in Oslo.

4.3 THE SEMI-STRUCTURED INTERVIEW

Semi-structured interviews represent the main data source of this study. I conducted seven interviews with practitioners of boat sharing, in addition to interviews with the CEOs of Kruser and Skipperi. The data on the practitioners is drawn from interviews with members of Kruser (N=4) and Skipperi (N=2), in addition to one interview with a Skipperi user by email. Most of the respondents were recruited using social media, but two of Skipperi's participants were recruited with support from the CEO. I have aimed to recruit most of the participants on my own because I was worried respondents might self-censure if the CEOs knew their identities. All the participants were recruited from outside my social circle, in various demographic groups and geographies in the Oslo region, as I aimed to meet people in mixed life situations.

4.3.1 DATA COLLECTION

The interviews followed interview guides that were approved by the Norwegian Centre for Research Data (NSD); one guide for the firms and another one for the user side. The questions were following pre-defined themes relating to practice theory, yet open-ended questions and follow-up questions made room for respondents to highlight other subjects (Galletta, 2013). The practice theory elements of materiality, skills and images were applied

in the questionnaires to answer the research question. That is, practice theory was be applied as the lens to understand the reproduction of environmentally sustainable boat sharing.

The length of interviews was between 30 minutes and 72 minutes, except for one participant responding by email due to their busy schedule. For the practitioners, two interviews were on Zoom, three by phone, and one face-to-face. Interviews were recorded and later transcribed and coded using NVivo.

The participants were provided with a consent form, informing them on their rights including their right to withdrawal of their data from the project.

Table 2: *Descriptive overview of semi-structured interviews of practitioners. The numbering scheme of informants (1-7) is used throughout the thesis. The CEOs of Kruser and Skipperi are not given an informant number but will be referred to as "Kruser's CEO" or "Skipperi's CEO".*

Informant	**Neighbourhood**	**Organisation**	**Date**	**Interview setting**	**Length**
Informant 1	Urban centre	Kruser	06.08.21	Zoom	47 minutes
Informant 2		Kruser	13.08.21	Zoom	39 minutes
Informant 3	Lindeberg/Trøndelag	Kruser	01.09.21	Face-to-face	66 minutes
Informant 4	Sandvika (Bærum)	Skipperi	07.09.21	Questions by email	
Informant 5	Bjerkås (Asker)	Kruser	07.09.21	Telephone	57 minutes

Informant 6	Bislet	Skipperi	08.09.21	Telephone	45 minutes
Informant 7	Sinsen	Skipperi	19.10.21	Telephone	34 minutes

Table 3: *Descriptive overview of interviews with CEOs in Kruser and Skipperi*

Informant	**Date**	**Interview setting**	**Length**
Kruser CEO	09.08.21	Zoom	55 minutes
Skipperi CEO	10.08.21	Zoom	72 minutes

4.3.2 DATA ANALYSIS

Interviews were recorded, and written notes were made during the interviews. NVivo was used as a tool in the analysis, and all interviews were transcribed in NVivo.

I used a combination of a deductive and an inductive strategy for coding and analysing the data. This combination of deductive and inductive approach is suggested in Yin (2018). I started off the analysis with an inductive approach, to avoid 'plastering a ready-made explanation on phenomena that could be construed in more interesting ways' (Miles & Huberman, 1994, p. 38). I created mind maps and graphics to visualise the data and wrote notes on my findings.

The deductive approached followed the inductive one: applying the three-element framework to analyse the extent to which different elements were aligned. In excel diagrams I coded findings within the categories of "meaning", "material", and "competence", and made separate rows for providers and practitioners. I combined this process with graphics to illustrate the elements and to make connections.

4.4 ETHNOGRAPHIC TECHNIQUES

Wills, Meah, Dickinson and Short (2015) write that the data collection of semi-structured interviews is restricted to the articulation of behaviours the practitioners are aware of, and

that the application of multiple techniques could provide a maximization of 'what we could see, hear and experience' (p. 120). Moreover, the semi-structured interviews are isolated from the practice in question if they do not have an ethnographic element. Therefore, I have decided to visit the locations where the boat sharing takes place (i.e., Kruser and Skipperi "pools and their boats) to observe and document the practice. This methodological toolbox is inspired by two studies on practices in the kitchen, by and Heidenstrøm and Hebrok (2020) and Wills, Meah, Dickinson and Short (2015). I made photos during the visits of central material elements of the service, and some of these are presented in the results section. I did not collect any additional interview data during these visits.

Table 4*: Descriptive overview of ethnographic observations at Kruser and Skipperi boats and pools.*

Organisation	**Who**	**Date**	**Duration**
Kruser	Employee in Kruser	25.08.2021	30 minutes
Skipperi	CEO Skipperi	31.08.2021	1 hour

4.5 DOCUMENT ANALYSIS:

The document analysis is a qualitative content analysis, which is systematically categorising the information in documents. The aim of the document analysis is to identify data that is relevant for the research question (Grønmo, 2019; Horsbøl, & Raudaskoski, 2016). Within the present study, I have conducted a limited analysis of public documents within the municipality of Oslo.

I started off by analysing documents on E-innsyn, the public database over reports, emails, and other publicly available documents. I search for the word "båtdeling" in their database and set the time frame to 2020 and 2021. Three relevant documents were identified at E-innsyn: «Svar på henvendelse om båtdeling og sjøbruk»; «Sak 263 Privat forslag fra Espen Andreas Hasle (KrF) av 27.05.2020 - Ljansbruket småbåthavn bør bli Norges første nullutslippshavn» and «Svar på spørsmål til byrådet fra Haakon Riekeles (V) av 18.05.2021 om tilrettelegging for elbåter og båtdeling», stating policy initiatives for boat sharing practices. These documents are coded as D1, D2, and D3 in Table 5.

To analyse the data in documents D1-D3, I started by studying the explicit information of the documents: what type of document is it, who is the author, what is the context in which the document was written, and what is the explicit information in the document? Next, I question what information was left out of the documents.

Followed by the initial analysis of documents, I applied a snowballing technique and sent emails to stakeholders that were mentioned in documents D1-D3. In total I sent four emails to relevant stakeholders. In the emails I requested updated information on the progress with boat sharing related projects within the municipality. I received responses to all the emails, and they are coded as D4-D7 in table 5.

The email responses are analysed in terms of their explicit messages, to understand barriers and opportunities for the reproduction of boat sharing practices. The sources are assumed to be in positions to have accurate information on boat sharing due to their former work on this topic.

Table 5: *Descriptive overview of documents included in document analysis*

Type of document	**Name of document**	**Organisation**	**Publication date**	**Document ID**
Email	«Svar på henvendelse om båtdeling og sjøbruk»	Bymiljøetaten	31.08.2020	D1
Resolution	«Sak 263 Privat forslag fra Espen Andreas Hasle (KrF) av 27.05.2020 - Ljansbruket småbåthavn bør bli Norges første nullutslippshavn»	Oslo City Council	23.09.2020	D2

	«Svar på spørsmål til byrådet fra Haakon Riekeles (V) av 18.05.2021 om tilrettelegging for elbåter og båtdeling»		16.06.2021	D3
Email	«Masteroppgave: Båtdeling ved Sørenga?»	Byromsdivisjonen, Bymiljøetaten	21.10.2021	D4
Email	«Masteroppgave: Aktiv vannflate og båtdeling»	Plan- og bygningsetaten avdeling for byutvikling	21.10.2021	D5
Email	«Masteroppgave: båtdeling i Oslo»	Småbåtutvalget	01.11.2021	D6
Email	"20/17164-4 - Spørsmål vedrørende båtdelingsordninger – Masteroppgave"	Bymiljøetaten	03.11.2021	D7

4.6 RELIABILITY

Reliability in qualitative research refers to the consistency of the findings. The procedures described in the methodology section should be explained with transparency, easy to replicate by other researchers (Yin, 2018). Followingly, in the present methodology chapter I have provided detailed descriptions of each step taking in the project and different rationales behind these decisions. These descriptions are supplemented by tables to provide descriptive information of the conducted interviews, together with the interview guides attached (Appendix 1 and 2).

4.7 REFLEXIVILY AND POSITIONALITY

Reflexivity means to keep a critical self-evaluation throughout the research process (England, 1994). Positionality is how the 'social, cultural and subject position (and other psychological processes)' affect the research process (Gregory, Johnston, Pratt, Watts & Whatmore, 2009, p 556). They write that the positionality of the researcher might affect which answers are asked, how the questions are framed, which theories they emphasise, and which interpretations they make from data.

I was a board member of the Norwegian Association of Electric Boats between February 2020 and April 2021. This position is illustrating my personal interest in electric boats and boat sharing. I decided to leave the board in the spring on 2021, as I did not want to operate as a researcher on boat sharing and a political actor in an NGO simultaneously. However, I think this position was an asset as it provided me with extensive knowledge into the field of recreational boats in Norway.

I have assessed my role as a researcher throughout the process, aiming to keep an objective role. The objective of the present thesis is not to identify *the truth* but to understand the process of reproduction of a specific practice. I challenged the respondents to share their positive and negative perspectives and to elaborate on these positions. The variety of responses are included in the results section.

4.8 ETHICS

The project was approved by the Norwegian Centre for Research Data (NSD). They approved the research proposal, together with interview guides and consent forms. The informants were informed about the purpose of the project, together with their privacy rights including the right of withdrawal. All the seven practitioners were informed that they would be anonymised, and personal information is kept to a minimum. All interview data is stored safely in line with NSD guidelines and will be deleted after the end of the project.

5 RESULTS:

The results chapter is divided into three sections: First, I present an overview of how we may apply the three-element model to the social practice of boat sharing. Second, I analyse how the providers and the practitioners are *co-shaping* the practice, with an emphasis on the meaning element. Third, I investigate the boat sharing practices on the municipality level to identify reproduction barriers and opportunities.

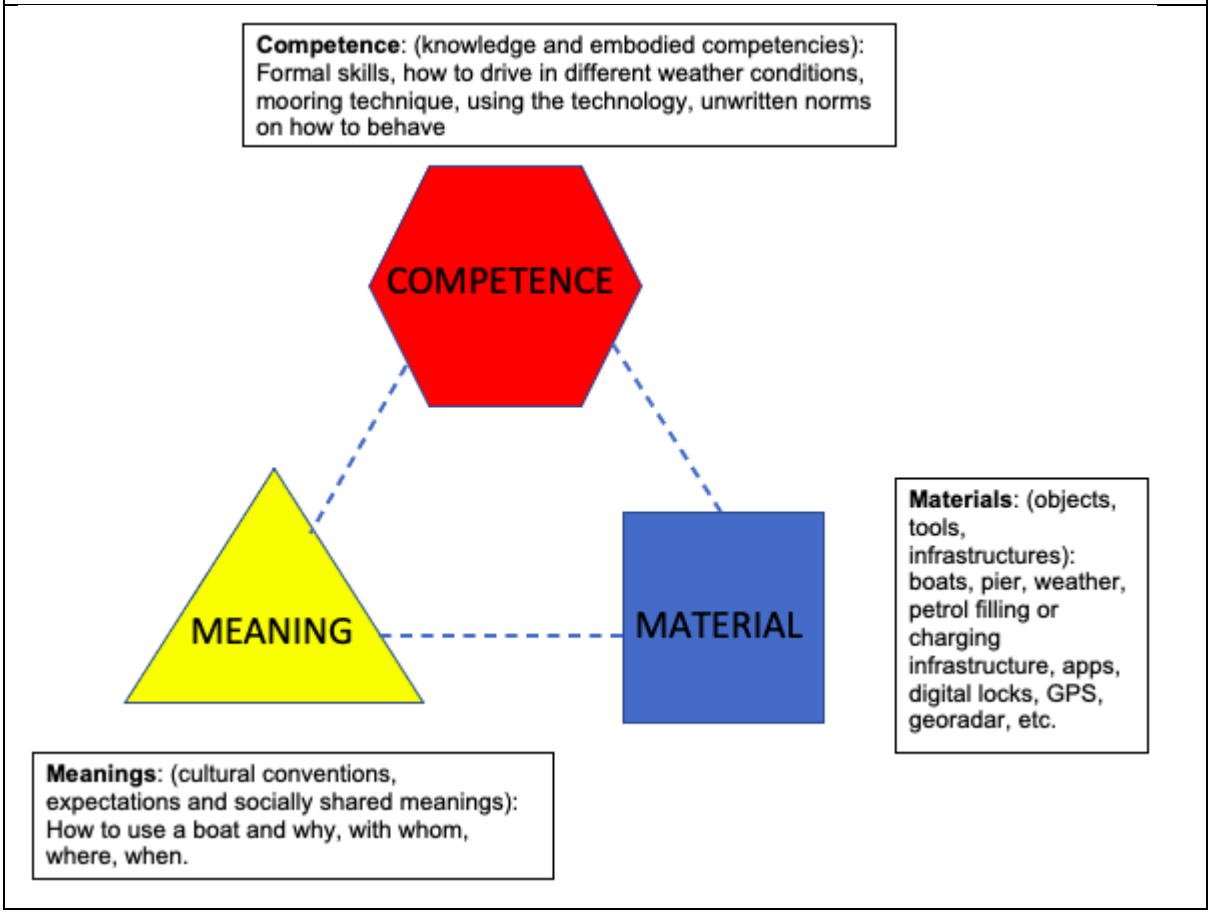
5.1 APPLICATION OF THREE-ELEMENT MODEL

Practices related to organised boat sharing are currently at an early stage, and in the present thesis, I will refer to them as *proto practices*. Proto practices are theorised as emerging practices in which the elements of meaning, material and competence are not yet integrated (Pantzar & Shove, 2010a). The degree to which these elements are integrated and reproduced might affect whether boat sharing will contribute to environmentally sustainable boating practices in the Oslo region.

I have applied the three-element model as a framework to guide the analysis. Below in figure 3, I present an overview of the elements of the proto practice of boat sharing in the case of Kruser and Skipperi:

- **Meanings**: 'How to use a boat and why, with whom, where and when?' (Shove, Pantzar and Watson, 2012, p. 29)
- **Materials**: Boats, pier, weather conditions, petrol filling or charging infrastructure, apps, digital locks, GPS, georadar, etc.
- **Competence**: Formal skills (Båtførerprøven), how to drive in different weather conditions, mooring technique, using the technology, unwritten norms.

Figure 3: *The elements of the proto practice of boat sharing (adapted from Shove, Pantzar and Watson, 2012, p. 29)*



5.2 THE CO-SHAPING OF MEANINGS

For analytical purposes, I have identified three "meanings" as the starting point of the analysis. All of these "meanings" were presented by the providers in the interviews:

Meaning 1: “Boating with no limitations”

Meaning 2: Socializing without odour and noise

Meaning 3: Trust and community building

A starting point is how the meanings were “translated” from the providers to the practitioners. Practitioners may accept or reject – or misinterpret – the meanings. The analysis might provide essential insights into the co-shaping of practices, as both providers and practitioners are included in the same study.

Next, I will investigate how these three meanings align with the other elements of material and competence. A strong alignment between the elements might suggest that the elements are a driver for the formation of boat sharing as a sound practice. A weak alignment between elements, in contrast, might suggest a barrier to the establishment of a stable boat sharing practice.

5.2.1 BOATING WITH NO LIMITATIONS

Photo 3: "Unlimited boating for a fixed monthly fee". From Skipperi's website.	
Photo 4: "Worry-free boating". From Kruser website.	

Kruser and Skipperi are presenting meanings on their websites that are closely related but not identical: Kruser is advertising their service in terms of being "worry-free", whilst Skipperi presents their service as "having no limitations". In the interviews, they elaborated on these meanings:

"Worry-free means that the boat is clean, and everything is ready for usage. And then you bring it back to the marina at the end of your booking." (Kruser CEO)

"When you finish the trip, the boat is no longer your responsibility" (Skipperi CEO)

In other words, they seem to frame their service in terms of *outsourcing of responsibilities*. At least, an outsourcing of responsibilities before and after each trip.

There are several responsibilities associated with boating: getting the boat on the water in the spring and back on land after the summer season, maintenance, taking care of the boat during a storm, or protecting the boat or motor against theft. Sometimes the boat needs service in the middle of the season, and the waiting time for a professional service could be long.

All the practitioners in my sample report that they appreciate not having to worry about these responsibilities. Next to the meaning of "outsourcing of responsibilities", a fascination for the technology and the argument of saving money compared to boat ownership were central meanings.

For instance, informant 6 and informant 7 from Skipperi stated the following:

"We wanted to test boating. Nevertheless, renting a boat is ridiculously expensive. We were attracted by their [Skipperi] affordable price. Also, it is awesome not having to bother with the responsibilities of ownership." (Informant 6, Skipperi)

"I have desired to own a boat for a long time. And then I discovered Skipperi, and it's even better because I could learn boating without purchasing a boat. (...) A boat would cost about 500,000 [NOK], but now I pay just about 30,000 [NOK] for the same experience" (Informant 7, Skipperi)

Informant 7 is among the practitioners in Skipperi that have used the boats the most during its pilot season. He perceived the price of a membership to be cheaper the more he uses the boat, as the annual price is fixed. If he owned a boat himself, he claims that the price calculations would be different: then more usage of a boat would increase the need for a professional service and the value of a boat would gradually depreciate.

Informant 1, in contrast, feels that Kruser is ridiculously expensive as her family prefer not to use boats that often. She calculates that a fair price of a boat trip is 1000 NOK. To rationalise the annual price of 30,000 NOK, she says that the family needs to go on at least 30 trips during the summer season.

Misinterpretations or abuse of the meaning of worry-free

Some practitioners may be *misinterpreting* or abusing the message of worry-free or limitless boating:

- Informant 3 from Kruser is annoyed with users that leave their boats dirty after use, leaving the responsibility of cleaning to the Kruser staff: “They treat the boats as a hotel room they could trash”, he says.
- Informant 6 from Skipperi find it frustrating that other user end their bookings without filling petrol. Although there is a promise from Skipperi that he will be paid back his petrol balance after the season, it still violates his expectation of a worry-free experience.

There are also material elements of Kruser and Skipperi that are contradicting the “worry-free” and “limitless” meaning of boating. For instance:

- There are caps on the number of bookings that could be made at the time. In Kruser, each user could make one long-term booking (any date), one short-term booking (within the next 48 hours) and spontaneous bookings. Informant 1 in Kruser reports that this system makes it challenging to make an overnight trip with the boat - as they could only make a booking for the first half of the trip (long-term booking) and then must wait till there are 48 hours left to make the second booking. Then there will be a risk that someone else has made the booking for that time slot on that specific boat.

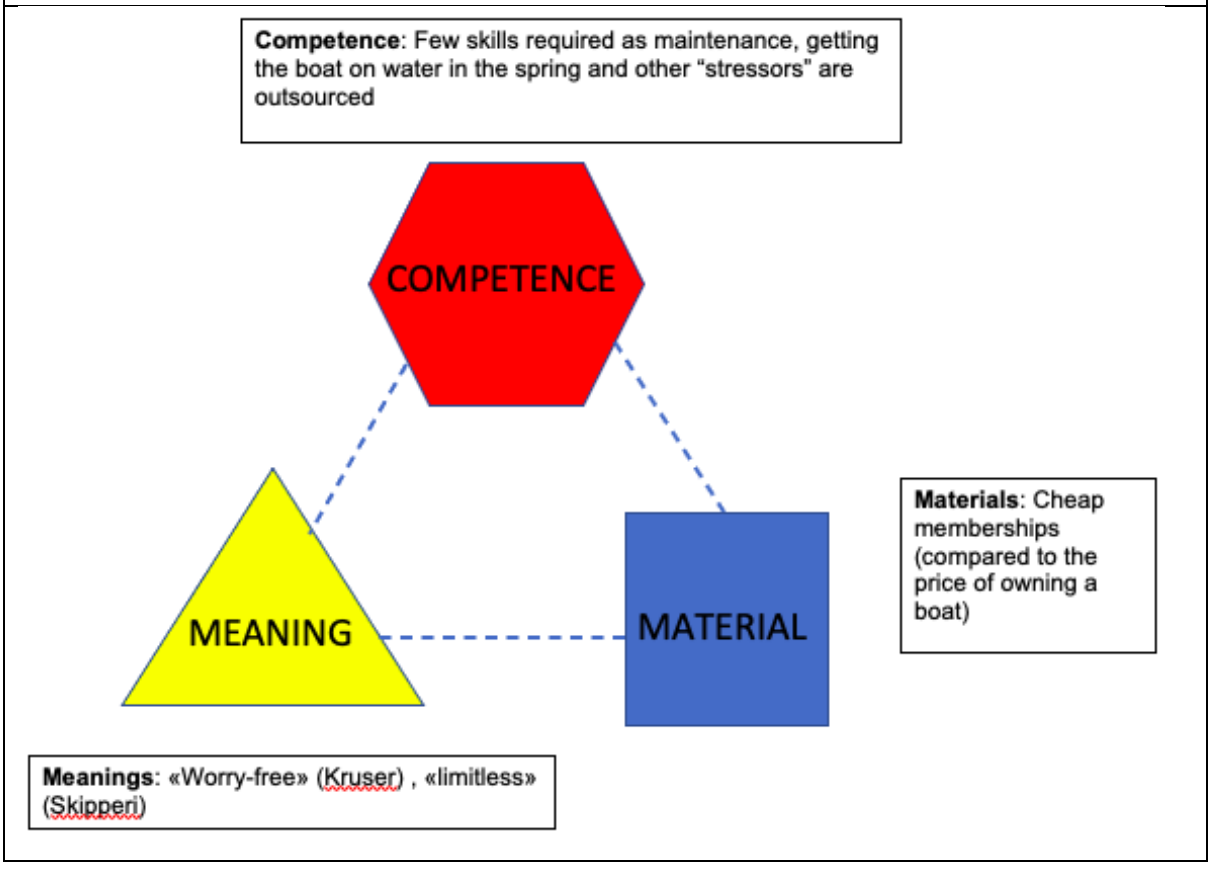
Informant 4 in Skipperi is also reporting the booking system to be a challenge:
“As we are of the spontaneous kind, it would be nice if there always was a boat available. However, our motto is: "any trip on the sea is better than none." (Informant 4, Skipperi)

Another respondent, from Kruser, explains that he has become skilled in the booking system over time. When he and his wife plan to make a short-term booking in the weekend, they know that the booking will be made available 48 hours in advance (that is, 9 AM on Thursday or 9 AM on Friday). This illustrates that some practitioners learn to get around the inflexible elements of the booking system and become skilled in making bookings in peak hours.

Key enablers and barriers

Kruser and Skipperi present the related meanings of “worry-free boating” and “boating with no limitations". The providers explain that "worry-free" implies that all responsibilities before and after trips are outsourced. The practitioners can use the boats limitless (although the booking cap represents a boundary). Together with the materiality of "cheap memberships compared the price of owning a boat" and the outsourcing of responsibilities (i.e., the outsourcing of competencies needed to use a boat), this appears to be a model with the potential to stabilise a practice. In Figure 4 below, I illustrate how elements might co-exist and become an integrated practice.

Figure 4: *How the meanings of “worry-free” or “limitless” boating might be aligned with material elements of “affordable memberships” and competence element (that is, an absence of skills required for practitioners).*



Nevertheless, there are instances of people experiencing that their expectations of freedom and flexibility are not met. At other instances practitioners may be misinterpreting or abusing the service. For instance, the booking cap (of two bookings at the time) is perceived as

contradictory to the message of "limitless boating". Some users are “tweaking” the booking system as they learn how to make bookings in peak booking hours: they learn when bookings are made available for reservation. In other words, they develop the competence on how to make bookings for peak hours.

5.2.2 SOCIALIZING WITHOUT ODOUR OR NOISE

Kruser is providing electric boats only – a technology that is a new introduction to the market. In this sense, Kruser is having a double challenge: convincing people to take part in boat sharing and use electric boats. The Kruser CEO suggest that electric boats have a huge potential for success, as the boats have no odour or noise. This will make it easier to socialize during the trip, the Kruser CEO states.

“We want to prove that there is no need for 150 horsepower’s [motors] (...) We will prove that zero-emission boats are ideal for most people."
(Kruser CEO)

My findings in interviews with Kruser users suggest that electric boats are both loved and hated: the technology remains at an infant stage and does not meet the expectations of some practitioners. Others – the “technology enthusiasts” – express passion for the technology. For those practitioners that prefer to get fast to a destination or to travel outside the municipality, there are challenges with Kruser and the *Comfort* membership. Those users that prefer to stay in the local areas to socialize, go swimming, eat, and relax expressed a liking for the electric boats.

All the practitioners I interviewed in Kruser had the Comfort membership (i.e., the most affordable membership category), with access to two boat models: Green Waves 601 and Rand Mana 23. These boats are limited in range, and the range is highly dependent on the speed. In 4 knots (7 km per hour), the boats have a range of 24-28 nautical miles (44-51 km). On the max speed of 6-6.5 knots, the range will decrease to about 10-13 nautical miles. For comparison, on Skipperi’s cheapest membership, the Yamarin cross 57 boat holds a max speed of 38 knots and a 107 litres fuel tank. Interestingly, when selecting the cheapest memberships of Kruser and Skipperi, the boats vary dramatically in performances in terms of speed and range.

Informants 3 and 5 from Kruser expressed a fascination for the technology and experience of electric boats. They listed the materiality of no odour and sound as a unique character of these boats. For informant 3, the sound-free experience was a facilitator for the meaning of "socialization", as he could have conversations with the passengers while driving without complications:

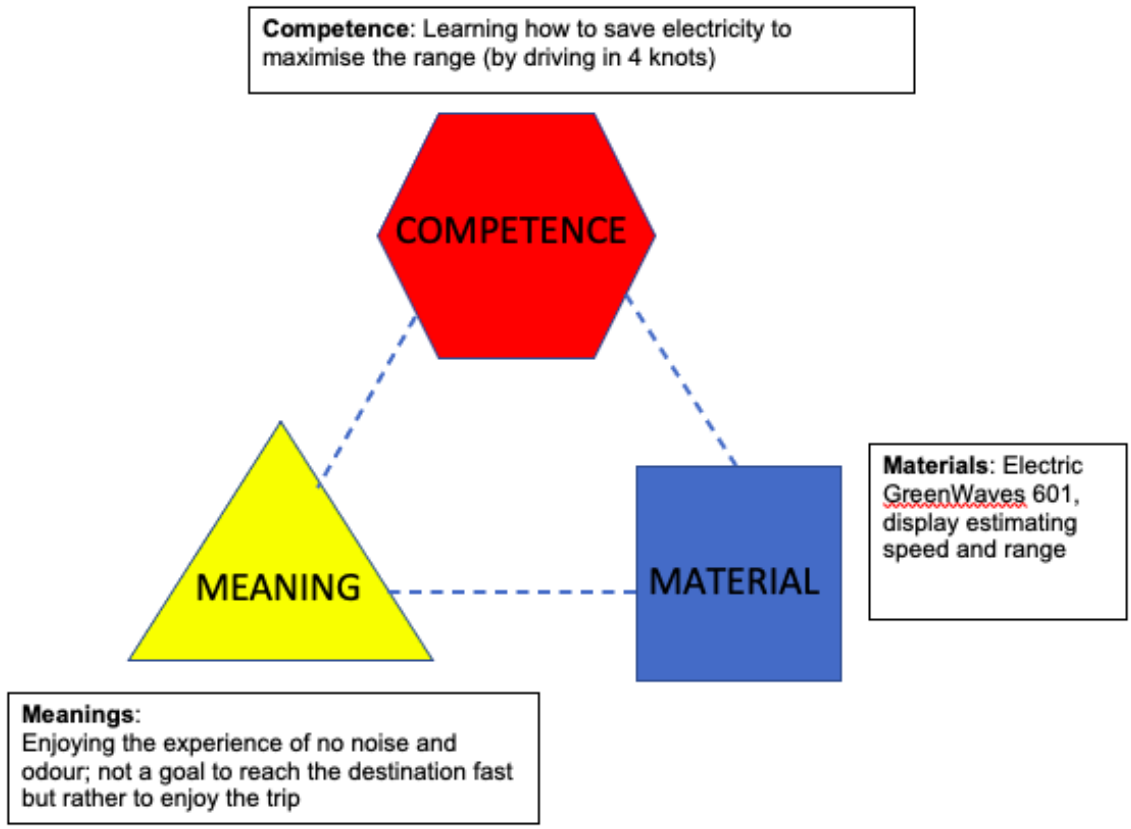
"I owned a 150 hp Mercury, and that was not social at all. You were not able to communicate with anyone. Everything above five or ten knots, and you were not able to communicate – and the boat has a max speed of 35 knots."
(Informant 3, Kruser)

Informant 3 explained that the battery of a GreenWaves 601 could last for '*the entire day'* and that the range is highly dependent on the speed. At the speed of four knots, the battery will last for about eight hours. When the speed is increased to five knots, the boat will run out of battery after only four hours. This illustrates that the competence of how to drive energy-efficiently is a key skill for Kruser-users having the Comfort membership.

The digital display (in the photo below) facilitates the learning of how to use the boat energy-efficiently. It displays the boats' speed and the battery level and estimates the remaining range at the current speed. This is an example of how to integrate the elements of the practice of driving an electric GreenWaves 601 boat, as the material element of the display could influence the competence-element of knowing how to conserve energy.

Photo 5: Display in Kruser boats

Figure 5: *How Kruser aspires to redefine boating with no odour or noise and with the social experience at the centre. Driving GreenWaves 601 or Rand Mana boats, these meanings depend on the competence of saving energy, which might be trained by the display estimating the speed and range.*



The competing meaning of "boating as usual"

Nevertheless, three out of four Kruser respondents reported that they were likely to upgrade their membership to a Premium subscription (giving them access to boats with a better range) or transfer their subscription to Skipperi. A precise reason for this was that their current subscriptions did not meet their expectations for using a boat.

For instance, Informant 1 reports that they have visited many places around Oslo this summer, and they are curious to see new places, but they are limited by the range of the Green Waves 601. They mention Oscarsborg and Håøya as destinations they would like to visit by boat:

"We have visited all destinations near Oslo, and we would like to go further away from the city (...). We realise that the technology is not yet good enough for longer trips. Hence, a diesel boat is a possible option." (Informant 1, Kruser)

Informant 5 reports that he likes the boats, however, he finds them uncomfortable in a headwind. Also, he thinks it would be easier to use Kruser boats if there were more charging stations for electric boats, for instance halfway to Håøya at Nesodden.

Two Kruser respondents report that they intend to transfer to the Premium subscription next year (54,000 NOK), which would give them access to the high-speed Hydrolift E-22. This boat has a 150-horsepower motor, with the possibility to go for one hour at a speed of 23 knots. The Hydrolift boat seem to replicate much of the practices of boating in a diesel- or petrol-powered boat, as high speed is possible. However, the range is still limited.

Skipperi might be in a privileged position, as their boats are powered by diesel and gasoline. Practitioners in Skipperi would not need to worry about the range and speed (although this will show on their petrol bill).

Kruser may, however, have some resonance in the message of socializing. Respondent 5 explained how the purchase of a Tesla changed the driving experience, and he think that electric boats may have a similar potential in "reframing" the meaning of boating.

Key enablers and barriers

For practitioners having the Comfort subscription of Kruser, there are limitations in range and speed. Practitioners need to adopt two practices at once: boat sharing practices and electric boats practices. An essential tool for learning how to drive energy-efficiently in a GreenWaves 601 is the digital display, which is a material element influencing the competence of conserving energy.

However, next year Kruser will introduce several new boat models. These models will have better range and provide a higher speed than GreenWaves 601 and Rand Mana boats. It is possible that Kruser may benefit from a "Tesla-effect", as new practitioners may feel an enthusiasm for boats that can reach the destination fast combined with being free of noise and smell.

5.2.3 TRUST AND COMMUNITY BUILDING

"We prefer communication and dialogue over sanctions. Shit happens, people can make mistakes" (Kruser CEO)

A central meaning of Kruser, as expressed by the CEO, is their belief in trust and communication. They express certain expectations from their practitioners on how to use the service, yet they prefer not to use sanction mechanisms. Examples of expectations include, for example, deleting bookings in advance when the practitioners are unable to meet up as planned, cleaning the boats after use, responsible usage of the boats and to show caution for changing weather, and reporting any damage on the boats to the company.

"People can make mistakes", the CEO of Kruser explains. He is expressing trust in the practitioners, assuming – or hoping – that the trust will not be abused. If the practitioners use the service poorly, then Kruser needs to improve their communication with the practitioner in question, he says.

This interpretation is supported by one of the respondents: *"There are rules on how to leave the boats [at the end of a booking], but I am sure that many fail to capture that information. It is like the rules of conduct in a housing cooperative: you read the rules when moving in, yet without regular reminders, you will forget"*(Informant 5, Kruser)

However, another respondent claims that there indeed are issues with the abuse of trust among some practitioners: "*some practitioners believe this is a hotel room to be trashed. And they [Kruser] do not want that. People go fishing and gut fish, and when they do, again and again, it gets expensive [for Kruser to clean the boats]. (Informant 3, Kruser)*

Informant 3 claims that Kruser is dissatisfied with the poor behaviour of some users. Nevertheless, according to what he has heard, they aim to apply benefits for good usage rather than sanctions for poor usage. Good behaviour, for instance, returning the boats clean after usage or deleting bookings in advance when they are unable to go boating, might result in benefits such as discounted memberships.

The supplement of trust with technology

"Skipperi is first and foremost a technology company" (Skipperi CEO)

Skipperi has, to a greater extent than Kruser, implemented technologies in their service. Some of Skipperi's technologies seem to replace the need for "trust and communication". For instance, photo recognition tools are integrated into the app's software, and a "black box" will register whether the boat is damaged. Skipperi has existed for a more extended period than Kruser (since their 2017 funding in Finland), and Kruser may implement similar technologies.

Let us first analyse the photo recognition software in the app. The practitioner must scan selected areas of the boat at the hull, and the propel (see photo below). When finishing the trip, the user will have to repeat the scanning process, and photo recognition technology will identify any damage. Skipper's CEO explains that any damage must be discovered as early as possible. For example, damage in the propel would become more expensive to repair if it is not discovered early.

Similarly, Skipperi has installed a "black box" from the Norwegian company Sensar Marine on their boats to identify dangerous or poor usage of their boats: *"It tracks the location of the boat, the water level inside the boat (...) Moreover, the G forces are measured, and if there is a G force that is more powerful than a wave, then we'll receive a notification (...) If you hit*

something hard combined with a drop in speed, it indicates that something has happened", Skipperi's CEO says.

A third technology, implemented shortly before my visit to Skipperi in August, is geofencing technology. The display onboard the boat will provide warning to the users, for instance if they drive faster than the speed limit.

These technologies are interesting for several reasons. First, the "blackbox" and "photo recognition" are tools to identify damage, that practitioners otherwise may not discover or choose not to report to the providers. Second, they may also be an instrument to motivate responsible usage of the service. Returning to the three-element model, I can image that the material elements of "photo recognition", "black box", and "geofencing" all influence the competence of driving responsibly.

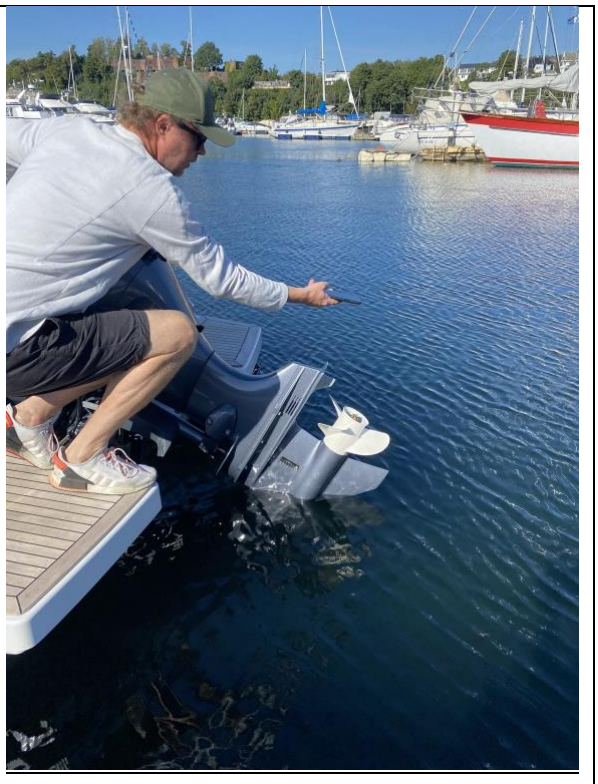
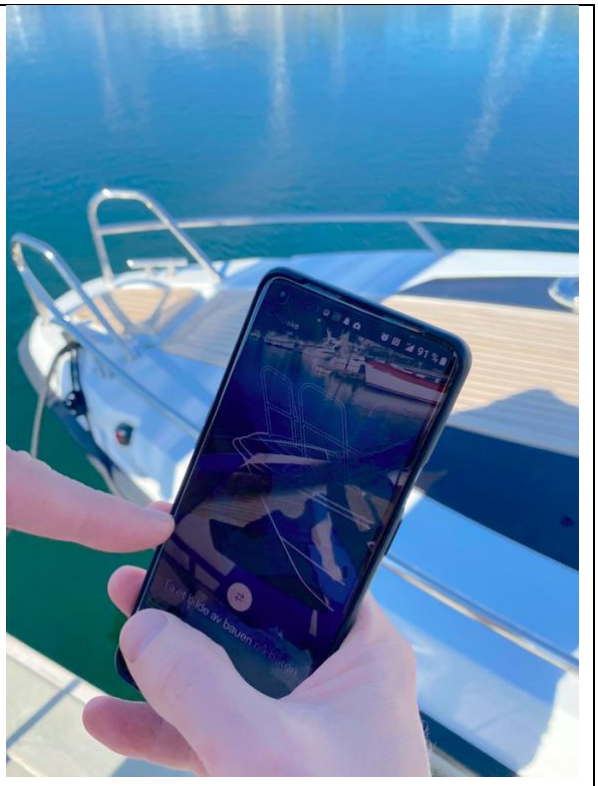
Photo 6 (Skipperi): Before and after starting the trip, the user needs to take three photographs: of the hull, and above and below the proper. Photo recognition technology is integrated into the app, comparing the photos from before and after the trip to identify visible damage.	

Photo 7 (Skipperi):	

Key enablers and barriers

To sum up, implementation of technologies represents an opportunity for the reproduction of boat sharing practices. Technologies may ease the workload of Kruser, as the communication of expectations may be a time-consuming and expensive process. Moreover, the technologies may work as a "disciplining tool", influencing the users to use the boats with care.

Kruser and Skipperi may adopt technologies that are already invented and used in, for example, car sharing practices. These technologies may have mixed applications: photo recognition may not only identify damage, but also be applied to show that boat is clean and tidy after usage. However, privacy may be a concern.

5.2.4 Summary of section

In Table 6 below, I summarise key findings from the present section. It illustrates that there are several reproduction barriers, including the booking system or poor range of boats. Barriers may work against the integration of elements and potentially lead to defection from the practice. These barriers may partly be described as taking place in the "translation" of meaning elements between providers and practitioners, as the practitioners have a different interpretation of these meanings. Nevertheless, several opportunities for reproduction are

found. For example, there is a high appreciation for the outsourcing of responsibilities in our sample.

Table 6: Summary of key findings on reproduction barriers and opportunities for Kruser and Skipperi

Meaning element (as expressed by providers)	**Reproduction barriers**	**Opportunities for reproduction**
Meaning 1: "Boating with no limitations"	- Booking system: cap on bookings, hard to make overnight bookings, hard to be spontaneous	- Learning to make bookings 48 hours in advanced - Outsourcing of responsibilities and low price compared to boat ownership
Meaning 2: Socializing without odour and noise	- Boats available on Kruser's comfort membership limited in terms of range, best suited for trips in local areas	- Learning how to drive energy-efficiently - The supply of new E-boats that replicate "boating as usual", in terms of speed and range
Meaning 3: Trust and community building	- Practitioners do not know what is expected of them, or they abuse the trust - For instance, practitioners are expected to clean boats after use or report any damage	- Integration of technologies may both monitor user behaviour and motivate users to be more responsible - These technologies may stimulate the safe usage of boats,

		but also protect boats from damage

5.3 REPRODUCTION BARRIERS WITHIN MUNICIPALITY

In the present section, I intend to investigate reproduction barriers and opportunities for boat sharing practices at the level of the municipality. This is an attempt to zoom out from the narrow context of Kruser and Skipperi and to connect my study to the political discourse in Oslo.

5.3.1 THE BOAT SHARING RESOLUTION

A key document is the following resolution from the Oslo city council on September 23, 2020: *"The city council (Bystyret) asks the city government (Byrådet) to evaluate how to facilitate for the transition to zero-emission solutions in small boats, as well as the establishment of boat sharing schemes, in new and existing marinas in Oslo*" (Oslo Kommune, Bystyret, 2020). I have identified the wording "new and existing marinas" an essential formulation, and I have investigated how this could be realised in practice.

In June 2021, representative Haakon Riekeles from the Liberal party asked Vice Mayor for Environment and Transport Lan Marie Berg to report to the city council on the progress. Berg was responsible for boat sharing policies at the time. In Berg's response, she reported that there were challenges:

"(…) the operation of the municipal marinas in Oslo has been left to various boating associations, and our relationship with the boating associations is regulated through contracts. Therefore, any requirements for specific boat types (e.g., electric boats) or modes of operation (e.g., boat sharing schemes) must be incorporated into the contracts when these are to be renewed. A small boat harbour on the east side of (…) is being planned, and I can inform you that the Urban Environment Agency has planned for 50 berths, of which 16 berths are intended for boat sharing schemes." (Berg, 2021)

In the answer above, Berg responded that boat sharing is an important project for the municipality. Following the resolution from the city council, she responded that measures

would be taken to facilitate boat sharing both in new and existing marinas: the construction of a new marina at Sørenga would have 16 berths reserved for boat sharing. Moreover, any requirements to existing boating associations (that is, marinas) needed to be incorporated in the contracts.

5.3.2 CONTRACTS

Småbåtutvalget is organising the relationship between the municipality and the boating associations. They are a committee with members of the boating associations and the municipality. I emailed the leader of Småbåtutvalget, and he stated that the contracts between the municipality were a barrier and opportunity for boat sharing. He writes that the problem is not that the associations are conservative or do not want boat sharing services. It is the current contracts that are the barrier to the establishment of boat sharing pools:

«[the boating associations] face some obstacles because it is stated in the contracts that berths will not go to commercial use. We have nevertheless clarified with our city council department that using some of the berths for boat sharing is not in breach of contract" (J.O. Nybo, personal communication, November 1, 2021).

The leader of Småbåtutvalget stated that it is possible to emphasis boat sharing in the contracts. Drafts for new contracts are, in fact, pending approval by the Vice Mayor of Environment and Transport. However, the contracts have been pending approval for a long time, he writes. I do not have any knowledge on why this process has stagnated.

5.3.3 INVESTMENTS

I got in touch with the authors of the report Aktiv Vannflate, which proposed boat sharing in the new marina at Sørenga. They write that lack of funds has put the project on hold (L.M. Søyseth, personal communication, October 21, 2021).

This message was confirmed by the chief architect of the marina at Sørenga:
"(…) we have submitted a proposal and a completed preliminary project with a cost estimate to our city council department (the Department for Environment and Transport). We have proposed the measure in several budget rounds, but it has not yet been prioritised." *(M. Flensje, personal communication, October 21, 2021)*

In conclusion, the construction of the marina at Sørenga is fully planned, but its construction is dependent on public funding. I do not know why this decision is not made, or whether this investment is likely to be made at all. The Department of Environment and Transport is responsible for this project, which is the department of the Vice Mayor of Environment and Transport.

6 DISCUSSION

In the present thesis, I investigate barriers and opportunities to reproduce environmentally sustainable boat sharing practices in the Oslo metropolitan area.

Boat sharing is unexplored territory in an academic context. The present thesis is among the first studies conducted on boat sharing, and to my knowledge, the first in a Norwegian context. I intend to provide data that could guide the decision-making process within the municipality and relevant companies and provide a foundation for future research in this field.

To answer the overall research question, I have developed several sub-questions:

- ***A)*** What are the practice elements of business-to-consumer boat sharing?
- ***B)*** *How are providers and practitioners co-shaping the practice of boat sharing?*
- ***C)*** *What role might the municipality of Oslo play in the reproduction of boat sharing practices?*
- ***D)*** *Under what conditions is boat sharing environmentally sustainable?*

In the following sections, I will discuss environmental sustainability before presenting a general discussion, including the findings from the results section. Additionally, I will present a suggested definition of boat sharing, policy recommendations, limitations, and suggestions for future research.

6.1 UNDER WHAT CONDITIONS IS BOAT SHARING ENVIRONMENTALLY SUSTAINABLE?

Is boat sharing always sustainable, even if the boats are powered by diesel or petrol?

The municipality of Oslo is considering facilitating boat sharing, for instance, with investments in infrastructure (Berg, 2021). I think the interest in supporting boat sharing assumes that the practice will positively affect a societal scale. Nevertheless, how do we know that this is the case without research on the field?

In the present analysis, I will not present any calculations on the environmental sustainability of boat sharing. Instead, I will discuss which factors may influence the sustainability footprint.

Boat sharing is presented as a recommendation in Oslo policy reports (e.g., Plan- of bygningsetaten & Bymiljøetaten, 2020; Klimaetaten, 2019), and as a solution to mixed challenges such as climate gas mitigation, maritime restoration, freeing space for recreation (in the marinas, with more effective usage of public land), and introduce more people to boating.

The objectives above may be contradictory. Is it possible to introduce more people to boating and simultaneously curb emissions? The answer may be yes, as both the boats and the space in the marinas are used effectively. Instead of one household owning one boat and using much space on the pier, boat sharing would provide more effective usage of each boat and the marinas. Much more users may have access to fewer boats.

There are long waiting lists in public marinas, combined with boats being under-utilised (Kongelig norsk båtforbund, 2018). The record high purchases of boats in 2021 have raised the demand for the construction of new marinas. Boat sharing may stimulate more effective usage of marinas, diminishing the demand for the construction of new marinas in vulnerable maritime nature.

The effect of boat sharing on the mitigation of climate gas emissions is open for discussion. Studies on car sharing have suggested that the diffusion of car sharing is a driver for less car

usage (Ferrero et al. 2018; Martin and Shaheen 2011). Even when a car is powered by diesel or petrol, sharing cars remains more sustainable than private ownership. The reason is explained by the claims that practitioners of car sharing are using the cars more minor than they would if they owned their car.

Wait a bit: one of the municipality's objectives is indeed to increase the usage of boats. The climate gas emissions from boating are primarily created during usage
. And the emissions data on boating are not comparable to cars: in fact, a fast-driving boat emits much more than a car at the same speed. The reason is that it is more energy-intense to drive in water than on land, up to 10-15 times more energy-consuming (Melum, 2021; Nissen-Lie, 2021). Hence, emissions might increase a lot.

The most environmentally sustainable person is the one not using a boat at all. Nevertheless, that is not a reality that is visioned by the municipality. In their vision, more people are using boats. Perhaps the only viable option for sustainable boating is requirements for zero-emission boats. At a minimum, for boat sharing projects in publicly owned marinas, it is possible to require the boats to be zero-emission – at least over time when the zero-emission technology improves.

More factors may be included in a sustainability analysis: for instance, will the diffusion of boat sharing services reduce the demand for the construction of new marinas (and hence protect vulnerable maritime life)? Likewise, how much emissions are linked to the production of boats, and what are the positive effects of people deciding to enrol in boat sharing rather than purchasing a boat?

6.2 DEFINITION OF BOAT SHARING

In this study, I examine the phenomena called B2C "boat sharing" in the political discourse. The academic debate over definitions demonstrates that scholars may disagree on boat sharing being within the "sharing economy". These scholars worry that the term sharing economy is inflating, as heterogeneity of for-profit companies call their activities sharing economy. However, their activities may have negative societal impacts (e.g., Belk, 2014).

Building on Richardson (2015), I think it is irrelevant to label the practice in question "boat sharing" or something else. The crucial element is whether this practice may lead to the more effective usage of the under-utilised resource of recreational boats. Digital platforms and technologies such as digital locks, geofencing, the "black box from Sensar Marine are key facilitators that make this practice possible. For instance, the digital locks make it easy to access the boats without staff members; technologies might discipline the practitioners and reduce the risk of damage to the boats, and the digital booking calendar makes the booking of boats into a process with no bureaucracy.

Kruser and Skipperi are just two examples of how B2C boat sharing might be organised. It is possible to imagine firms organising their models differently, for instance, in cooperative or non-profit models.

Thus, I have developed the following definition of B2C boat sharing*: Boat sharing is a practice whereby registered members of an organisation can operate recreational boats on a self-access basis for a short and medium-term use.*

6.3 RQ: WHAT ARE BARRIERS AND OPPORTUNITIES FOR REPRODUCING ENVIRONMENTALLY SUSTAINABLE BOAT SHARING PRACTICES IN THE OSLO METROPOLITAN AREA?

In the results section, I applied the three-element model by Pantzar and Shove (2010) to study the reproduction of the boat sharing practice. Boat sharing, being an emerging practice, could be defined as a "proto-practice". The links between the elements – meaning, material, and competencies – are not yet integrated into a regular practice.

I started by presenting the three-element model applied for B2C boat sharing:
Meanings: ‘How to use a boat and why, with whom, where and when?’ (Shove, Pantzar and Watson, 2012, p. 29)
Materials: Boats, pier, weather conditions, petrol filling or charging infrastructure, apps, digital locks, GPS, georadar, etc.

Competence: Formal skills (Båtførerprøven), how to drive in different weather conditions, mooring technique, using the technology, unwritten norms.

Subsequently, I identified three central "meanings" that the providers presented in the semi-structured interviews:
Meaning 1: “Worry-free boating”, “Boating with no limitations”
Meaning 2: A redefinition of boating - enjoying the experience of no odour and no sound
Meaning 3: Trust and community building
I studied how the practice elements were aligned, aiming to study how the elements of boat sharing were integrated as sound practices.

In the analysis, I made multiply relevant findings: Firstly, the meaning of “worry-free” or “limitless” boating has a strong appeal among the practitioners. For users with little or no prior experience with boating, it is attractive not having to learn how to maintain a boat during and after the season. Others will see this in monetary terms, as they save money compared to owning a boat. In short, this meaning had a strong appeal to the practitioners.

However, some respondents reported expectations of the "worry-free" nature that could not be satisfied. For example, the cap on bookings limited the perceived freedom, and the limited range of electric boats caused worries that the practitioner is not used to when driving a diesel- or petrol-powered boat. These factors may indicate that practitioners and providers are shaping and interpreting the elements in different ways, negotiating – or rejecting – the meanings that the providers present.

Secondly, Kruser's meaning of redefining boating for no odour and no noise has a strong appeal among enthusiasts. "Socialising" is a neighbouring meaning of the noise- and -odour-free character, as it may be too noisy for everyday conversations in a diesel- or petrol-powered boat. Kruser intends, indeed, to redefine boating as having the trip in the centre of the experience rather than reaching a destination fast. This message is ideal for their GreenWaves boat model, as the boat is inferior in terms of range compared to Skipperi boats but superior if the purpose is quietness and socialising on the sea.

Kruser has a double challenge, both promoting boat sharing and electric boats practices. Skipperi, on the other hand, has a fleet of traditional fossil boats. In this sense, Skipperi may

have less of a challenge than Kruser, as the meaning of their boats is “boating as usual” and not to redefine boating in terms of slow speed together with the odour and sound free character. Nevertheless, Tesla succeeded to transform the EV from being perceived as “inferior” to turn into a luxury segment. In 2020, Kruser will introduce several new and expensive boat models in their service. The central question is whether users will be willing to pay extra for the membership to get access to luxury E-boats.

Thirdly, Kruser has a trust-based model aiming to use communication channels over sanctions to adjust the behaviour of practitioners. In the analysis, it became clear that Skipperi has adopted more technological artefacts than Kruser. I think at least some of these technologies might replace the need for constant communication and trust-building, as the technologies themselves could incentivise behaviour change. Examples of technologies include geofencing and photo-recognition technology to detect damage. Users may be more careful to the boats with these technologies present, although I do not know this for sure.

6.4 POLICY RECOMMENDATIONS

I have identified opportunities for the reproduction of boat sharing at the level of the municipality. I have found that new contracts and investments in the planned marina at Sørenga are important for boat sharing practices to reproduce. Moreover, for boat sharing to be reproduced along environmentally sustainable pathways, the municipality may direct funding towards zero-emission boating.

Most marinas in Oslo are publicly owned, and this is an opportunity for boat sharing. The municipality has the power to make demands on how the marinas are used, for instance, the introduction of electric boats or boat sharing services. The politicians are aware of this fact, as made a 2020 resolution on the accommodation for boat sharing in "new and existing marinas" (Oslo Kommune, Bystyret, 2020). The question is why the implementation of this decision has been slow.

According to the leader of Småbåtutvalget, drafts for new contracts are waiting for approval – and the process of approval has stagnated. The Vice Mayor for Environment and Transport is responsible for the contracts. I do not know why the contracts have not been approved, and I would recommend her to speed up this process. The reformulated contracts would make it

clear for the marinas that boat sharing is allowed – as the current contracts state that only non-profit usage is permitted – and that it is an explicit priority of the municipality.

Moreover, I would recommend the municipality or Småbåtutvalget/Småbåtfondet to invest in the planned construction of a marina for boat sharing at Sørenga and consider investing in boat sharing infrastructure at Sjølyst. These projects would give boat sharing services – Kruser, Skipperi and future entrants to this market – access to locations near the city centre and public transport.

Finally, Kruser might face several reproduction barriers, as their model depend on the reproduction of boat sharing and electric boat practices. Electric boats are a new market segment, and the practitioners need to test and adopt the practices related to electric boating. There is also an element of infrastructure required for Kruser to operate, as the boats need charging infrastructure that might not exist in all marinas. The municipality might decide to invest in charging infrastructure to support the reproduction of electric boats practices.

As sustainability concerns is a central motivation for the municipality's passion for boat sharing, the municipality may clarify their expectations to the providers. For instance, they may direct the investments to those providers that promise to implement a fleet of electric boats. Similarly, when the municipality builds the new marina at Sørenga, they may require boat sharing providers to go electric to operate from the marina.

6.5 LIMITATIONS

There are limitations in this thesis that I would like to highlight, and this may be a starting point for future research.

First, concerning the methodology and sampling, six practitioners in the semi-structured interviews are modest. Out of these, two interviews were with Skipperi members in addition to the written interview with a third respondent. The respondents in my sample provided rich data, and I was limited in time and resources. Thus, I concluded that I had collected the necessary data for my project with my current sample size.

The sample is limited to early adopters of Kruser and Skipperi, and it is not representative. Late adopters of boat sharing practices may differ in their characteristics and their motivations from the early adopters. Therefore, the present study may not provide good data on the population or the potential for widespread recruitment into boat sharing practices.

Second, the semi-structured interview is vulnerable to self-reporting biases (Scott & Balthrop, 2020). The information provided in the interviews were the respondents' vivid accounts of the practice of boat sharing. For instance, the respondents may report what they think I, as a researcher, want to hear. Likewise, some elements of boat sharing practices may have a less explicit character and thus not appear in our data.

Third, Covid-19 has been a limitation. The university was closed during parts of the spring in 2021, and all our lectures were online. It was a challenge to plan the present project during those conditions. In addition, I would ideally make all the interviews onboard the boats, to observe the practitioners when they are performing the practice. However, I decided early in the process to conduct interviews (mostly) on Zoom and telephone due as a measure of infection control.

6.6 FUTURE RESEARCH

Future research is needed to establish the potential of boat sharing in Oslo: (i) studies on the recruitment to boat sharing, (ii) studies on social sustainability, and (iii) studies on other organisational models, including peer-to-peer (P2P) and cooperative/non-profit models.

First, the present study did not investigate the recruitment process to boat sharing practices, which opens for qualitative and quantitative methods. Quantitative methods could be applied to a representative sample of the Oslo population to map the general interest in enrolling in boat sharing practices. This survey could be combined with questions on electric boats.

Second, the report Aktiv Vannflate touched upon the theme of social sustainability. For instance, they proposed boat sharing to recruit new user groups to boating. Future studies could investigate the recruitment potential of people with specific backgrounds, for instance, immigrant backgrounds, in joining the practice of boat sharing.

Third, the present study did not cover P2P, cooperative, and non-profit models of boat sharing. Future studies may explore the potential of different organisational models. For example, different models may recruit different user segments.

7 CONCLUSION

In the present thesis, I have identified potential barriers and opportunities to reproduce boat sharing practices. I have also proposed a definition of boat sharing and aimed to describe the practice elements of boat sharing. The context was the Oslo metropolitan area and the two companies Kruser and Skipperi.

The main objective of this thesis was to research under what conditions boat sharing may be reproduced in Oslo along sustainable pathways, identifying barriers and opportunities for reproduction. Secondary objectives included the mapping of the field and to provide suggestions for future research.

I applied Pantzar and Shove's (2010) three-element model as the theoretical framework. This is a dynamic framework to understand how practices emerge, persist, or disappear. The elements of meaning, material and competencies are suggested to exist independently of a practice. However, the elements become interconnected and routinized when practices stabilize. A fundamental assumption is the practitioners' critical role as co-entrepreneurs in the innovation process to integrate practice elements through "circuits of reproduction".

The analysis was divided into three sections. I started with a simple application of the three-element model in line with Pantzar and Shove (2010). In the following section, I made an analytical dive into the meaning elements of boat sharing to understand how the elements were co-shaped between providers and practitioners. Finally, I studied opportunities for reproduction at the level of the municipality.

The providers presented "socialization", "trust", and "limitless boating" as essential meanings of their services. Sometimes the translation of meaning elements from providers to practitioners may represent a barrier. For instance, I found that practitioners sometimes misinterpret or abuse the meaning element. What is more, I identified opportunities for the reproduction of boat sharing practices, including technology usage.

Below I list potential reproduction barriers and opportunities:

- Limitations in the booking system may feel contradictory to the meaning of "limitless boating".
- For users that prefer to use a boat only a few times during the summer, the fixed price of 20-30,000 NOK may be a barrier
- Kruser may face a double challenge, as their practitioners must simultaneously adopt boat sharing and electric boat practices.
- Some practitioners appreciate the noise-free character of electric boats, as they may socialize without problems.
- Technologies are essential in influencing the competence of how to use the service. For instance, technologies may drive a safe and energy-efficient usage of boats.

Overall, the practitioners in my sample appreciated boat sharing as a practice. Outsourcing of responsibilities and the price were their central motivators. Nevertheless, several of the practitioners considered either purchasing a boat or upgrading their memberships.

Finally, I identified reproduction barriers and opportunities at the level of the municipality. The existing contracts between the municipality and boating associations were identified as a barrier. New contracts are awaiting approval from the Vice Mayor for Environment and Transport. Moreover, a new marina at Sørenga with 16 berths reserved boat sharing providers is awaiting funding. Investments in this project would give boat sharing practitioners access to a pool in the middle of the city and make it possible for the providers to scale up their services fast.

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Appendix 1: interview guide practitioners

Introduction:	Interviewer explains about the interview (the project, main themes for interview, length, anticipated use of results, etc.) Gives information about confidentiality and privacy Asks permission to use tape recorder
Life situation	How would you describe your life situation at present? (Neighbourhood, family members, life course, recent changes in life course, etc.) Main daytime occupations of household members? (Work, school, studies, etc.?)
Daily travel/shared transport resources	What kind of transport resources does the household have access to? (Cars, shared cars, bikes, boats, public transport etc.?) To what extent are you using sharing economy services, such as electric scooters, city bikes etc.? How do you feel about these sharing services?
Leisure time	How do you usually spend your leisure time? (Hobbies, outdoors vs. indoors activities, sports, etc.)

	Have you always spent your leisure time this way? (Openness to change, traditions etc.) What kinds of holiday or weekend trips do you make? Please tell us about, for instance, your latest overnight trip What kind of transport do you use for such holiday/weekend trips?
Boat usage	Did you have any experience with boating before enrolling in boat sharing? Which values or feelings do you associate with boating? (Freedom, flexibility, nature etc.) Do you have any preferences in terms of boat model, max speed, and range? Could you estimate how frequently you are using a boat during a season, and for how many hours/days at the time? What do you feel about sharing vs owning a boat?
Boat sharing in general	When/how were you introduced to the existence of boat sharing the first time? What made you enrol? Which providers of organised boat sharing do you know of (Kruser, Seashare, Green Boats, etc.)? What is your impression of these providers? What are the benefits of boat sharing for you as a user (individual, societal, regional) Could you rate which factors were central motivators for enrolling in boat sharing? (Environmental, economic, social, utilitarian, etc.) What are the disadvantages of boat sharing for you as a user (individual, societal, regional) Could you explain how you use the service? For instance, how often do you use the service, do you drive slow/fast, are you combining the trips with other activities (e.g., water sports, swimming, fishing) With whom are you using the service (friends, family, alone?)

	What factors do you think will determine whether other individuals will enrol in boat sharing? (Price, range, flexibility in bookings, boat models etc.) Do you see BS or your current behaviour as temporary or long term? (are you likely to re-subscribe for next season) Are there any modifications in the service that could make you use it more? E.g. dedicated parking, booking options, other boat models etc.?
Other	Anything else you would like to mention? Are there some people you would recommend us to invite as participants in this study?

Appendix 2: interview guide providers

Introduction:

Interviewer explains about the interview (the project, main themes for interview, length, anticipated use of results, etc.)

Gives information about confidentiality and privacy (and confidentiality statement if applicable)

Asks permission to use tape recorder

Questions:

1. Could you present a brief introduction of your business?
2. How did you manage to establish the company? Did you receive any support? Were there some barriers?
    1. Finances, organisational structure, regulations, attitudes etc.?
3. What is the most important product/service of your business? (value proposition)
    1. What is the main selling argument (access, flexibility, green alternative etc.)?
    2. Do you have any plans for scaling in near future? Why/why not?
    3. What technology is your main expertise (electric boats, hybrid, different models, booking systems etc.?)

    4. Do you have any plans of upgrading your fleet to hybrid/e-boats etc. to reduce emissions? Why/why not?
    5. What would you consider the greatest opportunities or challenges in adopting new technologies?
4. Who is your most important customer group?
    1. Individuals, households, businesses, organisations (P2P, B2C, B2B)?
    2. Which characteristics define your current customer groups (socio-demographics, age etc.)? Why do you think this is the case?
    3. Do you have any plans of targeting customer groups with different characteristics? Why/why not?
    4. Which opportunities/challenges might be encountered when targeting new customer groups?
    5. To what extent do you think new customers would be current boat owners, non-owners with boat knowledge, or people with neither access nor knowledge?
    6. What could be the main motivators for reaching new customer groups (marketing, price, inclusive design, environment etc.?)
    7. Have you observed any changes in trends among customers (preferences in speed, size, owning vs sharing, e-boats etc.)? To what extent are you (planning to) modifying your (business) models to meet changes in trends?
5. How do you get in touch with the customers? (channels)
    1. Online booking systems, smart phones, app, etc.?
    2. Do you have plans for other systems for reaching the customers in the future? Why/why not?
6. Which relations do you have with the customers?
    1. Have you involved the customers in the development of the service?
    2. Do you have plans for the development of new customer relations in near future? Why/why not?
    3. Is profitability the main goal for the business in its current phase, or other elements (market share etc.)?
    4. What are your plans for developing new models for selling the product/service in near future? Why/why not?
    5. What are the main costs and income sources for the company?
7. Who owns the boats, who finance the boats (key resources)?

    1. Do you have plans of attracting new investors, or developing new sources for income?
    2. What are the key competences of the company? Do you have any plans for developing new competences in near future?
    3. How the organisation of the firm, and to what extent is are you providing a specialized product/service?
8. In what geographical areas do you operate today (urban, suburban, etc.)? Why?
    1. Do you think it is possible to expand/scale the business to new geographical areas? Why/why not?
9. Do you think your sharing economy model could contribute to the targets of more sustainable development? Why/why not?
10. In your opinion, what are the most central drivers and barriers for boat sharing?
    1. Investments, organisation, regulations, attitudes etc.?
11. Is there a need for public involvement in incentivizing organised boat sharing? If so, what policies are needed?
12. To what extent are you cooperating with the public authorities (nationally, regionally, and locally) and how do you cooperate?
13. Pay-per-trip, monthly/annual subscription, distance (km fee), differently - and how much is the price?
14. How do you sell the product/service to the customers/users (turnover/profits)?